

**Town of Boxford Other
Postemployment Benefits Plan**

GASB 75 Actuarial Valuation

With a Valuation Date of July 1, 2017

As of the Measurement Date:
July 1, 2017

As of the Measurement Date:
July 1, 2018

&

For the Reporting Date:
June 30, 2018

For the Reporting Date:
June 30, 2019

Delivered October 24, 2018

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October 24, 2018

Personal and Confidential

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

Dear Ms. Benevento:

We have performed an actuarial valuation of the Town of Boxford Other Postemployment Benefits Plan for the Reporting Date & fiscal year ending June 30, 2018 with a Measurement Date of July 1, 2017 and a Valuation Date of July 1, 2017. The figures presented in this report reflect the adoption, by the Town of Boxford, of Statement Nos. 74 and 75 of the Governmental Accounting Standards Board ("GASB 74/75") effective for the fiscal year 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 refer you to Section I of this report for a detailed summary and commentary on the results of the valuation and a comparison with the prior valuation. Section II is a summary of the plan provisions, and Section III describes the actuarial cost method and assumptions. Details for cost calculations, supporting data, and disclosures are provided in Exhibits A through C.

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

October 24, 2018**ACTUARIAL CERTIFICATION**

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the Town of Boxford other postemployment benefit programs with a Valuation Date of July 1, 2017 with a Measurement Date of July 1, 2017 for the Reporting Date & fiscal year ending June 30, 2018 in accordance with generally accepted actuarial principles and practices. 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

EXECUTIVE SUMMARY

GASB 74 and 75 Impact

The Town adopted GASB 74 for the fiscal year ending June 30, 2017 and GASB 75 for the fiscal year ending June 30, 2018. The adoption of GASB 74/75 introduces a new actuarial cost method and discount rate as well as new disclosures and methodologies for reporting plan liabilities and OPEB expenses. Significant changes have been made to the recognition of OPEB expenses, which makes the comparison of Net OPEB Expense in the current valuation to the expenses reported under GASB 45 misleading. The liability reported on the Town's balance sheet is likely to increase dramatically as GASB 74/75 require the recognition of liabilities immediately rather than over a 30 year period as GASB 45 allowed.

What caused plan liabilities to change from FY 16 to FY 18?

Plan experience was less favorable than expected - for the year ending on the Measurement Date of July 1, 2017, the Plan saw an experience loss of \$1,854,235 or 18.66% of the beginning Total OPEB Liability ("TOL"). This was mainly due to a larger than expected increase in the number of retirees as well as updated teacher retirement assumptions. This was somewhat offset by premiums for Medical plans increasing less than the expected 10%. The experience loss on TOL and the experience gain on assets are amortized into the net OPEB expense over time until fully recognized. Changes in assumptions decreased disclosed liabilities by \$290 thousand.

Over the two year period, the TOL went from \$10,862,066 as of July 1, 2015 to \$12,276,544 as of July 1, 2017 for an increase of \$1,414,478. The Net OPEB Expense was \$446,861 for the year ending on the July 1, 2017 Measurement Date. As this is the first year using GASB 75 methodology, there is no baseline for comparison. For a projection of future costs and liabilities refer to Exhibit D.

EXECUTIVE SUMMARY

(continued)

Assumption changes

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

- ✓ Due to the GASB 75 standards the discount rate was changed from 6.00% to 7.00% decreasing the disclosed liability by \$1.5 million.
- ✓ Retirement rates for teachers have been updated increasing the disclosed liability by \$1.2 million.
- ✓ Assumption changes caused Normal 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.

Key Drivers of Plan Liabilities

Several key drivers of plan costs and liabilities are:

- ✓ Premiums for Post 65 (Medicare Integrated) plans - represent 75% 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 5.0% per year
- ✓ Discount Rate (7.00%) – Higher discount rates yield lower liabilities and vice versa
- ✓ Cost Sharing - Under Massachusetts law you may charge retirees up to 50% of premiums for health insurance

EXECUTIVE SUMMARY

(continued)

What is Implicit Subsidy? How does it impact us?

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.

Impact of Implicit Subsidy		
	As of the Measurement Date	
Impact on Liability	<u>July 1, 2017</u>	<u>July 1, 2015</u>
I. Actuarial Accrued Liability	12,276,544	10,862,066
II. Actuarial Accrued Liability (Excluding Implicit Subsidy)	<u>11,635,673</u>	<u>N/A</u>
III. Liability from Implicit Subsidy [I. - II.]	640,871	N/A

	For the Measurement Period Ending	
Impact on Payments	<u>July 1, 2017</u>	<u>July 1, 2015</u>
IV. Employer Payments (Including Implicit Subsidy)	497,053	488,173
V. Actual Employer Payments	<u>N/A</u>	<u>N/A</u>
VI. Implicit Subsidy [IV. - V.]	N/A	N/A

EXECUTIVE SUMMARY

(continued)

What are some 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, 2017	July 1, 2015
Measurement Date & Period Ending	July 1, 2017	July 1, 2015
Reporting Date/Fiscal Year End	June 30, 2018	June 30, 2016
Total OPEB Liability	12,276,544	10,862,066
Per Eligible Active Plan Participant	33,975	30,043
Per Retiree/Spouse Plan Participant	41,768	42,686
Total Annual Service Cost (annual benefit accrual)	286,561	345,016
Per Eligible Active Plan Participant	1,524	1,716
Expected Employer Share of Retiree Costs	497,053	488,173
Per Retiree/Spouse Plan Participant	3,525	4,320
Net OPEB Liability as a % of Payroll	102.60%	88.60%
Average Annual Medical Plan Premium (Single Coverage)	5,806	6,188
Average Annual Medical Plan Premium (Family Coverage)	23,882	24,140
<u>Projected 2022 Excise Tax Thresholds</u>		
Annual Medical Plan Premium (Single Coverage)	12,511	
Annual Medical Plan Premium (Family Coverage)	32,676	

EXECUTIVE SUMMARY

(continued)

Liabilities & Benefit Payments in today's dollars

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

For the Period Ending on the Measurement Date of:	Number of Retirees, Spouses & Surviving Spouses	Present Value at 3.00% of Total OPEB Liability	Present Value at 3.00% of Employer Share of Premiums / Claims including "implicit cost"
July 1, 2017	141	12,276,544	497,053
July 1, 2022	176	12,797,403	657,655
July 1, 2027	193	13,323,391	755,905
July 1, 2032	197	13,604,138	799,784
July 1, 2037	190	14,060,822	805,471
July 1, 2042	179	14,947,529	812,073
July 1, 2047	171	16,081,807	869,836

A full projection of plan costs and liabilities in today's dollars is shown in Exhibit D of this report.

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

Town of Boxford
Assuming Funding - 7.00% discount rate
Comparison of Plan Liabilities to Prior Valuation

Valuation Date		July 1, 2017	July 1, 2015
For the Measurement Period ending on the Measurement Date of:		July 1, 2017	July 1, 2015
For the Reporting Period & Fiscal Year ending on:		June 30, 2018	June 30, 2016
I.	Present Value of Future Benefits		
A.	Actives	8,451,171	9,059,831
B.	Retirees/Disabled	5,889,251	4,823,499
C.	Total	14,340,422	13,883,330
II.	Present Value of Future Normal Cost	2,063,878	3,021,264
III.	Total OPEB Liability (Individual Entry Age Normal)		
A.	Actives	6,387,293	6,038,567
B.	Retirees/Disabled	5,889,251	4,823,499
C.	Total	12,276,544	10,862,066
IV.	Fiduciary Net Position [Plan Assets]	1,659,410	879,001
V.	Net OPEB Liability (Asset) [III. - IV.]	10,617,134	9,983,065
VI.	Funded Ratio [IV. / III.]	13.52%	8.09%
VII.	Annual Covered Payroll	10,350,157	11,267,906
VIII.	Net OPEB Liability (Asset) as % of Covered Payroll	102.6%	88.6%
IX.	Number of Eligible Participants		
A.	Actives	188	201
B.	Retirees/Disabled	141	113
C.	Total	329	314
X.	Service Cost	286,561	345,016
XI.	Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	698,366	N/A
XII.	Projected Earnings on OPEB Plan Investments	(92,857)	N/A
XIII.	Net Recognition of Deferred (Inflows)/Outflows	351,844	N/A
XIV.	Financial Statement Expense [X.+XI.+XII.+XIII.]	1,243,914	N/A
XV.	Employer Share of Costs	(497,053)	(488,173)
XVI.	Employer (Payments)/Withdrawals to/from OPEB Trust	(300,000)	(263,113)
XVII.	Total Employer Contribution [XV. + XVI.]	(797,053)	(751,286)
XVIII.	Other Changes	0	N/A
XIX.	Net OPEB Expense [XIV.+XVII.+XVIII.]	446,861	N/A
XX.	Discount Rate	7.00%	6.00%

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Boxford

Plan Liabilities as of the July 1, 2017 Measurement Date

Assuming Funding - 7.00% discount rate

	<u>Medical</u>	<u>Dental</u>	<u>Life</u>	<u>Excise Tax</u>	<u>Total</u>
I. Present Value of Future Benefits					
A. Actives	8,393,248	0	0	57,923	8,451,171
B. Retirees/Disabled	<u>5,861,656</u>	<u>0</u>	<u>0</u>	<u>27,595</u>	<u>5,889,251</u>
C. Total	14,254,904	0	0	85,518	14,340,422
II. Present Value of Future Normal Cost	2,034,133	0	0	29,745	2,063,878
III. Total OPEB Liability					
A. Actives	6,359,115	0	0	28,178	6,387,293
B. Retirees/Disabled	<u>5,861,656</u>	<u>0</u>	<u>0</u>	<u>27,595</u>	<u>5,889,251</u>
C. Total	12,220,771	0	0	55,773	12,276,544
IV. Fiduciary Net Position [Plan Assets]	1,651,871	0	0	7,539	1,659,410
V. Net OPEB Liability (Asset) [III. - IV.]	10,568,900	0	0	48,234	10,617,134
VI. Annual Covered Payroll	10,350,157	10,350,157	10,350,157	10,350,157	10,350,157
VII. Net OPEB Liability (Asset) as % of Covered Payroll	102.1%	0.0%	0.0%	0.5%	102.6%
VIII. Number of Eligible Participants					
IX. A. Actives	188	0	0	188	
B. Retirees/Disabled	<u>141</u>	<u>0</u>	<u>0</u>	<u>141</u>	
C. Total	329	0	0	329	
For the Reporting Date and Fiscal Year Ending June 30, 2018					
X. Service Cost	284,042	0	0	2,519	286,561
XI. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	694,286	0	0	4,080	698,366
XII. Recognition of Deferred (Inflows)/Outflows from Plan Design Changes	0	0	0	0	0
XIII. Recognition of Deferred (Inflows)/Outflows from Expected & Actual Experience	369,162	0	0	1,685	370,847
XIV. Recognition of Deferred (Inflows)/Outflows from Changes in Assumptions	0	0	0	0	0
XV. Projected Earnings on OPEB Plan Investments	(92,435)	0	0	(422)	(92,857)
XVI. Recognition of Deferred (Inflows)/Outflows from Earnings on Investments	(18,916)	<u>0</u>	<u>0</u>	(87)	(19,003)
XVII. Financial Statement Expense [X.+XI.+XII.+XIII.+XIV.+XV.+XVI.]	1,236,139	0	0	7,775	1,243,914
XVIII. Employer Share of Costs	(497,053)	0	0	0	(497,053)
XIX. Employer (Payments)/Withdrawals to/from OPEB Trust	(298,636)	0	0	(1,364)	(300,000)
XX. Total Employer Contribution [XVIII. + XIX.]	(795,689)	0	0	(1,364)	(797,053)
XXI. Other Changes	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
XXII. Net OPEB Expense [XVII.+XX.+XXI.]	440,450	0	0	6,411	446,861

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Boxford

Plan Liabilities as of the July 1, 2017 Measurement Date

Assuming Funding - 7.00% discount rate

	Town Employees and Retirees	School Employees and Retirees	Total
I. Present Value of Future Benefits			
A. Actives	2,294,087	6,157,084	8,451,171
B. Retirees/Disabled	<u>1,719,235</u>	<u>4,170,016</u>	<u>5,889,251</u>
C. Total	4,013,322	10,327,100	14,340,422
II. Present Value of Future Normal Cost	781,753	1,282,125	2,063,878
III. Total OPEB Liability			
A. Actives	1,512,334	4,874,959	6,387,293
B. Retirees/Disabled	<u>1,719,235</u>	<u>4,170,016</u>	<u>5,889,251</u>
C. Total	3,231,569	9,044,975	12,276,544
IV. Fiduciary Net Position [Plan Assets]	436,288	1,223,122	1,659,410
V. Net OPEB Liability (Asset) [III. - IV.]	2,795,281	7,821,853	10,617,134
VI. Annual Covered Payroll	3,037,805	7,312,352	10,350,157
VII. Net OPEB Liability (Asset) as % of Covered Payroll	92.0%	107.0%	102.6%
VIII. Number of Eligible Participants			
A. Actives	66	122	188
B. Retirees/Disabled	<u>43</u>	<u>98</u>	<u>141</u>
C. Total	109	220	329

For the Reporting Date and Fiscal Year Ending June 30, 2018

IX. Service Cost	91,795	194,766	286,561
X. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	184,782	513,584	698,366
XI. Recognition of Deferred (Inflows)/Outflows from Plan Design Changes	0	0	0
XII. Recognition of Deferred (Inflows)/Outflows from Expected & Actual Experience	97,618	273,229	370,847
XIII. Recognition of Deferred (Inflows)/Outflows from Changes in Assumptions	0	0	0
XIV. Projected Earnings on OPEB Plan Investments	(24,428)	(68,429)	(92,857)
XV. Recognition of Deferred (Inflows)/Outflows from Earnings on Investments	(4,996)	(14,007)	(19,003)
XVI. Financial Statement Expense [IX.+X.+XI.+XII.+XIII.+XIV.+XV.]	344,771	899,143	1,243,914
XVII. Employer Share of Costs	(131,276)	(365,777)	(497,053)
XVIII. Employer (Payments)/Withdrawals to/from OPEB Trust	(79,382)	(220,618)	(300,000)
XIX. Total Employer Contribution [XVII. + XVIII.]	(210,658)	(586,395)	(797,053)
XX. Other Changes	<u>0</u>	<u>0</u>	<u>0</u>
XXI. Net OPEB Expense [XVI.+XIX.+XX.]	134,113	312,748	446,861

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Boxford **Assuming Funding - 7.00% discount rate** **For the Period ending on the July 1, 2017 Measurement Date**

	<u>Present Value of Future</u> <u>Benefits</u>	<u>Total OPEB Liability</u> <u>(Individual Entry Age</u> <u>Normal)</u>	<u>Service Cost</u>
Actives			
Under Age 65			
A. Participants	2,229,921	1,682,193	65,164
B. Spouses	<u>781,668</u>	<u>584,474</u>	<u>22,914</u>
C. Total	3,011,589	2,266,667	88,078
Age 65 and Over			
A. Participants	3,488,410	2,724,869	131,047
B. Spouses	<u>1,951,172</u>	<u>1,395,757</u>	<u>67,436</u>
C. Total	5,439,582	4,120,626	198,483
Actives Total			
A. Participants	5,718,331	4,407,062	196,211
B. Spouses	<u>2,732,840</u>	<u>1,980,231</u>	<u>90,350</u>
C. Total	8,451,171	6,387,293	286,561
Retirees/Disabled			
Under Age 65			
A. Participants	616,921	616,921	0
B. Spouses	<u>131,776</u>	<u>131,776</u>	<u>0</u>
C. Total	748,697	748,697	0
Age 65 and Over			
A. Participants	4,866,566	4,866,566	0
B. Spouses	<u>273,988</u>	<u>273,988</u>	<u>0</u>
C. Total	5,140,554	5,140,554	0
Retirees/Disabled Total			
A. Participants	5,483,487	5,483,487	0
B. Spouses	<u>405,764</u>	<u>405,764</u>	<u>0</u>
C. Total	5,889,251	5,889,251	0
Total Population			
A. Participants	11,201,818	9,890,549	196,211
B. Spouses	<u>3,138,604</u>	<u>2,385,995</u>	<u>90,350</u>
C. Total	14,340,422	12,276,544	286,561

OVERVIEW OF GASB 74 AND 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 post-employment 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 post-employment benefits.

OVERVIEW OF GASB 74 AND 75

(continued)

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 post-employment benefits and when will they start?

Medical inflation and claims cost assumptions: When an employee starts receiving post-employment 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.

OVERVIEW OF GASB 74 AND 75

(continued)

GASB 74/75 – How we got here:

GASB 74 and 75 were designed to recognize the Other Postemployment Benefits (“OPEB”) earned by employees throughout their working career vs. when they are paid in retirement – accrual accounting vs. “pay-as-you-go” accounting while increasing disclosures to better reflect the plan’s liabilities and future funding requirements. 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. Additionally, GASB 74 and 75 require increased disclosures comparable to those required under GASB 67 and 68 and interest rates used in the valuation are more closely tied to the plan’s underlying investment and funding policy.

GASB 74 and 75 Impact

The Town has adopted GASB 74 for the fiscal year ending June 30, 2017 and GASB 75 for the fiscal year ending June 30, 2018. The adoption of GASB 74/75 introduces a new actuarial cost method and discount rate as well as new disclosures and methodologies for reporting plan liabilities and OPEB expenses. Significant changes have been made to the recognition of OPEB expenses, making the comparison of Net OPEB Expense in the current valuation to the expenses reported under GASB 45 misleading. The liability reported on the Town’s balance sheet will increase dramatically as GASB 74/75 require the recognition of liabilities immediately rather than recognizing liabilities (Net OPEB Obligation) over a 30 year period as GASB 45 allowed. Please keep these changes in mind when considering any comparison to previously reported liabilities and expenses.

SECTION II

SUMMARY OF PLAN PROVISIONS

Effective Date

GASB 45 is adopted July 1, 2007

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

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

Plan Year

July 1 through June 30.

Eligibility

An employee hired before April 2, 2012 shall become eligible to retire under this plan upon attainment of age 55 as an active member and completion of 10 years of service or an employee shall be able to retire with 20 years of service regardless of age. Those hired on or after April 2, 2012 shall be eligible to retire upon attainment of age 60 with 10 years of creditable service.

Creditable Service

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

Participant Contributions

Premiums for Medical insurance vary by coverage level and plan selected, ranging from 21% to 50% of underlying gross premiums. Surviving spouses shall pay 100% of premiums

Benefits Offered

Comprehensive Medical Insurance offered through Blue Cross Blue Shield of Massachusetts.

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.

Normal Retirement Date

The normal retirement date is the first day of the month following a participant's 65th birthday.

Early Retirement

Early retirement is available for any participant who has attained benefit eligibility.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

A. ACTUARIAL COST METHOD

The actuarial cost method used to calculate the costs and liabilities of the plan is the Individual Entry Age Normal Actuarial Cost Method. Under this method, the annual normal 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 normal cost for each active member is a level percent of payroll. The actuarial accrued liability is the actuarial present value of the projected benefit times the ratio of past service to expected total service at retirement/termination.

Actuarial gains and losses are calculated each year and amortized into the OPEB expense. Gains and losses arising from plan design changes are recognized immediately. Gains and losses arising from differences between expected and actual investment returns are amortized over a five (5) year period. Gain and losses arising from differences between expected and actual plan experience and changes in actuarial assumptions are amortized over the remaining lifetime of all active and retired plan participants (5.00 years for the Town for the 2018 fiscal year).

All employees who are plan participants on the valuation date are included in the actuarial valuation.

B. ASSET VALUATION METHOD

The actuarial value of assets is equal to the Market Value of the Plan's assets as of the measurement date.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS

We used the following assumptions in this year's actuarial valuation:

Pre-Retirement Mortality

It is assumed that pre-retirement mortality is represented by the RP-2000 Employees Mortality Table projected generationally with scale BB and a base year 2009 for males and females

Post-Retirement Mortality

It is assumed that post-retirement mortality is represented by the RP-2000 Healthy Annuitant Mortality Table projected generationally with scale BB and a base year 2009 for males and females

Disabled Mortality

It is assumed that disabled mortality is represented by the RP-2000 Healthy Annuitant Table projected generationally with Scale BB and a base year 2012 for males and females

Mortality Experience Study

The mortality assumptions reflect PERAC's 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.

Discount Rate

7.00% per annum (previously 6.00%)

Long Term Rate of Return

7.04% (based on investment policy)

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Municipal Bond Rate

3.13% as of July 1, 2017 (source: S&P Municipal Bond 20-Year High Grade Index - SAPIHG)

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						
<u>Age</u>	<u>0-4 Years of Service (Males)</u>	<u>0-4 Years of Service (Females)</u>	<u>5-9 Years of Service (Males)</u>	<u>5-9 Years of Service (Females)</u>	<u>10+ Years of Service (Males)</u>	<u>10+ Years of Service (Females)</u>
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		
<u>Service</u>	<u>Public Safety Male</u>	<u>Public Safety Female</u>
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%

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Retirement Rates

It was assumed that the following percentage of eligible employees would retire each year:

<u>Age</u>	<u>Standard Male</u>	<u>Standard Female</u>	<u>Male Teachers</u>	<u>Female Teachers</u>	<u>Public Safety</u>
45	0.00%	0.00%	0.00%	0.00%	1.00%
46	0.00%	0.00%	0.00%	0.00%	1.00%
47	0.00%	0.00%	0.00%	0.00%	1.00%
48	0.00%	0.00%	0.00%	0.00%	1.00%
49	0.00%	0.00%	0.00%	0.00%	1.00%
50	1.00%	1.50%	2.00%	1.50%	2.00%
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.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

Disability rates

It was assumed that the following percentage of eligible employees would become permanently disabled each year:

<u>Age</u>	<u>Standard</u>	<u>Teachers</u>	<u>Public Safety</u>
20	0.01%	0.05%	0.20%
25	0.01%	0.06%	0.20%
30	0.01%	0.07%	0.21%
35	0.03%	0.10%	0.40%
40	0.07%	0.21%	0.71%
45	0.10%	0.30%	1.00%
50	0.13%	0.42%	1.10%
55	0.14%	0.50%	0.80%
60	0.12%	0.50%	0.80%

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS (continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Healthcare Trend

It was assumed that healthcare costs would increase in accordance with the trend rates in the following table:

<u>Year</u>	<u>Medical</u>	<u>Dental</u>
FY 2013	6.0%	5.5%
FY 2014	5.0%	5.0%
FY 2015	5.0%	5.0%
FY 2016	5.0%	5.0%
FY 2017	5.0%	5.0%
FY 2018	5.0%	5.0%
FY 2019	5.0%	5.0%
FY 2020+	5.0%	5.0%

Participation Rate

It was assumed that 80% of employees eligible to receive retirement benefits would enroll in the retiree medical plans upon retirement.

Percent Married

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. If provided, the actual census information was used. Otherwise it was assumed that a male spouse is three years older than a female spouse and same sex spouses are assumed to be the same age.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Compensation Increases

3.00% per year.

Open Group Forecast

It was assumed for projecting plan liabilities in future years that the active population would remain unchanged and that those who terminate employment or retire will be replaced with new employees with the demographics below:

Open Group Forecast Population Demographics

<u>Age</u>	<u>Male</u>	<u>Female</u>
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 values in this report reflect a closed group and do not reflect any new entrants after the valuation date.

For purposes of this valuation, retiree contributions were assumed to increase with the same trend rate as health care claims.

Medicare Part B Penalties are not reflected

Medicare Part B Reimbursement is not reflected

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

As part of the Other Post-Employment Benefits Program, there are situations where the cost is borne partly or entirely on the retirees. In most cases, the premium that is used to split the cost is lower than the true cost of providing the medical benefits, for two reasons:

- ✓ The cost sharing program is usually a fixed amount such as a COBRA premium that does not take into account the age of the retiree and his/her dependents. Since medical costs generally increase with age, the cost sharing premium is often lower than the true cost of the medical benefits:
- ✓ The cost sharing premium is usually a blended rate that takes into account the cost of medical benefits for active employees as well as retirees. Medical costs are generally higher for retirees than for active employees of the same age. This means that, again, the cost sharing premium is often lower than the true cost of the medical benefits.

Because of these two factors, a retiree who is paying 100% of the cost sharing premium is most likely not paying 100% of the true cost of the medical benefits. This situation is known as an "implicit subsidy". GASB 74 and 75 require the plan sponsor to measure the liability for this subsidy; that is, the difference between the true cost of the medical benefits and the cost sharing premiums paid by the retiree. 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. To do this, our valuation consists of several steps:

First, we calculate the liability for the true cost of medical benefits expected to be received by retirees and their dependents. This liability is based on factors developed by actuaries that reflect how the cost of medical benefits varies by age and gender, as well as the other assumptions discussed on the prior page.

Next, we calculate the liability for the future premiums expected to be paid by the retiree for their own and their dependents' coverage. This liability is based on the current premium rates without adjustment for age or gender. It also is based on the terms of the retiree medical program – different retirees pay different percentages based on their union, date of retirement, age at retirement, and other factors.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

I. CLAIMS COSTS DEVELOPMENT - Based on Active & Retiree Incurred Claims & Premiums

	Number of Participants			
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>	<u>Total</u>
MIIA BCEP Benchmark	6		12	18
MIIA HMO Blue Custom Network Benchmark	1		2	3
MIIA HMO Blue Benchmark	65		79	144
Managed Blue for Seniors 2	72			72
Medex 2	34			34
Total	178	0	93	271

	Per Contract Costs (monthly) - FY 2019		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
MIIA BCEP Benchmark	904.50		2,420.20
MIIA HMO Blue Custom Network Benchmark	711.62		1,901.12
MIIA HMO Blue Benchmark	765.18		2,044.22
Managed Blue for Seniors 2	307.77	615.54	
Medex 2	364.21	728.42	

Gross Expected FY 2019 Incurred Premiums	3,417,071
Adjustment to reflect children's claims	(586,621)
Total Expected FY 2019 Incurred Premiums (adults only)	2,830,450

II. PRE-65 AND POST-65 PER CAPITA RETIREE ANNUAL CLAIM COSTS

	Employer <u>Primary</u>	Medicare <u>Primary</u>
Age 65	12,625	3,540
Average Age	9,364	3,910

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

III. BREAKDOWN OF CLAIM COSTS

ALL ACTIVE EMPLOYEES AND SPOUSES

Age Bracket	Aged (F) Average Claims	Aged (M) Average Claims
24 & Under	7,388	3,091
25 to 29	7,388	3,328
30 to 34	7,388	4,009
35 to 39	7,388	4,786
40 to 44	7,388	5,631
45 to 49	8,199	6,718
50 to 54	9,004	8,114
55 to 59	9,798	9,871
60 to 64	11,082	11,836
65 to 69	12,208	13,041
70 & Over	13,492	14,398

ALL RETIREES AND SPOUSES - NOT MEDICARE ELIGIBLE

Age Bracket	Aged (F) Average Claims	Aged (M) Average Claims
44 & Under	7,388	5,631
45 to 49	8,199	6,718
50 to 54	9,004	8,114
55 to 59	9,798	9,871
60 to 64	11,082	11,836
65 to 69	12,208	13,041
70 to 74	13,492	14,398
75 to 79	14,601	15,592
80 to 84	15,339	16,386
85 to 89	16,127	17,225
90 & Over	16,949	18,104

ALL RETIREES AND SPOUSES - MEDICARE ELIGIBLE

Age Bracket	Aged (F) Average Claims	Aged (M) Average Claims
65 to 69	3,423	3,657
70 to 74	3,783	4,038
75 to 79	4,094	4,372
80 to 84	4,301	4,595
85 to 89	4,522	4,830
90 & Over	4,753	5,077

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS (continued)

E. DEVELOPMENT OF REPRESENTATIVE DENTAL PER CAPITA CLAIMS COSTS

I. CLAIMS COSTS DEVELOPMENT - with Active & Retiree Incurred Premiums

	Per Contract Costs (monthly) - FY 2019		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
Dental Plan	N/A		N/A

FY 2019 Expected Per Person Rate N/A

EXHIBIT AFINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

The GASB Standards for accounting and financial reporting for postemployment benefits other than pensions require the following disclosures in the financial statements related to the retiree medical, dental and life insurance benefits;

1. A DESCRIPTION OF THE RETIREE MEDICAL INSURANCE PROGRAM:

- a. Plan Type: Comprehensive Medical Insurance offered through Blue Cross Blue Shield of Massachusetts.
- b. Administrator: Town of Boxford
- c. Eligibility: An employee hired before April 2, 2012 shall become eligible to retire under this plan upon attainment of age 55 as an active member and completion of 10 years of service or an employee shall be able to retire with 20 years of service regardless of age. Those hired on or after April 2, 2012 shall be eligible to retire upon attainment of age 60 with 10 years of creditable service.
- d. Cost Sharing: Premiums for Medical insurance vary by coverage level and plan selected, ranging from 21% to 50% of underlying gross premiums. Surviving spouses shall pay 100% of premiums

2. A DESCRIPTION OF THE RETIREE DENTAL INSURANCE PROGRAM:

- a. Plan Type: Not offered
- b. Administrator: N/A
- c. Eligibility: N/A
- d. Cost sharing: N/A

3. A DESCRIPTION OF THE RETIREE LIFE INSURANCE PROGRAM:

- a. Plan Type: Not offered
- b. Administrator: N/A
- c. Eligibility: N/A
- d. Cost sharing: N/A

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

4. RETIREE MEDICAL AND LIFE INSURANCE CONTRIBUTIONS:

Group	Individual	Family
Medical	Varies by coverage level & plan – ranges from 21% to 50% of premiums. Surviving spouses shall pay 100% of premiums	Retirees will pay 34% of premiums for Family coverage
Dental	N/A	N/A
Life	N/A	N/A

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, 2017 Measurement Date total Town premiums plus implicit costs for the retiree medical program were \$497,053. The Town also made a contribution to an OPEB Trust of \$300,000 for a total contribution during the measurement period of \$797,053 to be reported on the financial statement for the fiscal year ending June 30, 2018.

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

6. INVESTMENT POLICY

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

Investment Target Allocation & Expected Long-Term Real Rate of Return			
Asset Class	Target Allocation	Asset Class	Long-Term Expected Real Rate of Return
Domestic Equity - Large Cap	14.50%	Domestic Equity - Large Cap	4.00%
Domestic Equity - Small/Mid Cap	3.50%	Domestic Equity - Small/Mid Cap	6.00%
International Equity - Developed Market	16.00%	International Equity - Developed Market	4.50%
International Equity-Emerging Market	6.00%	International Equity-Emerging Market	7.00%
Domestic Fixed Income	20.00%	Domestic Fixed Income	2.00%
International Fixed Income	3.00%	International Fixed Income	3.00%
Alternatives	23.00%	Alternatives	6.50%
Real Estate	14.00%	Real Estate	6.25%
Cash	0.00%	Cash	0.00%
Total	100.00%		
		I. Real Rate of Return	4.79%
		II. Inflation Assumption	2.75%
		III. Total Nominal Return [I. + II.]	7.54%
		IV. Investment Expense	0.50%
		V. Net Investment Return* [III.-IV.]	7.04%

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

7. **ACTUARIALLY DETERMINED CONTRIBUTION (ADC)**

The Town's Actuarially Determined Contribution (ADC) is an amount actuarially determined in accordance with the parameters of GASB Statement No. 74/75 which represents a level of funding that, if paid on an ongoing basis, is projected to cover the service cost each year and amortize any unfunded actuarial liabilities (or funding excess). The following table shows the components of the Town's annual ADC for the fiscal year and the amount actually contributed to the plan:

Actuarially Determined Contribution - Deficiency / (Excess)	
<u>For the Period Ending on the July 1, 2017 to be Reported on June 30, 2018</u>	
I. Service Cost	286,561
II. 30 year level flat dollar amortization of NOL at 7.00%	<u>799,623</u>
III. Actuarial Determined Contribution [I. + II.]	1,086,184
IV. Contributions in relation to the actuarially determined contribution	<u>(797,053)</u>
V. Contribution deficiency / (excess) [III. + IV.]	<u>289,131</u>
Covered employee payroll	10,350,157
Contributions as a % of covered employee payroll	7.70%

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

8. FUNDED STATUS AND FUNDING PROGRESS

As of the July 1, 2017 Measurement Date, the plan was 13.52% funded. The Total OPEB Liability (TOL) for benefits was \$12,276,544, and the Fiduciary Net Position was \$1,659,410, resulting in a Net OPEB Liability (NOL) of \$10,617,134. The covered payroll (annual payroll of active employees covered by the plan) was \$ 10,350,157 and the ratio of the NOL to the covered payroll was 102.6%.

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the actuarially determined contribution of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented in the required supplementary information following the financial statements, presents multiyear trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the Total OPEB Liabilities for benefits.

Fiscal Year	Measurement Date	Fiduciary Net Position	Total OPEB Liability	Net OPEB Liability	Funded Ratio	Covered Payroll	NOL as a % of Covered Payroll
2020	07/01/2019 (est.)	\$2,698,187	\$13,354,141	\$10,655,954	20.2%	\$10,980,482	97.0%
2019	07/01/2018 (est.)	\$2,182,433	\$12,792,821	\$10,610,388	17.1%	\$10,660,662	99.5%
2018	07/01/2017	\$1,659,410	\$12,276,544	\$10,617,134	13.5%	\$10,350,157	102.6%
2017	07/01/2016	\$1,171,540	\$11,362,043	\$10,190,503	10.3%	\$11,605,943	87.8%
2016	07/01/2015	\$879,001	\$10,862,066	\$9,983,065	8.1%	\$11,267,906	88.6%
2015	07/01/2014	\$648,064	\$11,432,656	\$10,784,592	5.7%	\$10,259,859	105.1%

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

9. FIDUCIARY NET POSITION

Statement of Fiduciary Net Position		
July 1, 2017 and July 1, 2018		
	<u>July 1, 2018</u>	<u>July 1, 2017</u>
Assets		
I. Cash and cash equivalents	0	0
<u>Receivables & Prepaid expenses:</u>		
II. Contributions	0	0
III. Investment Income	0	0
IV. Receivables from brokers for unsettled trades	0	0
V. Prepaid expenses	<u>0</u>	<u>0</u>
VI. Total Receivables [II.+III.+IV.+V.]	<u>0</u>	<u>0</u>
<u>OPEB Trust Investments:</u>		
VII. Fixed Income	501,959	381,663
VIII. Stocks	872,973	663,764
IX. Cash and cash equivalents	0	0
X. Real estate	305,541	232,318
XI. Alternative investments	<u>501,960</u>	<u>381,665</u>
XII. Total Investments [VII.+VIII.+IX.+X.+XI.]	<u>2,182,433</u>	<u>1,659,410</u>
Invested securities lending cash collateral	0	0
Capital assets, net of accumulated depreciation	0	0
Total Assets	2,182,433	1,659,410
Liabilities		
XIII. Accrued expenses and benefits payable	0	0
XIV. Securities lending cash collateral	0	0
XV. Payable to brokers for unsettled trades	<u>0</u>	<u>0</u>
XVI. Total liabilities [XIII.+XIV.+XV.]	<u>0</u>	<u>0</u>
XVII. Net Position restricted for OPEB [XII.-XVI.]	2,182,433	1,659,410

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

9. FIDUCIARY NET POSITION (CONTINUED)

Statement of Changes in Fiduciary Net Position	
<u>For the Year Ending on the July 1, 2017 Measurement Date</u>	
Additions	
<u>Contributions</u>	
Employer Contributions to OPEB Trust	<u>300,000</u>
Total Contributions	300,000
<u>Investment Income / (loss)</u>	
Interest	18,627
Dividends	13,275
Equity fund income, net	0
Net increase in fair value of investments	155,968
Securities lending income	0
Less investment expenses:	
Direct investment expense	0
Securities lending management fees	0
Securities lending borrower rebates	<u>0</u>
Net investment income	187,870
Other income	<u>0</u>
Total Additions	<u>487,870</u>
Deductions	
Service benefits	0
Disability benefits	0
Death benefits	0
Refunds	0
Administrative expenses	<u>0</u>
Total deductions	<u>0</u>
Net increase (decrease)	487,870
Net Position restricted for OPEB	
As of July 1, 2016	<u>1,171,540</u>
As of July 1, 2017	1,659,410

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

10. OPEB LIABILITY, OPEB EXPENSE AND ADC

Fiscal Year Ending June 30, 2018			
	Town Employees and Retirees	School Employees and Retirees	Total
I. Total OPEB Liability	3,231,569	9,044,975	12,276,544
II. Fiduciary Net Position as of July 1, 2017	436,288	1,223,122	1,659,410
III. Net OPEB Liability (Asset) [I. - II.]	2,795,281	7,821,853	10,617,134
IV. Service Cost	91,795	194,766	286,561
V. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	184,782	513,584	698,366
VI. Projected Earnings on OPEB Plan Investments	(24,428)	(68,429)	(92,857)
VII. Net Recognition of Deferred (Inflows)/Outflows	92,622	259,222	351,844
VIII. Financial Statement Expense [IV. + V. + VI. + VII. + VIII. + VI. + VII.]	344,771	899,143	1,243,914
IX. Employer Share of Costs	(131,276)	(365,777)	(497,053)
X. Employer (Payments) Withdrawals to/from OPEB Trust	(79,382)	(220,618)	(300,000)
XI. Total Employer Contribution [IX. + X.]	(210,658)	(586,395)	(797,053)
XII. Net OPEB Expense [VIII. + XI.]	134,113	312,748	446,861
XIII. Actuarial Determined Contribution (ADC)	302,320	783,864	1,086,184
XIV. Total Expected Contribution	210,658	586,395	797,053
XV. Percentage of ADC Contributed [XIV. / XIII.]	70%	75%	73%

Fiscal Year Ending June 30, 2019			
	Town Employees and Retirees	School Employees and Retirees	Total
I. Total OPEB Liability	3,385,061	9,407,760	12,792,821
II. Fiduciary Net Position as of July 1, 2018	574,411	1,608,022	2,182,433
III. Net OPEB Liability (Asset) [I. - II.]	2,810,650	7,799,738	10,610,388
IV. Service Cost	95,289	202,181	297,470
V. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	227,067	631,112	858,179
VI. Projected Earnings on OPEB plan investments	(33,919)	(95,014)	(128,933)
VII. Net Recognition of Deferred (Inflows)/Outflows	90,256	252,770	343,026
VIII. Financial Statement Expense [IV. + V. + VI. + VII.]	378,693	991,049	1,369,742
IX. Employer Share of Costs	(168,864)	(470,508)	(639,372)
X. Employer (Payments) Withdrawals to/from OPEB Trust	(92,612)	(257,388)	(350,000)
XI. Total Employer Contribution [IX. + X.]	(261,476)	(727,896)	(989,372)
XII. Net OPEB Expense [VIII. + XI.]	117,217	263,153	380,370
XIII. Actuarial Determined Contribution (ADC)	306,971	789,614	1,096,585
XIV. Total Expected Contribution	261,476	727,896	989,372
XV. Percentage of ADC Contributed [XIV. / XIII.]	85%	92%	90%

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

11. OPEB LIABILITY, OPEB EXPENSE AND DEFERRED INFLOW/OUTFLOW

Valuation Date	July 1, 2017	July 1, 2017
For the Measurement Period ending on the Measurement Date of:	July 1, 2017	July 1, 2018
For the Reporting Period & Fiscal Year ending on:	June 30, 2018	June 30, 2019

Source of Deferred Inflow/Outflow		
I. Deferred (Inflow)/Outflow from Actual vs. Expected Experience	1,483,388	1,112,541
II. Deferred (Inflow)/Outflow from Investment Experience	(76,010)	(92,279)
III. Deferred (Inflow)/Outflow from Changes in Benefit Terms	0	0
IV. Deferred (Inflow)/Outflow from Changes in Assumptions	0	0

Change in Deferred Inflow/Outflow		
I. Deferred Outflow at the beginning of the period	0	1,483,388
II. Deferred Outflow created during the period	1,854,235	0
III. Deferred Outflow recognized during the period	370,847	370,847
IV. Change in Deferred Outflow (II. - III.)	1,483,388	(370,847)
V. Deferred Outflow at end of the period (I. + IV.)	1,483,388	1,112,541
VI. Deferred Inflow at the beginning of the period	0	(76,010)
VII. Deferred Inflow created during the period	(95,013)	(44,090)
VIII. Deferred Inflow recognized during the period	(19,003)	(27,821)
IX. Deferred Inflow at end of the period (VII. - VIII.)	(76,010)	(16,269)
X. Deferred Inflow at end of the period (VI. + IX.)	(76,010)	(92,279)

Net OPEB Liability		
I. Net OPEB Liability at beginning of period	8,762,895	10,617,134
II. Service Cost	286,561	297,470
III. Interest on Total OPEB Liability, Service Cost, and Payments	698,366	858,179
IV. Projected Investment Income	(92,857)	(128,933)
V. Total Employer Contributions	(797,053)	(989,372)
VI. Net OPEB Expense - Before Recognition of Deferred (Inflow)/Outflow (II. + III. + IV. + V.)	95,017	37,344
VII. Deferred Outflow created during the period	1,854,235	0
VIII. Deferred Inflow created during the period	(95,013)	(44,090)
IX. Net OPEB Liability at end of period (I. + VI. + VII. + VIII.)	10,617,134	10,610,388

Net OPEB Expense		
I. Service Cost	286,561	297,470
II. Interest on Total OPEB Liability, Service Cost, and Payments	698,366	858,179
III. Projected Investment Income	(92,857)	(128,933)
IV. Recognition of Deferred (Inflow)/Outflow	351,844	343,026
V. Financial Statement Expense (I. + II. + III. + IV.)	1,243,914	1,369,742
VI. Benefit Payments	(497,053)	(639,372)
VII. Contributions to Trust	(300,000)	(350,000)
VIII. Total Employer Payments (VI. + VII.)	(797,053)	(989,372)
IX. Total Employer Payments (V. + VIII.)	446,861	380,370

Valuation Date	July 1, 2017	July 1, 2017
For the Measurement Period ending on the Measurement Date of:	July 1, 2017	July 1, 2018
For the Reporting Period & Fiscal Year ending on:	June 30, 2018	June 30, 2019

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

12. EFFECT OF 1% CHANGE IN HEALTHCARE TREND

Impact of a 1% Change in the Healthcare Trend Rate as of the July 1, 2017 Measurement Date

	<u>1% Decrease (4.00%)</u>	<u>Current Trend Rate (5.00%)</u>	<u>1% Increase (6.00%)</u>
I. Total OPEB Liability	10,084,493	12,276,544	14,931,115
II. Fiduciary Net Position	<u>1,659,410</u>	<u>1,659,410</u>	<u>1,659,410</u>
III. Net OPEB Liability (Asset) [I.-II.]	8,425,083	10,617,134	13,271,705
IV. Service Cost	206,085	286,561	390,582

Impact of a 1% Change in the Healthcare Trend Rate as of the July 1, 2018 Measurement Date

	<u>1% Decrease (4.00%)</u>	<u>Current Trend Rate (5.00%)</u>	<u>1% Increase (6.00%)</u>
I. Total OPEB Liability	10,508,586	12,792,821	15,559,027
II. Fiduciary Net Position	<u>2,182,433</u>	<u>2,182,433</u>	<u>2,182,433</u>
III. Net OPEB Liability (Asset) [I.-II.]	8,326,153	10,610,388	13,376,594
IV. Service Cost	213,929	297,469	405,450

13. EFFECT OF 1% CHANGE IN DISCOUNT RATES

Impact of a 1% Change in the Discount Rate as of the July 1, 2017 Measurement Date

	<u>1% Decrease (6.00%)</u>	<u>Current Discount Rate (7.00%)</u>	<u>1% Increase (8.00%)</u>
I. Total OPEB Liability	13,776,365	12,276,544	10,776,723
II. Fiduciary Net Position	<u>1,659,410</u>	<u>1,659,410</u>	<u>1,659,410</u>
III. Net OPEB Liability (Asset) [I.-II.]	12,116,955	10,617,134	9,117,313
IV. Service Cost	353,874	286,561	219,248

Impact of a 1% Change in the Discount Rate as of the July 1, 2018 Measurement Date

	<u>1% Decrease (6.00%)</u>	<u>Current Discount Rate (7.00%)</u>	<u>1% Increase (8.00%)</u>
I. Total OPEB Liability	14,355,715	12,792,821	11,229,927
II. Fiduciary Net Position	<u>2,182,433</u>	<u>2,182,433</u>	<u>2,182,433</u>
III. Net OPEB Liability (Asset) [I.-II.]	12,173,282	10,610,388	9,047,494
IV. Service Cost	367,344	297,469	227,594

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

14. ACTUARIAL METHODS AND ASSUMPTIONS

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

Actuarial Cost Method:	Individual Entry Age Normal
Discount Rate:	7.00% per annum (previously 6.00%)
Healthcare Trend Rates	

<u>Year</u>	<u>Medical</u>	<u>Dental</u>
FY 2013	6.0%	5.5%
FY 2014	5.0%	5.0%
FY 2015	5.0%	5.0%
FY 2016	5.0%	5.0%
FY 2017	5.0%	5.0%
FY 2018	5.0%	5.0%
FY 2019	5.0%	5.0%
FY 2020+	5.0%	5.0%

General Inflation Assumption:	2.75% per annum
Annual Compensation Increases:	3.00% per annum
Actuarial Value of Assets:	Market Value

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

15. RECOGNITION OF OPEB TRUST ASSETS

The State of Massachusetts has passed legislation allowing municipal entities to establish a Trust for Other Postemployment Benefits ("OPEB") under M.G.L. Chapter 32B, Section 20 for purposes of accumulating assets to pre-fund the liabilities under GASB 75. This legislation was amended effective November 9, 2016 to clarify who may adopt such a Trust and provide guidance on the ongoing operation of such a Trust. To the best of our knowledge, the Town of Boxford has established an irrevocable trust for the purposes of prefunding liabilities under GASB 74/75.

16. OPEB EXPENSE DEVELOPMENT

Components of the Town's OPEB Expenses for the Fiscal Year Ending June 30, 2018	
Description	Amount
I. Service Cost	286,561
II. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	698,366
III. Deferred (Inflows)/Outflows from Plan Design Changes*	0
IV. Deferred (Inflows)/Outflows from Plan Experience**	370,847
V. Deferred (Inflows)/Outflows from Changes of Assumptions**	0
VI. Projected earnings on OPEB plan investments	(92,857)
VII. Deferred (Inflows)/Outflows from Earnings on Plan Investments***	(19,003)
VIII. Total Employer Contributions	(797,053)
IX. OPEB Plan administrative expense	0
X. Other changes in fiduciary net position	0
XI. Net OPEB expense [I.+II.+III.+IV.+V.+VI.+VII.+VIII.+IX.+ X.]	446,861

* Recognized Immediately

** Amortized over 5 years

*** Amortized over 5 years

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

17. CHANGES IN NET OPEB LIABILITY

Changes in Net OPEB Liability			
	Increase (Decrease)		
	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
I. Balances at July 1, 2016 GASB 45	11,362,043	1,171,540	10,190,503
II. Change in Assumptions for GASB 75	(1,427,608)	0	(1,427,608)
III. Balances at July 1, 2016 GASB 75 [I. + II.]	9,934,435	1,171,540	8,762,895
Changes for the year:			
IV. Service Cost	286,561	0	286,561
V. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	698,366	0	698,366
VI. Changes in Benefit terms *	0	0	0
VII. Change in assumptions **	0	0	0
VIII. Differences between actual and expected experience **	1,854,235	0	1,854,235
IX. Net Investment Income	0	187,870	(187,870)
X. Employer Contributions to Trust	0	797,053	(797,053)
XI. Benefit Payments Withdrawn from Trust	0	(497,053)	497,053
XII. Benefit payments excluding Implicit Cost	N/A	0	N/A
XIII. Implicit Cost amount	N/A	0	N/A
XIV. Total Benefit payments including Implicit Cost [XII. + XIII.]	(497,053)	0	(497,053)
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.]	2,342,109	487,870	1,854,239
XVII. Balances at July 1, 2017 [III.+XVII.]	12,276,544	1,659,410	10,617,134

* Recognized Immediately

** Amortized over 5 years

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

18. MONEY WEIGHTED RATE OF RETURN

Determination of Beginning & Ending Balances of OPEB Plan Investments for Purposes of Calculating the Annual Money-Weighted Rate of Return		
	Assets as of July 1, 2016	Assets as of July 1, 2017
Assets		
Cash and cash equivalents	0	0
Receivables:		
Investment income	0	0
Receivables from brokers for unsettled trades	0	0
Investments		
Fixed income	269,453	381,663
Stocks	468,616	663,764
Cash and cash equivalents	0	0
Real estate	164,016	232,318
Alternative investments	269,455	381,665
Invested securities lending cash collateral	0	0
Liabilities		
Securities lending cash collateral	0	0
Payable to brokers for unsettled trades	0	0
Total OPEB plan investments	1,171,540	1,659,410

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)
 (continued)

18. MONEY WEIGHTED RATE OF RETURN (CONTINUED)

	Plan Investments / Net External	Periods Invested	Period Weight
I. Beginning value - July 1, 2016	1,171,540	12	1.0000
Monthly net external cash flows:			
July	0	11	0.9167
August	0	10	0.8333
September	300,000	9	0.7500
October	0	8	0.6667
November	0	7	0.5833
December	0	6	0.5000
January	0	5	0.4167
February	0	4	0.3333
March	0	3	0.2500
April	0	2	0.1667
May	0	1	0.0833
<u>June</u>	<u>0</u>	0	0.0000
II. Total net external cash flow	300,000		
III. Earnings and increase in fair value	187,870		
IV. Ending value - June 30, 2017 [I.+II.+III.]	1,659,410		
Money Weighted Rate of Return	13.49%		
Asset Value - June 30, 2017	1,659,410		

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

19. PLAN CASH FLOWS

Aggregate External (Noninvestment Cash Flows)	
<u>For the Year Ending on the July 1, 2017 Measurement Date</u>	
Additions	
<u>Contributions</u>	
Member contributions	0
Employer contributions	300,000
Other income	0
Deductions	
Service benefits	0
Disability benefits	0
Death benefits	0
Refunds	0
Administrative expenses	0
Beginning balances of noninvestment-related assets and liabilities	
Contribution receivable	0
Prepaid expenses	0
Accrued expenses & benefits payable	0
Ending balances of noninvestment-related assets and liabilities	
Contribution receivable	0
Prepaid expenses	0
Accrued expenses & benefits payable	0
Change in capital assets - depreciation	0
Aggregate external cash flows	300,000

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)
(continued)

19. PLAN CASH FLOWS (CONTINUED)

Reconciliation of Beginning & Ending Balances of OPEB Plan Investments, Aggregate External Cash Flows, and Net Investment Income	
<u>For the Year Ending on the July 1, 2017 Measurement Date</u>	
I. Total OPEB plan investments on July 1, 2016	1,171,540
II. Aggregate external cash flows	300,000
III. Net investment income	<u>187,870</u>
IV. Total OPEB plan investments on July 1, 2017 [I.+II.+III.]	<u><u>1,659,410</u></u>

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

20. PLAN PROJECTION DISCLOSURES

Projection of Contributions using a July 1, 2017 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, 2017	10,350,157	0	10,350,157	0	497,053	0	497,053
July 1, 2018	9,639,815	1,020,847	10,660,662	0	639,372	0	639,372
July 1, 2019	9,043,203	1,937,279	10,980,482	0	650,522	0	650,522
July 1, 2020	8,503,517	2,806,379	11,309,896	0	696,034	0	696,034
July 1, 2021	8,050,623	3,598,570	11,649,193	0	753,832	0	753,832
July 1, 2022	7,548,397	4,450,272	11,998,669	0	762,402	0	762,402
July 1, 2023	7,130,622	5,228,007	12,358,629	0	783,370	0	783,370
July 1, 2024	6,705,153	6,024,235	12,729,388	0	840,144	0	840,144
July 1, 2025	6,261,065	6,850,205	13,111,270	0	890,916	0	890,916
July 1, 2026	5,806,416	7,698,192	13,504,608	0	939,248	0	939,248
July 1, 2027	5,396,007	8,513,739	13,909,746	0	1,015,873	0	1,015,873
July 1, 2028	4,985,311	9,341,727	14,327,038	0	1,060,755	0	1,060,755
July 1, 2029	4,586,830	10,170,019	14,756,849	0	1,091,817	6,365	1,098,182
July 1, 2030	4,261,602	10,937,952	15,199,554	0	1,142,083	17,004	1,159,087
July 1, 2031	3,971,184	11,684,357	15,655,541	0	1,180,289	33,028	1,213,317
July 1, 2032	3,656,068	12,469,139	16,125,207	0	1,191,441	54,596	1,246,037
July 1, 2033	3,368,616	13,240,347	16,608,963	0	1,234,990	81,088	1,316,078
July 1, 2034	3,097,625	14,009,607	17,107,232	0	1,260,828	103,709	1,364,537
July 1, 2035	2,845,679	14,774,770	17,620,449	0	1,266,974	129,830	1,396,804
July 1, 2036	2,605,539	15,543,523	18,149,062	0	1,250,116	159,190	1,409,306
July 1, 2037	2,399,482	16,294,052	18,693,534	0	1,269,959	184,811	1,454,770
July 1, 2038	2,167,367	17,086,973	19,254,340	0	1,234,262	213,302	1,447,564
July 1, 2039	1,946,145	17,885,825	19,831,970	0	1,238,333	250,743	1,489,076
July 1, 2040	1,733,895	18,693,034	20,426,929	0	1,258,595	299,855	1,558,450
July 1, 2041	1,563,527	19,476,210	21,039,737	0	1,263,697	361,864	1,625,561
July 1, 2042	1,391,111	20,279,818	21,670,929	0	1,264,302	435,998	1,700,300
July 1, 2043	1,265,260	21,055,797	22,321,057	0	1,282,862	522,508	1,805,370
July 1, 2044	1,145,558	21,845,131	22,990,689	0	1,268,160	597,279	1,865,439
July 1, 2045	1,012,173	22,668,237	23,680,410	0	1,277,673	679,932	1,957,605
July 1, 2046	892,045	23,498,777	24,390,822	0	1,272,958	770,663	2,043,621
July 1, 2047	778,769	24,343,778	25,122,547	0	1,256,845	854,475	2,111,320
July 1, 2048	668,482	25,207,741	25,876,223	0	1,221,158	946,094	2,167,252
July 1, 2049	593,092	26,059,418	26,652,510	0	1,159,819	1,047,585	2,207,404
July 1, 2050	504,667	26,947,418	27,452,085	0	1,114,496	1,159,591	2,274,087
July 1, 2051	434,087	27,841,561	28,275,648	0	1,082,834	1,282,706	2,365,540
July 1, 2052	343,105	28,780,812	29,123,917	0	1,056,321	1,415,441	2,471,762
July 1, 2053	277,838	29,719,797	29,997,635	0	1,019,071	1,559,802	2,578,873
July 1, 2054	217,536	30,680,028	30,897,564	0	992,584	1,703,072	2,695,656
July 1, 2055	172,028	31,652,463	31,824,491	0	962,733	1,854,613	2,817,346
July 1, 2056	137,950	32,641,276	32,779,226	0	939,322	2,015,543	2,954,865

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

Projection of Contributions using a July 1, 2017 Valuation Date (Continued)
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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, 2057	108,084	33,654,519	33,762,603	0	910,493	2,182,151	3,092,644
July 1, 2058	84,982	34,690,499	34,775,481	0	867,303	2,358,051	3,225,354
July 1, 2059	58,669	35,760,076	35,818,745	0	823,849	2,543,892	3,367,741
July 1, 2060	43,432	36,849,875	36,893,307	0	791,012	2,742,009	3,533,021
July 1, 2061	34,388	37,965,718	38,000,106	0	755,316	2,952,783	3,708,099
July 1, 2062	17,783	39,122,326	39,140,109	0	717,071	3,176,284	3,893,355
July 1, 2063	3,216	40,311,096	40,314,312	0	684,995	3,413,425	4,098,420
July 1, 2064	0	41,523,741	41,523,741	0	652,491	3,659,275	4,311,766
July 1, 2065	0	42,769,453	42,769,453	0	619,186	3,917,349	4,536,535
July 1, 2066	0	44,052,537	44,052,537	0	585,837	4,188,496	4,774,333
July 1, 2067	0	45,374,113	45,374,113	0	552,671	4,470,052	5,022,723
July 1, 2068	0	46,735,336	46,735,336	0	519,984	4,765,232	5,285,216
July 1, 2069	0	48,137,396	48,137,396	0	487,930	5,073,609	5,561,539
July 1, 2070	0	49,581,518	49,581,518	0	456,601	5,396,145	5,852,746
July 1, 2071	0	51,068,964	51,068,964	0	425,851	5,734,560	6,160,411
July 1, 2072	0	52,601,033	52,601,033	0	395,993	6,088,358	6,484,351
July 1, 2073	0	54,179,064	54,179,064	0	366,702	6,459,098	6,825,800
July 1, 2074	0	55,804,436	55,804,436	0	338,211	6,848,028	7,186,239
July 1, 2075	0	57,478,569	57,478,569	0	310,390	7,253,939	7,564,329
July 1, 2076	0	59,202,926	59,202,926	0	283,532	7,679,511	7,963,043
July 1, 2077	0	60,979,014	60,979,014	0	257,527	8,124,767	8,382,294
July 1, 2078	0	62,808,384	62,808,384	0	232,849	8,590,736	8,823,585
July 1, 2079	0	64,692,636	64,692,636	0	210,235	9,077,938	9,288,173
July 1, 2080	0	66,633,415	66,633,415	0	190,423	9,588,275	9,778,698
July 1, 2081	0	68,632,417	68,632,417	0	171,408	10,124,055	10,295,463
July 1, 2082	0	70,691,390	70,691,390	0	153,556	10,686,565	10,840,121
July 1, 2083	0	72,812,132	72,812,132	0	136,589	11,277,395	11,413,984
July 1, 2084	0	74,996,496	74,996,496	0	120,923	11,898,609	12,019,532
July 1, 2085	0	77,246,391	77,246,391	0	106,137	12,551,221	12,657,358
July 1, 2086	0	79,563,783	79,563,783	0	92,527	13,237,245	13,329,772
July 1, 2087	0	81,950,696	81,950,696	0	79,823	13,958,275	14,038,098
July 1, 2088	0	84,409,217	84,409,217	0	68,147	14,715,891	14,784,038
July 1, 2089	0	86,941,494	86,941,494	0	57,580	15,511,625	15,569,205
July 1, 2090	0	89,549,739	89,549,739	0	47,986	16,347,890	16,395,876
July 1, 2091	0	92,236,231	92,236,231	0	39,443	17,227,704	17,267,147
July 1, 2092	0	95,003,318	95,003,318	0	32,023	18,152,740	18,184,763
July 1, 2093	0	97,853,418	97,853,418	0	25,752	19,125,620	19,151,372
July 1, 2094	0	100,789,021	100,789,021	0	20,446	20,149,168	20,169,614
July 1, 2095	0	103,812,692	103,812,692	0	16,071	21,225,635	21,241,706

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

20. PLAN PROJECTION DISCLOSURES (CONTINUED)

Projection of OPEB Plan's Fiduciary Net Position using a July 1, 2017 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, 2017	1,171,540	497,053	497,053	0	300,000	300,000	187,870	1,659,410
July 1, 2018	1,659,410	639,372	639,372	0	350,000	316,485	173,023	2,148,918
July 1, 2019	2,148,918	650,522	650,522	0	350,000	288,250	163,394	2,600,562
July 1, 2020	2,600,562	696,034	696,034	0	350,000	263,153	195,190	3,058,905
July 1, 2021	3,058,905	753,832	753,832	0	350,000	241,881	227,457	3,528,243
July 1, 2022	3,528,243	762,402	762,402	0	350,000	220,186	260,499	4,008,928
July 1, 2023	4,008,928	783,370	783,370	0	350,000	201,941	294,339	4,505,208
July 1, 2024	4,505,208	840,144	840,144	0	350,000	184,361	329,277	5,018,846
July 1, 2025	5,018,846	890,916	890,916	0	350,000	167,137	365,437	5,551,420
July 1, 2026	5,551,420	939,248	939,248	0	350,000	150,485	402,930	6,104,835
July 1, 2027	6,104,835	1,015,873	1,015,873	0	350,000	135,775	441,891	6,682,501
July 1, 2028	6,682,501	1,060,755	1,060,755	0	350,000	121,788	482,559	7,286,848
July 1, 2029	7,286,848	1,091,817	1,098,182	0	350,000	108,790	525,105	7,914,378
July 1, 2030	7,914,378	1,142,083	1,159,087	0	350,000	98,132	569,283	8,564,789
July 1, 2031	8,564,789	1,180,289	1,213,317	0	350,000	88,781	615,072	9,235,614
July 1, 2032	9,235,614	1,191,441	1,246,037	0	350,000	79,356	662,298	9,922,672
July 1, 2033	9,922,672	1,234,990	1,316,078	0	350,000	70,987	710,667	10,623,238
July 1, 2034	10,623,238	1,260,828	1,364,537	0	350,000	63,375	759,986	11,342,890
July 1, 2035	11,342,890	1,266,974	1,396,804	0	350,000	56,525	810,650	12,080,235
July 1, 2036	12,080,235	1,250,116	1,409,306	0	350,000	50,247	862,559	12,833,851
July 1, 2037	12,833,851	1,269,959	1,454,770	0	350,000	44,926	915,614	13,609,580
July 1, 2038	13,609,580	1,234,262	1,447,564	0	350,000	39,398	970,225	14,405,901
July 1, 2039	14,405,901	1,238,333	1,489,076	0	350,000	34,346	1,026,286	15,215,790
July 1, 2040	15,215,790	1,258,595	1,558,450	0	350,000	29,709	1,083,302	16,028,946
July 1, 2041	16,028,946	1,263,697	1,625,561	0	350,000	26,010	1,140,548	16,833,640
July 1, 2042	16,833,640	1,264,302	1,700,300	0	350,000	22,467	1,197,199	17,617,308
July 1, 2043	17,617,308	1,282,862	1,805,370	0	0	0	1,240,258	18,335,058
July 1, 2044	18,335,058	1,268,160	1,865,439	0	0	0	1,290,788	19,028,567
July 1, 2045	19,028,567	1,277,673	1,957,605	0	0	0	1,339,611	19,688,246
July 1, 2046	19,688,246	1,272,958	2,043,621	0	0	0	1,386,053	20,303,636
July 1, 2047	20,303,636	1,256,845	2,111,320	0	0	0	1,429,376	20,878,537
July 1, 2048	20,878,537	1,221,158	2,167,252	0	0	0	1,469,849	21,402,292
July 1, 2049	21,402,292	1,159,819	2,207,404	0	0	0	1,506,721	21,861,428
July 1, 2050	21,861,428	1,114,496	2,274,087	0	0	0	1,539,045	22,240,882
July 1, 2051	22,240,882	1,082,834	2,365,540	0	0	0	1,565,758	22,523,934
July 1, 2052	22,523,934	1,056,321	2,471,762	0	0	0	1,585,685	22,694,178
July 1, 2053	22,694,178	1,019,071	2,578,873	0	0	0	1,597,670	22,732,046
July 1, 2054	22,732,046	992,584	2,695,656	0	0	0	1,600,336	22,629,310
July 1, 2055	22,629,310	962,733	2,817,346	0	0	0	1,593,103	22,367,800
July 1, 2056	22,367,800	939,322	2,954,865	0	0	0	1,574,693	21,926,950

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

Projection of OPEB Plan's Fiduciary Net Position using a July 1, 2017 Valuation Date (Continued)									
For the Period	I. Beginning	II. Portion of					VI. Contributions		VIII. Ending
Ending on the	Fiduciary Net	Employer					to Trust for		Fiduciary Net
Measurement	Position for	Contributions for	III. Total	IV.	V. Total		Current Plan	VII. Investment	Position for
Date	Current Plan	Current Plan	Benefit	Administrative	Contributions to		Members	Earnings	Current Plan
	Members	Members	Payments	Expense	Trust				Members
July 1, 2057	21,926,950	910,493	3,092,644	0	0	0	0	1,543,657	21,021,399
July 1, 2058	21,021,399	867,303	3,225,354	0	0	0	0	1,479,906	20,157,712
July 1, 2059	20,157,712	823,849	3,367,741	0	0	0	0	1,419,103	19,336,188
July 1, 2060	19,336,188	791,012	3,533,021	0	0	0	0	1,361,268	18,546,778
July 1, 2061	18,546,778	755,316	3,708,099	0	0	0	0	1,305,693	17,792,644
July 1, 2062	17,792,644	717,071	3,893,355	0	0	0	0	1,252,602	17,076,142
July 1, 2063	17,076,142	684,995	4,098,420	0	0	0	0	1,202,160	16,391,243
July 1, 2064	16,391,243	652,491	4,311,766	0	0	0	0	1,153,943	15,738,752
July 1, 2065	15,738,752	619,186	4,536,535	0	0	0	0	1,108,008	15,119,566
July 1, 2066	15,119,566	585,837	4,774,333	0	0	0	0	1,064,417	14,533,729
July 1, 2067	14,533,729	552,671	5,022,723	0	0	0	0	1,023,175	13,981,058
July 1, 2068	13,981,058	519,984	5,285,216	0	0	0	0	984,266	13,461,074
July 1, 2069	13,461,074	487,930	5,561,539	0	0	0	0	947,660	12,973,144
July 1, 2070	12,973,144	456,601	5,852,746	0	0	0	0	913,309	12,516,543
July 1, 2071	12,516,543	425,851	6,160,411	0	0	0	0	881,165	12,090,692
July 1, 2072	12,090,692	395,993	6,484,351	0	0	0	0	851,185	11,694,699
July 1, 2073	11,694,699	366,702	6,825,800	0	0	0	0	823,307	11,327,997
July 1, 2074	11,327,997	338,211	7,186,239	0	0	0	0	797,491	10,989,786
July 1, 2075	10,989,786	310,390	7,564,329	0	0	0	0	773,681	10,679,396
July 1, 2076	10,679,396	283,532	7,963,043	0	0	0	0	751,829	10,395,864
July 1, 2077	10,395,864	257,527	8,382,294	0	0	0	0	731,869	10,138,337
July 1, 2078	10,138,337	232,849	8,823,585	0	0	0	0	713,739	9,905,488
July 1, 2079	9,905,488	210,235	9,288,173	0	0	0	0	697,346	9,695,253
July 1, 2080	9,695,253	190,423	9,778,698	0	0	0	0	682,546	9,504,830
July 1, 2081	9,504,830	171,408	10,295,463	0	0	0	0	669,140	9,333,422
July 1, 2082	9,333,422	153,556	10,840,121	0	0	0	0	657,073	9,179,866
July 1, 2083	9,179,866	136,589	11,413,984	0	0	0	0	646,263	9,043,277
July 1, 2084	9,043,277	120,923	12,019,532	0	0	0	0	636,647	8,922,354
July 1, 2085	8,922,354	106,137	12,657,358	0	0	0	0	628,134	8,816,217
July 1, 2086	8,816,217	92,527	13,329,772	0	0	0	0	620,662	8,723,690
July 1, 2087	8,723,690	79,823	14,038,098	0	0	0	0	614,148	8,643,867
July 1, 2088	8,643,867	68,147	14,784,038	0	0	0	0	608,528	8,575,720
July 1, 2089	8,575,720	57,580	15,569,205	0	0	0	0	603,731	8,518,140
July 1, 2090	8,518,140	47,986	16,395,876	0	0	0	0	599,677	8,470,154
July 1, 2091	8,470,154	39,443	17,267,147	0	0	0	0	596,299	8,430,711
July 1, 2092	8,430,711	32,023	18,184,763	0	0	0	0	593,522	8,398,688
July 1, 2093	8,398,688	25,752	19,151,372	0	0	0	0	591,268	8,372,936
July 1, 2094	8,372,936	20,446	20,169,614	0	0	0	0	589,455	8,352,490
July 1, 2095	8,352,490	16,071	21,241,706	0	0	0	0	588,015	8,336,419

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

20. PLAN PROJECTION DISCLOSURES (CONTINUED)

Actuarial Present Values of Projected Benefit Payments using a July 1, 2017 Valuation Date							
For the Period Ending on the Measurement Date	Beginning Fiduciary Net Position for Current Plan Members	Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments	Present Value of Unfunded Benefit Payments	Present Value of Benefit Payments using Single Equivalent Discount Rate
July 1, 2017	1,171,540	497,053	497,053	0	497,053	0	497,053
July 1, 2018	1,659,410	646,475	646,475	0	603,956	0	603,956
July 1, 2019	2,148,918	683,805	683,805	0	596,815	0	596,815
July 1, 2020	2,600,562	730,026	730,026	0	595,251	0	595,251
July 1, 2021	3,058,905	753,832	753,832	0	574,236	0	574,236
July 1, 2022	3,528,243	762,402	762,402	0	542,567	0	542,567
July 1, 2023	4,008,928	783,370	783,370	0	520,823	0	520,823
July 1, 2024	4,505,208	840,144	840,144	0	521,832	0	521,832
July 1, 2025	5,018,846	890,916	890,916	0	516,973	0	516,973
July 1, 2026	5,551,420	939,248	939,248	0	509,173	0	509,173
July 1, 2027	6,104,835	1,015,873	1,015,873	0	514,492	0	514,492
July 1, 2028	6,682,501	1,060,755	1,060,755	0	501,889	0	501,889
July 1, 2029	7,286,848	1,091,817	1,091,817	0	482,610	0	482,610
July 1, 2030	7,914,378	1,142,083	1,142,083	0	471,627	0	471,627
July 1, 2031	8,564,789	1,180,289	1,180,289	0	455,347	0	455,347
July 1, 2032	9,235,614	1,191,441	1,191,441	0	429,419	0	429,419
July 1, 2033	9,922,672	1,234,990	1,234,990	0	415,840	0	415,840
July 1, 2034	10,623,238	1,260,828	1,260,828	0	396,618	0	396,618
July 1, 2035	11,342,890	1,266,974	1,266,974	0	372,338	0	372,338
July 1, 2036	12,080,235	1,250,116	1,250,116	0	343,221	0	343,221
July 1, 2037	12,833,851	1,269,959	1,269,959	0	325,737	0	325,737
July 1, 2038	13,609,580	1,234,262	1,234,262	0	295,760	0	295,760
July 1, 2039	14,405,901	1,238,333	1,238,333	0	277,219	0	277,219
July 1, 2040	15,215,790	1,258,595	1,258,595	0	263,224	0	263,224
July 1, 2041	16,028,946	1,263,697	1,263,697	0	246,909	0	246,909
July 1, 2042	16,833,640	1,264,302	1,264,302	0	230,780	0	230,780
July 1, 2043	17,617,308	1,282,862	1,282,862	0	218,767	0	218,767
July 1, 2044	18,335,058	1,268,160	1,268,160	0	202,036	0	202,036
July 1, 2045	19,028,567	1,277,673	1,277,673	0	190,164	0	190,164
July 1, 2046	19,688,246	1,272,958	1,272,958	0	177,002	0	177,002
July 1, 2047	20,303,636	1,256,845	1,256,845	0	163,267	0	163,267
July 1, 2048	20,878,537	1,221,158	1,221,158	0	148,198	0	148,198
July 1, 2049	21,402,292	1,159,819	1,159,819	0	131,497	0	131,497
July 1, 2050	21,861,428	1,114,496	1,114,496	0	118,048	0	118,048
July 1, 2051	22,240,882	1,082,834	1,082,834	0	107,151	0	107,151
July 1, 2052	22,523,934	1,056,321	1,056,321	0	97,652	0	97,652
July 1, 2053	22,694,178	1,019,071	1,019,071	0	88,013	0	88,013
July 1, 2054	22,732,046	992,584	992,584	0	80,087	0	80,087
July 1, 2055	22,629,310	962,733	962,733	0	72,569	0	72,569
July 1, 2056	22,367,800	939,322	939,322	0	66,148	0	66,148

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

20. PLAN PROJECTION DISCLOSURES (CONTINUED)

Actuarial Present Values of Projected Benefit Payments using a July 1, 2017 Valuation Date (Continued)							
For the Period Ending on the Measurement Date	Beginning Fiduciary Net Position for Current Plan Members	Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments	Present Value of Unfunded Benefit Payments	Present Value of Benefit Payments using Single Equivalent Discount Rate
July 1, 2057	21,926,950	910,493	910,493	0	59,901	0	59,901
July 1, 2058	21,021,399	867,303	867,303	0	53,307	0	53,307
July 1, 2059	20,157,712	823,849	823,849	0	47,305	0	47,305
July 1, 2060	19,336,188	791,012	791,012	0	42,433	0	42,433
July 1, 2061	18,546,778	755,316	755,316	0	37,853	0	37,853
July 1, 2062	17,792,644	717,071	717,071	0	33,573	0	33,573
July 1, 2063	17,076,142	684,995	684,995	0	29,962	0	29,962
July 1, 2064	16,391,243	652,491	652,491	0	26,663	0	26,663
July 1, 2065	15,738,752	619,186	619,186	0	23,638	0	23,638
July 1, 2066	15,119,566	585,837	585,837	0	20,894	0	20,894
July 1, 2067	14,533,729	552,671	552,671	0	18,415	0	18,415
July 1, 2068	13,981,058	519,984	519,984	0	16,186	0	16,186
July 1, 2069	13,461,074	487,930	487,930	0	14,189	0	14,189
July 1, 2070	12,973,144	456,601	456,601	0	12,405	0	12,405
July 1, 2071	12,516,543	425,851	425,851	0	10,809	0	10,809
July 1, 2072	12,090,692	395,993	395,993	0	9,390	0	9,390
July 1, 2073	11,694,699	366,702	366,702	0	8,123	0	8,123
July 1, 2074	11,327,997	338,211	338,211	0	6,999	0	6,999
July 1, 2075	10,989,786	310,390	310,390	0	6,001	0	6,001
July 1, 2076	10,679,396	283,532	283,532	0	5,121	0	5,121
July 1, 2077	10,395,864	257,527	257,527	0	4,346	0	4,346
July 1, 2078	10,138,337	232,849	232,849	0	3,671	0	3,671
July 1, 2079	9,905,488	210,235	210,235	0	3,096	0	3,096
July 1, 2080	9,695,253	190,423	190,423	0	2,620	0	2,620
July 1, 2081	9,504,830	171,408	171,408	0	2,203	0	2,203
July 1, 2082	9,333,422	153,556	153,556	0	1,844	0	1,844
July 1, 2083	9,179,866	136,589	136,589	0	1,532	0	1,532
July 1, 2084	9,043,277	120,923	120,923	0	1,267	0	1,267
July 1, 2085	8,922,354	106,137	106,137	0	1,039	0	1,039
July 1, 2086	8,816,217	92,527	92,527	0	846	0	846
July 1, 2087	8,723,690	79,823	79,823	0	682	0	682
July 1, 2088	8,643,867	68,147	68,147	0	544	0	544
July 1, 2089	8,575,720	57,580	57,580	0	429	0	429
July 1, 2090	8,518,140	47,986	47,986	0	334	0	334
July 1, 2091	8,470,154	39,443	39,443	0	257	0	257
July 1, 2092	8,430,711	32,023	32,023	0	195	0	195
July 1, 2093	8,398,688	25,752	25,752	0	146	0	146
July 1, 2094	8,372,936	20,446	20,446	0	109	0	109
July 1, 2095	8,352,490	16,071	16,071	0	80	0	80

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FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)
(continued)

21. CHANGES TO NET OPEB EXPENSE

Deferred (Inflows)/Outflows in OPEB Expense arising from the recognition of the effects of differences between expected & actual experience								
Fiscal Year	Differences between actual & expected experience	Recognition Period (years)	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
2010								
2011								
2012								
2013								
2014								
2015								
2016								
2017								
2018	1,854,235	5.00	370,847	370,847	370,847	370,847	370,847	0
2019								
Net increase (decrease) in OPEB expense			370,847	370,847	370,847	370,847	370,847	0

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)
 (continued)

21. CHANGES TO NET OPEB EXPENSE (CONTINUED)

Deferred (Inflows)/Outflows in OPEB Expense arising from the recognition of the effects of Changes in Assumptions								
Fiscal Year	Differences from changes in		<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
	<u>Actuarial</u> <u>Assumptions</u>	<u>Recognition</u> <u>Period (years)</u>						
2010								
2011								
2012								
2013								
2014								
2015								
2016								
2017								
2018	0	5.00	0	0	0	0	0	0
2019								
Net increase (decrease) in OPEB expense			0	0	0	0	0	0

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)
(continued)

21. CHANGES TO 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 Year	Differences between actual & expected earnings	Recognition Period (years)	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
2010								
2011								
2012								
2013								
2014								
2015								
2016								
2017								
2018	(95,013)	5.00	(19,003)	(19,003)	(19,003)	(19,003)	(19,001)	0
2019	(44,090)	5.00		(8,818)	(8,818)	(8,818)	(8,818)	(8,818)
Net increase (decrease) in OPEB expense			(19,003)	(27,821)	(27,821)	(27,821)	(27,819)	(8,818)

EXHIBIT AREQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)

Notes to Required Supplementary Information:

Valuation Date:	Actuarially Determined Contribution was calculated as of July 1, 2017.
Actuarial Cost Method:	Individual Entry Age Normal
Asset-Valuation Method:	Market Value of Assets as of the Measurement Date, July 1, 2017.
<u>Actuarial Assumptions:</u>	
Investment Rate of Return:	7.04%, net of OPEB plan investment expense, including inflation.
Municipal Bond Rate	3.13% as of July 1, 2017 (source: S&P Municipal Bond 20-Year High Grade Index – SAPIHG)
Single Equivalent Discount Rate:	7.00%, net of OPEB plan investment expense, including inflation.
Inflation:	2.75% as of July 1, 2017 and for future periods
Salary Increases:	3.00% annually as of July 1, 2017 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

EXHIBIT BREQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)

(continued)

Notes to Required Supplementary Information (Continued):

Disabled Mortality:

RP-2000 Healthy Annuitant Table projected
generationally with Scale BB and a base
year 2012 for males and femalesPlan Membership

Plan Membership: At July 1, 2017, OPEB plan membership consisted of the following

Inactive employees or beneficiaries currently receiving benefits:	141
Active Employees:	<u>188</u>
Total:	329

Changes in Assumptions:

Effective July 1, 2017

- Discount rate is 7.00% previously 6.00%
- Updated retirement rates for teachers

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)
 (continued)

Notes to Required Supplementary Information (Continued):

Deferred Outflows of Resources and Deferred Inflows of Resources Arising between Expected & Actual Experience					
Fiscal Year	Experience Losses	Experience Gains	Amounts recognized in OPEB Expense through June 30, 2018	Balances at June 30, 2018	
				Deferred Outflows of Resources	Deferred Inflows of Resources
2009				0	0
2010				0	0
2011				0	0
2012				0	0
2013				0	0
2014				0	0
2015				0	0
2016				0	0
2017				0	0
2018	1,854,235	0	370,847	<u>1,483,388</u>	<u>0</u>
Total				1,483,388	0

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)
(continued)

Notes to Required Supplementary Information (Continued):

Deferred Outflows of Resources and Deferred Inflows of Resources Arising from Changes of Assumptions					
Fiscal Year	Increase in the Total OPEB Liability	Decrease in the Total OPEB Liability	Amounts recognized in OPEB Expense through June 30, 2018	Balances at June 30, 2018	
				Deferred Outflows of Resources	Deferred Inflows of Resources
2009				0	0
2010				0	0
2011				0	0
2012				0	0
2013				0	0
2014				0	0
2015				0	0
2016				0	0
2017				0	0
2018	0	0	0	0	0
Total				0	0

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)
 (continued)

Notes to Required Supplementary Information (Continued):

Deferred Outflows of Resources and Deferred Inflows of Resources between Projected & Actual Earnings on OPEB Plan Investments					
Fiscal Year	Increase in the Total OPEB Liability	Decrease in the Total OPEB Liability	Amounts recognized in OPEB Expense through June 30, 2018	Balances at June 30, 2018	
				Deferred Outflows of Resources	Deferred Inflows of Resources
2009				0	0
2010				0	0
2011				0	0
2012				0	0
2013				0	0
2014				0	0
2015				0	0
2016				0	0
2017				0	0
2018	0	(95,013)	(19,003)	0	(76,010)
Total				0	(76,010)

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)
 (continued)

Notes to Required Supplementary Information (Continued):

OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources related to OPEB as of June 30, 2018		
	Deferred Outflows of Resources	Deferred Inflows of Resources
I. Differences between actual & expected experience	1,483,388	0
II. Changes of assumptions	0	0
III. Net difference between projected & actual earnings on OPEB plan investments	<u>0</u>	<u>(76,010)</u>
IV. Total [I.+II.+III.]	1,483,388	(76,010)
 Year ended June 30:		
	2019	351,844
	2020	351,844
	2021	351,844
	2022	351,846
	2023	0
	Thereafter	0

EXHIBIT BREQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)
(continued)

Notes to Required Supplementary Information (Continued):Contributions:

The contribution requirements of plan members and the Town are established and may be amended through Town ordinances. The Town contributed \$300,000 beyond the pay-as-you-go cost for the period ending on the July 1, 2017 Measurement Date. For the year ending on the July 1, 2017 Measurement Date total Town premiums plus implicit costs for the retiree medical program were \$497,053 .

EXHIBIT C

PLAN DEMOGRAPHICS (As of the July 1, 2017 Valuation Date)

ACTIVE EMPLOYEES

Valuation Date	<u>July 1, 2017</u>	<u>July 1, 2015</u>
A. Average Age at Hire	38.42	37.83
B. Average Service	<u>10.22</u>	<u>10.39</u>
C. Average Current Age	48.64	48.22

RETIRED EMPLOYEES & DEPENDENTS

	<u>July 1, 2017</u>	<u>July 1, 2015</u>
I. Retirees		
A. Under Age 65	29	29
B. Age 65 & Over	<u>102</u>	<u>72</u>
C. Total Retirees	131	101
II. Dependents of Retirees		
A. Under Age 65	8	6
B. Age 65 & Over	<u>2</u>	<u>6</u>
C. Total Retirees	10	12
III. Retirees & Dependents		
A. Under Age 65	37	35
B. Age 65 & Over	<u>104</u>	<u>78</u>
C. Total Retirees	141	113

EXHIBIT D

PROJECTED CASH FLOWS (OPEN GROUP)

Total Medical & Life Insurance - Funding - 7.00% discount rate									
For the Fiscal Year	Period Ending on the Measurement Date of:	I. Total OPEB Liability ("TOL") as of Measurement Date	II. Fiduciary Net Position as of Date with expected 7.04% return	III. Net OPEB Liability (Asset) [I. - II.]	IV. Funded Ratio [II. / I.]	V. Service Cost	VI. Employer Share of Premiums / Claims	VII. Excess Employer Payments (beyond claims)	VIII. Total Employer Payments [VI. + VII.]
2018	July 1, 2017	12,276,544	1,659,410	10,617,134	13.52%	286,561	497,053	300,000	797,053
2019	July 1, 2018	12,792,821	2,182,433	10,610,388	17.06%	297,469	639,372	350,000	989,372
2020	July 1, 2019	13,354,141	2,698,187	10,655,954	20.20%	316,568	650,522	350,000	1,000,522
2021	July 1, 2020	13,759,754	3,250,250	10,509,504	23.62%	333,509	696,034	350,000	1,046,034
2022	July 1, 2021	14,275,654	3,841,178	10,434,476	26.91%	352,931	753,832	350,000	1,103,832
2023	July 1, 2022	14,835,697	4,473,707	10,361,990	30.16%	373,818	762,402	350,000	1,112,402
2024	July 1, 2023	15,429,955	5,150,766	10,279,189	33.38%	393,247	783,370	350,000	1,133,370
2025	July 1, 2024	16,033,659	5,875,490	10,158,169	36.64%	415,134	840,144	350,000	1,190,144
2026	July 1, 2025	16,656,147	6,651,235	10,004,912	39.93%	436,958	890,916	350,000	1,240,916
2027	July 1, 2026	17,280,560	7,481,592	9,798,968	43.29%	457,424	939,248	350,000	1,289,248
2028	July 1, 2027	17,905,524	8,370,407	9,535,117	46.75%	479,784	1,015,873	350,000	1,365,873
2029	July 1, 2028	18,551,985	9,321,794	9,230,191	50.25%	503,006	1,060,755	350,000	1,410,755
2030	July 1, 2029	19,223,007	10,340,159	8,882,848	53.79%	525,083	1,098,182	350,000	1,448,182
2031	July 1, 2030	19,796,414	11,430,217	8,366,197	57.74%	549,325	1,159,087	350,000	1,509,087
2032	July 1, 2031	20,481,402	12,597,015	7,884,387	61.50%	576,250	1,213,317	350,000	1,563,317
2033	July 1, 2032	21,194,804	13,845,955	7,348,849	65.33%	604,746	1,246,037	350,000	1,596,037
2034	July 1, 2033	21,903,288	15,182,821	6,720,467	69.32%	634,713	1,316,078	350,000	1,666,078
2035	July 1, 2034	22,692,247	16,613,802	6,078,445	73.21%	666,907	1,364,537	350,000	1,714,537
2036	July 1, 2035	23,560,898	18,145,524	5,415,374	77.02%	700,192	1,396,804	350,000	1,746,804
2037	July 1, 2036	24,463,533	19,785,079	4,678,454	80.88%	736,606	1,409,306	350,000	1,759,306
2038	July 1, 2037	25,395,409	21,540,059	3,855,350	84.82%	771,797	1,454,770	350,000	1,804,770
2039	July 1, 2038	26,418,285	23,418,590	2,999,695	88.65%	810,880	1,447,564	350,000	1,797,564
2040	July 1, 2039	27,502,835	25,429,369	2,073,466	92.46%	848,543	1,489,076	350,000	1,839,076
2041	July 1, 2040	28,713,854	27,581,707	1,132,147	96.06%	891,313	1,558,450	350,000	1,908,450
2042	July 1, 2041	29,983,039	29,885,570	97,469	99.67%	937,859	1,625,561	350,000	1,975,561
2043	July 1, 2042	31,296,807	32,351,625	(1,054,818)	103.37%	987,751	1,700,300	350,000	2,050,300
2044	July 1, 2043	32,672,871	33,537,863	(864,992)	102.65%	1,038,277	1,805,370	(1,054,818)	750,552
2045	July 1, 2044	34,160,530	35,004,007	(843,477)	102.47%	1,093,024	1,865,439	(864,992)	1,000,447
2046	July 1, 2045	35,665,041	36,595,627	(930,586)	102.61%	1,150,672	1,957,605	(843,477)	1,114,128
2047	July 1, 2046	37,287,377	38,209,174	(921,797)	102.47%	1,210,606	2,043,621	(930,586)	1,113,035
2048	July 1, 2047	39,034,766	39,945,407	(910,641)	102.33%	1,274,946	2,111,320	(921,797)	1,189,523
2049	July 1, 2048	40,909,191	41,815,413	(906,222)	102.22%	1,342,204	2,167,252	(910,641)	1,256,611

EXHIBIT D

PROJECTED CASH FLOWS (OPEN GROUP)

Town of Boxford

OPEB Projection of Funding Annual Service Cost and Impact on Unfunded Obligation

Total Medical & Life Insurance - Funding Annual Service Cost - 7.00% discount rate

Measurement Date	I. Total OPEB Liability	II. Service Cost	III. Employer Share of Premiums / Claims including "implicit cost"	IV. Funding Service Cost beyond claims	V. Total Funding Costs [III. + IV.]	VI. Present Value at 3.00% of Employer Share of Premiums / Claims including "implicit cost"	VII. Present Value at 3.00% of Funding Service Cost beyond claims	VIII. Present Value at 3.00% of Total Funding Costs [VI. + VII.]	IX. Fiduciary Net Position at Beginning of year	X. Net OPEB Liability (Asset) [I. - IX.]	XI. Present Value at 3.00% of Net OPEB Liability (Asset)
July 1, 2017	12,276,544	286,561	497,053	(210,492)	286,561	497,053	(210,492)	286,561	1,659,410	10,617,134	10,617,134
July 1, 2018	12,792,821	297,469	639,372	(341,903)	297,469	620,750	(331,945)	288,805	1,565,077	11,227,744	10,900,722
July 1, 2019	13,354,141	316,568	650,522	(333,954)	316,568	613,179	(314,784)	298,395	1,332,729	12,021,412	11,331,334
July 1, 2020	13,759,754	333,509	696,034	(362,525)	333,509	636,970	(331,762)	305,208	1,092,066	12,667,688	11,592,729
July 1, 2021	14,275,654	352,931	753,832	(400,901)	352,931	669,770	(356,195)	313,575	805,986	13,469,668	11,967,626
July 1, 2022	14,835,697	373,818	762,402	(388,584)	373,818	657,655	(335,196)	322,459	461,504	14,374,193	12,399,305
July 1, 2023	15,429,955	393,247	783,370	(390,123)	393,247	656,060	(326,722)	329,338	105,225	15,324,730	12,834,220
July 1, 2024	16,033,659	415,134	840,144	(425,010)	415,134	683,114	(345,572)	337,542	0	16,033,659	13,036,832
July 1, 2025	16,656,147	436,958	890,916	(453,958)	436,958	703,297	(358,359)	344,938	0	16,656,147	13,148,516
July 1, 2026	17,280,560	457,424	939,248	(481,824)	457,424	719,855	(369,278)	350,577	0	17,280,560	13,244,110
July 1, 2027	17,905,524	479,784	1,015,873	(536,089)	479,784	755,905	(398,901)	357,004	0	17,905,524	13,323,391
July 1, 2028	18,551,985	503,006	1,060,755	(557,749)	503,006	766,312	(402,930)	363,382	0	18,551,985	13,402,349
July 1, 2029	19,223,007	525,083	1,098,182	(573,099)	525,083	770,243	(401,960)	368,283	0	19,223,007	13,482,630
July 1, 2030	19,796,414	549,325	1,159,087	(609,762)	549,325	789,282	(415,218)	374,064	0	19,796,414	13,480,395
July 1, 2031	20,481,402	576,250	1,213,317	(637,067)	576,250	802,145	(421,176)	380,969	0	20,481,402	13,540,620
July 1, 2032	21,194,804	604,746	1,246,037	(641,291)	604,746	799,784	(411,620)	388,164	0	21,194,804	13,604,138
July 1, 2033	21,903,288	634,713	1,316,078	(681,365)	634,713	820,136	(424,604)	395,532	0	21,903,288	13,649,405
July 1, 2034	22,692,247	666,907	1,364,537	(697,630)	666,907	825,567	(422,078)	403,489	0	22,692,247	13,729,183
July 1, 2035	23,560,898	700,192	1,396,804	(696,612)	700,192	820,475	(409,186)	411,289	0	23,560,898	13,839,544
July 1, 2036	24,463,533	736,606	1,409,306	(672,700)	736,606	803,708	(383,631)	420,077	0	24,463,533	13,951,211
July 1, 2037	25,395,409	771,797	1,454,770	(682,973)	771,797	805,471	(378,146)	427,325	0	25,395,409	14,060,822
July 1, 2038	26,418,285	810,880	1,447,564	(636,684)	810,880	778,137	(342,249)	435,888	0	26,418,285	14,201,130
July 1, 2039	27,502,835	848,543	1,489,076	(640,533)	848,543	777,138	(334,289)	442,849	0	27,502,835	14,353,523
July 1, 2040	28,713,854	891,313	1,558,450	(667,137)	891,313	789,654	(338,033)	451,621	0	28,713,854	14,549,073
July 1, 2041	29,983,039	937,859	1,625,561	(687,702)	937,859	799,668	(338,304)	461,364	0	29,983,039	14,749,668
July 1, 2042	31,296,807	987,751	1,700,300	(712,549)	987,751	812,073	(340,317)	471,756	0	31,296,807	14,947,529
July 1, 2043	32,672,871	1,038,277	1,805,370	(767,093)	1,038,277	837,141	(355,697)	481,444	0	32,672,871	15,150,238
July 1, 2044	34,160,530	1,093,024	1,865,439	(772,415)	1,093,024	839,800	(347,733)	492,067	0	34,160,530	15,378,697
July 1, 2045	35,665,041	1,150,672	1,957,605	(806,933)	1,150,672	855,624	(352,692)	502,932	0	35,665,041	15,588,360
July 1, 2046	37,287,377	1,210,606	2,043,621	(833,015)	1,210,606	867,203	(353,487)	513,716	0	37,287,377	15,822,763
July 1, 2047	39,034,766	1,274,946	2,111,320	(836,374)	1,274,946	869,836	(344,575)	525,261	0	39,034,766	16,081,807

EXHIBIT D

PROJECTED CASH FLOWS (OPEN GROUP)

Total Medical & Life Insurance - Funding					
Measurement Date	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, 2017	141	12,276,544	12,276,544	497,053	497,053
July 1, 2018	152	12,792,821	12,420,215	639,372	620,750
July 1, 2019	160	13,354,141	12,587,559	650,522	613,179
July 1, 2020	167	13,759,754	12,592,124	696,034	636,970
July 1, 2021	172	14,275,654	12,683,734	753,832	669,770
July 1, 2022	176	14,835,697	12,797,403	762,402	657,655
July 1, 2023	180	15,429,955	12,922,344	783,370	656,060
July 1, 2024	183	16,033,659	13,036,832	840,144	683,114
July 1, 2025	185	16,656,147	13,148,516	890,916	703,297
July 1, 2026	190	17,280,560	13,244,110	939,248	719,855
July 1, 2027	193	17,905,524	13,323,391	1,015,873	755,905
July 1, 2028	195	18,551,985	13,402,349	1,060,755	766,312
July 1, 2029	196	19,223,007	13,482,630	1,098,182	770,243
July 1, 2030	198	19,796,414	13,480,395	1,159,087	789,282
July 1, 2031	197	20,481,402	13,540,620	1,213,317	802,145
July 1, 2032	197	21,194,804	13,604,138	1,246,037	799,784
July 1, 2033	197	21,903,288	13,649,405	1,316,078	820,136
July 1, 2034	196	22,692,247	13,729,183	1,364,537	825,567
July 1, 2035	194	23,560,898	13,839,544	1,396,804	820,475
July 1, 2036	192	24,463,533	13,951,211	1,409,306	803,708
July 1, 2037	190	25,395,409	14,060,822	1,454,770	805,471
July 1, 2038	187	26,418,285	14,201,130	1,447,564	778,137
July 1, 2039	184	27,502,835	14,353,523	1,489,076	777,138
July 1, 2040	182	28,713,854	14,549,073	1,558,450	789,654
July 1, 2041	181	29,983,039	14,749,668	1,625,561	799,668
July 1, 2042	179	31,296,807	14,947,529	1,700,300	812,073
July 1, 2043	178	32,672,871	15,150,238	1,805,370	837,141
July 1, 2044	176	34,160,530	15,378,697	1,865,439	839,800
July 1, 2045	174	35,665,041	15,588,360	1,957,605	855,624
July 1, 2046	173	37,287,377	15,822,763	2,043,621	867,203
July 1, 2047	171	39,034,766	16,081,807	2,111,320	869,836
July 1, 2048	170	40,909,191	16,363,151	2,167,252	866,873
July 1, 2049	169	42,933,204	16,672,553	2,207,404	857,217
July 1, 2050	168	45,094,680	17,001,878	2,274,087	857,390
July 1, 2051	167	47,395,220	17,348,779	2,365,540	865,894
July 1, 2052	166	49,831,245	17,709,197	2,471,762	878,423
July 1, 2053	165	52,379,442	18,072,606	2,578,873	889,795
July 1, 2054	165	55,088,607	18,453,743	2,695,656	902,999
July 1, 2055	164	57,973,102	18,854,369	2,817,346	916,275
July 1, 2056	164	61,030,185	19,270,497	2,954,865	933,009

EXHIBIT E**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.

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

GASB - Government Accounting Standards Board. "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 post employment benefits.

EXHIBIT E**GLOSSARY***(continued)*

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

Other Post Employment 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 earning 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.