



**TOWN OF COHASSET, MASSACHUSETTS**

**OTHER POSTEMPLOYMENT BENEFITS PROGRAM**

**ACTUARIAL VALUATION**

**as of**

**July 1, 2016**

**FINANCIAL REPORTING AND DISCLOSURES UNDER**

**GASB 45 and GASB 74**

**as of**

**June 30, 2017**

KMS Actuarial, LLC  
814 Elm Street, Suite 204  
Manchester, NH 03101

December, 2017



December 20, 2017

Mr. Donald Piatt  
Finance Director/Town Accountant  
Town of Cohasset  
Town Hall  
Cohasset, MA 02025

Dear Don:

We are pleased to present the enclosed report of the July 1, 2016 actuarial valuation of the retiree health care benefits for the Town of Cohasset. The valuation was prepared in accordance with, and for the purpose of financial reporting and disclosures as of June 30, 2017, under the following Government Accounting Standards Board (GASB) Statements:

- ◆ GASB Statement No. 45, Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions (GASB 45)
- ◆ GASB Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans (GASB 74)

The Principal Valuation Results, including assets, liabilities and the development of future contributions, are provided in Section 1. The Notes to the Financial Statements and the Required Supplementary Information are provided in Sections 2 and 3, respectively. Employer Reporting Amounts Under GASB 45 are provided in Section 4. The Summary of Plan Provisions and Actuarial Assumptions and Methods are shown in Sections 5 and 6, respectively. Section 7 summarizes the demographic profile of active members and retired members, covered spouses and survivors. Finally, a Glossary of Terms is provided in Section 8.

Our calculations are based on member census data and other information provided by the Town of Cohasset as well as health plan rates provided by the Town as of July 1, 2017. Although we did not audit the data used in the valuation and disclosure calculations, we believe that the information is complete and reliable.

Liabilities presented in this report are based on a discount rate of 3.89%, a long-term investment return rate of 7.5% and a municipal bond rate of 3.58%.

This report was completed in accordance with generally accepted actuarial standards and procedures, and conforms to the Code of Professional Conduct of the American Academy of Actuaries. The actuarial assumptions other than those explicitly applicable to the postemployment benefit plans are consistent with those used by the Norfolk County Retirement System and Massachusetts Teachers Retirement System's actuaries, with some exceptions, for the Retirement System pension valuations.

Future actuarial valuation results may differ significantly from the current results presented in this report. Examples of potential sources of volatility include plan experience differing from that anticipated by the economic or demographic assumptions, the effect of new entrants, changes in economic or demographic assumptions, the effect of law changes and the delayed effect of smoothing techniques.

Our valuation follows generally accepted actuarial methods and we perform such tests as we consider necessary to assure the accuracy of the results. The amounts presented in this report have been appropriately determined according to the actuarial assumptions and methods stated herein.

This report is intended for the sole use of the Town of Cohasset and is intended to provide information to comply with the stated purpose of the report. It may not be appropriate for other purposes.

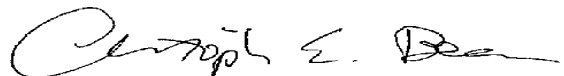
The expected claims, cost trend rates, and analysis of regulatory changes have been developed based on the expertise of the undersigned health and welfare actuary, Christopher E. Bean, ASA, MAAA. The undersigned credentialed actuaries are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. They are available to answer any questions with regard to this report.

Respectfully submitted,



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Linda L. Bournival, FSA  
Member, American Academy of Actuaries  
(603) 792-9494



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Christopher E. Bean, ASA, MAAA  
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## EXECUTIVE SUMMARY

This report presents the results of the actuarial valuation of the Town of Cohasset's retiree health care benefits as of July 1, 2016. The valuation was prepared in accordance with, and for the purpose of financial reporting and disclosures as of June 30, 2017, under the following Government Accounting Standards Board (GASB) Statements:

- ◆ GASB Statement No. 45, Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions (GASB 45)
- ◆ GASB Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans (GASB 74)

The results as of the measurement date are based on a roll forward of the liabilities developed in the most recent actuarial valuation.

### **New Accounting Standards**

In June 2015, the GASB approved two related Statements that significantly changed the way other postemployment benefits (OPEB) plans and governments account and report OPEB liabilities. Effective for plans with fiscal years beginning after June 15, 2016, GASB Statement No. 74 (GASB 74), Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans, replaced the requirements of Statement No. 43 and effective for employers with fiscal years beginning after June 15, 2017, GASB Statement No. 75 (GASB 75), Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions, replaced the requirements of Statement No. 45.

GASB 74 requires OPEB plans to present a statement of fiduciary net position (OPEB plan assets) and a statement of changes in fiduciary net position. Further, the statement requires that notes to financial statements include descriptive information such as the types of benefits provided, the classes of plan members covered and the authority under which benefit terms are established or may be amended. Finally, GASB 74 requires OPEB plans to present in required supplementary information the sources of the changes in the net OPEB liability and information about the actuarially determined contributions compared with the actual contributions made to the plan and related ratios.

GASB 74 and GASB 75 require projected benefit payments be discounted to their actuarial present value using the single rate that reflects:

- (1) a long-term expected rate of return on OPEB plan investments *to the extent that the OPEB plan's assets are sufficient to pay benefits and OPEB plan assets are expected to be invested using a strategy to achieve that return and*
- (2) a tax-exempt, high-quality municipal bond rate *to the extent that the conditions for use of the long-term expected rate of return are not met.*

GASB 75 establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources and OPEB expense by state and local governments.

## EXECUTIVE SUMMARY

### Town of Cohasset Other Postemployment Benefits Program

The effective date for GASB 74 is for plan years beginning after June 15, 2016, which is the fiscal year ending June 30, 2017 for the Town of Cohasset. The effective date for GASB 75 is for fiscal years beginning after June 15, 2017, which is the fiscal year ending June 30, 2018 for the Town of Cohasset.

### GASB 45 and GASB 74

A summary of principal results from the current and prior measurement dates follows:

Measurement Date	June 30, 2017	June 30, 2016	Increase/ (Decrease)
<b>Membership Data</b>			
Active Members	341	N/A	
Inactive Plan Members	182	N/A	
Total Plan Members	523	N/A	
<b>Valuation Results (GASB 45)</b>			
Annual Required Contribution	\$2,676,614	\$2,545,378	5.2%
Net OPEB Obligation	\$11,738,925	\$10,994,017	6.8%
<b>Valuation Results (GASB 74)</b>			
Total OPEB Liability	\$43,319,487	\$48,703,025	(11.1%)
Fiduciary Net Position	\$2,158,712	\$1,492,475	44.6%
Net OPEB Liability	\$41,160,775	\$47,210,550	(12.8%)
Discount rate	3.89%	2.85%	

### Experience Gain and Loss

In developing the Total OPEB Liability, various assumptions are made regarding future premium rates, mortality, retirement, disability and turnover rates. A comparison of the results of the current and prior measurements is made to determine how closely actual experience relates to expected. For the current measurement period, there is no experience gain or loss as the Total OPEB liability was developed from a roll forward of results of the most recent valuation.

### Changes of Assumptions

The actuarial cost method was changed from Projected Unit Credit to Entry Age Normal to comply with the requirements set forth in GASB 74 and GASB 75. The discount rate changed from 2.85% as of June 30, 2016 to 3.89% as of June 30, 2017. All other assumptions were the same as those used in the previous measurement.

### Changes of Benefit Terms

As this is the first year of recognizing the Total OPEB Liability under GASB 74, there are no changes in Benefit Terms.

### Total OPEB Liability

The Total OPEB Liability as of the current measurement date, June 30, 2017, is \$43,319,487. The Total OPEB Liability as of the prior measurement date, June 30, 2016, was \$48,703,025. The development of the Total OPEB Liability for the current and prior measurement dates is shown in Section 1, Exhibit 1.2.

### Town of Cohasset Postemployment Benefits Other Than Pensions

Financial Reporting and Disclosures Under GASB 45 and GASB 74 as of June 30, 2017

## EXECUTIVE SUMMARY

### Fiduciary Net Position

The Fiduciary Net Position is equal to the market value of assets and as of the current measurement date, June 30, 2017, is \$2,158,712. The Fiduciary Net Position as of the prior measurement date, June 30, 2016, was \$1,492,475. The Fiduciary Net Position is shown in Section 1, Exhibit 1.1.

### Discount Rate

As of the June 30, 2017 measurement date, the OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to the first 14 periods of projected future benefit payments and, the 3.58% municipal bond rate was applied to all periods thereafter to determine the total OPEB liability. The 3.58% municipal bond rate was based on the Bond Buyer 20-Bond General Obligation Municipal Bond Index as of June 29, 2017.

### ACTUARIAL VALUATION

A summary of principal valuation results from the current valuation and the prior valuation follows. Changes in actuarial assumptions and methods and Plan provisions are discussed below, as well as changes in census data and asset information.

Valuation Date	<u>July 1, 2016</u>	<u>July 1, 2014</u>	<u>Increase/ (Decrease)</u>
<b>Membership Data</b>			
Active Members	341	319	6.9%
Average Age	47.3	47.8	(1.1%)
Average Service	8.9	9.1	(2.0%)
Covered Payroll	\$21,581,455	\$20,324,842	6.2%
Retired Members and Survivors	182	192	(5.2%)
Average Age	71.1	72.2	(1.6%)
Covered Spouses	86	79	8.9%
<b>Valuation Results (GASB 45)</b>			
Actuarial Accrued Liability	\$30,583,576	\$32,942,616	(7.2%)
Market Value of Assets	\$1,492,475	\$583,141	155.9%
Unfunded Actuarial Accrued Liability	\$29,091,101	\$32,359,475	(10.1%)
Funded Ratio	4.9%	1.8%	172.2%
Normal Cost	\$1,183,268	\$1,065,991	11.0%
Expected Benefit Payments	\$1,539,864	\$1,212,490	27.0%
Annual Required Contribution	\$2,676,614	\$2,454,296	9.1%

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## EXECUTIVE SUMMARY

### Actuarial Gain / Loss Analysis

In performing the actuarial valuation, various assumptions are made regarding future premium rates, mortality, retirement, disability and turnover rates as well as investment returns. A comparison of the results of the current valuation and the prior valuation is made to determine how closely actual experience relates to expected. Below are the various sources of gains and losses for the **current two-year period** on account of experience and assumption and method changes:

- ◆ loss on account of premium rates higher than expected from prior valuation
- ◆ loss on account of changes in pre-retirement decrements for Teachers
- ◆ loss on account of changes in mortality rates and mortality improvement
- ◆ gain on account of the change in discount rate from 4.75% to 6%
- ◆ gain on account of the change in funding method from Projected Unit Credit to Entry Age Normal

### Actuarial Assumptions and Methods

The Actuarial cost method has changed from the Projected Unit Credit to Entry Age Normal. Several other Actuarial Assumptions and Methods utilized in this valuation have changed from those used in the last valuation and are detailed in Section 6, Actuarial Assumptions and Methods.

### Plan Provisions

All of the Plan provisions used in this valuation are the same as those used in the last valuation and are detailed in Section 5, Summary of Plan Provisions.

### Census Data

As of July 1, 2016, there are 341 active members who may be eligible for benefits in the future and 268 retired members, covered spouses and survivors. Summaries of the active members and retired members, covered spouses and survivors are included in Section 7, Plan Member Information.

### Assets

This valuation is based upon asset information provided by the Town. The market value of assets increased from \$583,141 as of July 1, 2014 to \$1,492,475 as of July 1, 2016.

### Employer Future Period Contributions

Although the Town does not have a formal funding policy as of the end of the fiscal year, it has consistently contributed at least \$350,000 in the past several years.



## SECTION 1 - PRINCIPAL VALUATION RESULTS

### Exhibit 1.1 - OPEB Trust Assets

Section 20 of M.G.L. Chapter 32B allows municipal entities to establish an OPEB trust for purposes of accumulating assets to prefund the OPEB liabilities. We understand that the Town of Cohasset has established an irrevocable trust for this purpose. Plan assets segregated and restricted in an OPEB trust must be dedicated to providing plan benefits to retirees and beneficiaries in accordance with the terms of the plan and must be legally protected from creditors of the employer. Further, employer contributions to the trust must be irrevocable. Asset information for the current and prior fiscal years was provided by the Town and is presented below:

Fiscal Year Ended June 30	2017	2016
<b>Trust Fund Composition at Fiscal Year-End</b>		
Equities	\$1,243,110	\$821,671
Fixed Income	\$463,522	\$344,559
Alternatives	\$214,928	\$164,634
Real Estate	\$90,320	\$69,066
Timberland	\$36,724	\$21,915
Hedge Funds	\$0	\$57,112
Portfolio Completion Strategies	\$94,290	\$7,969
Overlay	\$9,925	\$3,320
Cash and Equivalents	\$5,893	\$2,229
Total Market Value of Assets	\$2,158,712	\$1,492,475
<b>Asset Activity</b>		
Market value, beginning of year	\$1,492,475	900,721
Employer Premiums	1,539,864	1,262,468
OPEB Trust Contributions	475,000	550,000
Benefit Payments	(1,539,864)	(1,262,468)
Expenses	-	-
Investment Return	191,237	41,754
Market value, end of year	\$2,158,712	\$1,492,475
<b>Money-Weighted Rate of Return</b>	10.20%	
<b>(Gain) / Loss on OPEB Plan Investments</b>		
Projected earnings	\$129,748	\$88,179
Actual earnings	191,237	41,754
(Gain) / Loss on OPEB plan investments	(\$61,489)	\$46,425

Town of Cohasset Postemployment Benefits Other Than Pensions  
Financial Reporting and Disclosures Under GASB 45 and GASB 74 as of June 30, 2017

## SECTION 1 - PRINCIPAL VALUATION RESULTS

### Exhibit 1.2 - Total OPEB Liability

The Total OPEB Liability, developed using the Entry Age Normal funding method, is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service. The total OPEB liability as of the June 30, 2017 measurement date was developed from an actuarial valuation as of July 1, 2016 and rolled forward to the OPEB plan's fiscal year-end.

Valuation Date	July 1, 2016	July 1, 2016
Discount Rate	3.89%	2.85%
Actives	\$ 19,337,983	\$ 23,728,502
Retirees, Covered Spouses and Survivors	21,872,440	24,974,523
Total OPEB Liability	\$ 41,210,423	\$ 48,703,025

The Service Cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year. Only active employees who have not reached the age at which the probability of retirement is 100% incur a service cost.

Service Cost	\$ 1,998,068	\$ 2,645,732
Expected Benefit Payments		
Current retirees	\$ 1,430,325	\$ 1,430,325
Future retirees	109,539	109,539
Total	\$ 1,539,864	\$ 1,539,864

The Total OPEB Liability as of the fiscal year-end, or measurement date, is developed through the use of update procedures to roll forward the results of the valuation as of the beginning of the measurement period.

<u>Measurement Date:</u>	<u>June 30, 2017</u>	<u>June 30, 2016</u>
Discount Rate	3.89%	2.85%
Actives	\$ 22,054,354	\$ 23,728,502
Retirees, Covered Spouses and Survivors	21,265,133	24,974,523
Total OPEB Liability	\$ 43,319,487	\$ 48,703,025

The Total OPEB Liability changed due to:

<u>Change in Total OPEB Liability:</u>	
Assumption changes	\$ (7,930,903)
Benefit changes	\$ -

## SECTION 1 - PRINCIPAL VALUATION RESULTS

### Exhibit 1.3 - Development of Annual Required Contributions

Although the Town does not have a formal funding policy as of the end of the fiscal year, it has consistently contributed at least \$350,000 in the past several years.

Under GASB 45, the Annual Required Contribution (ARC) of the employer equals the Normal Cost plus a provision for amortizing the Unfunded Actuarial Accrued Liability. We have assumed increasing dollar amortization over the maximum acceptable amortization period of 30 years. For the period beginning July 1, 2016, the ARC, calculated under the parameters of this actuarial valuation, would be:

	Pay-as-you-go	Full Funding
<b>Discount Rate</b>	<b>6%</b>	<b>7.5%</b>
1. Normal Cost	\$1,183,268	\$843,502
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$30,583,576	\$25,464,719
b. Actuarial Value of Plan Assets	\$1,492,475	\$1,492,475
c. Unfunded Actuarial Accrued Liability	\$29,091,101	\$23,972,244
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$29,091,101	\$23,972,244
b. Amortization Period in years	30	30
c. Payroll Growth Rate	3.5%	3.5%
d. Amortization Factor	21.68	18.26
e. Amortization Amount (3.a. / 3.d.)	\$1,341,840	\$1,312,828
4. Interest on 1. and 3.e.	\$151,506	\$161,725
5. Annual Required Contribution (1. + 3.e. + 4.)	\$2,676,614	\$2,318,055
6. Actual Employer Contribution to OPEB Trust	\$475,000	\$475,000
7. Expected Benefit Payments	\$1,539,864	\$1,539,864
8. Total Contribution (6.+ 7.)	\$2,014,864	\$2,014,864

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## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.1 - Plan Description

*Plan administration:*

The Town of Cohasset administers the retiree health care benefits program - a single-employer defined benefit plan that is used to provide postemployment benefits other than pensions (OPEB) for all permanent full-time employees.

*Plan membership:*

At June 30, 2017, OPEB plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefit payments	182
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	341
	<u>523</u>

*Benefits provided:*

The Town provides health care benefits for retirees and their dependents. Benefits are provided through the Town, and the full cost of benefits is shared between the Town and retirees.

*Contributions:*

Although the Town does not have a formal funding policy as of the end of the fiscal year, it has consistently contributed at least \$350,000 in the past several years.

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.2 - Net OPEB Liability

The components of the net OPEB liability at June 30, 2017, were as follows:

Total OPEB liability	\$ 43,319,487
Fiduciary net position	<u>(2,158,712)</u>
Net OPEB liability	<u>\$ 41,160,775</u>

Fiduciary net position as a percentage of the total OPEB liability 4.98%

#### *Actuarial assumptions:*

The total OPEB liability was determined by an actuarial valuation as of July 1, 2016, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation:	3.0 percent
Investment rate of return:	7.5%, net of investment expenses, including inflation
Discount rate:	3.89%, net of investment expenses, including inflation
Healthcare cost trend rate:	8 percent for 2016, decreasing 1 percent per year to an ultimate rate of 5 percent for 2019 and later years.
Pre-Retirement Mortality - General and Public Safety employees:	RP-2000 Employees Mortality Table, base year 2009, projected with generational mortality improvement using scale BB.
Post-Retirement Mortality - General and Public Safety employees:	RP-2000 Healthy Annuitant Mortality Table, base year 2009, projected with generational mortality improvement using scale BB.
Pre-Retirement Mortality - Teachers:	RP-2014 Employees Mortality Table, base year 2014, projected with generational mortality improvement using scale BB.
Post-Retirement Mortality - Teachers:	RP-2014 Healthy Annuitant Mortality Table, base year 2014, projected with generational mortality improvement using scale BB.

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.2 - Net OPEB Liability

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of June 30, 2017 are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation<sup>1</sup></u>	<u>Long-Term Expected Real Rates of Return<sup>1</sup></u>
Equities	53%	5.31%
Fixed Income	24%	2.38%
Alternatives	10%	4.80%
Real Estate	5%	3.50%
Timberland	2%	3.00%
Hedge Funds	0%	N/A
Portfolio Completion Strategies	7%	3.48%
Overlay	0%	N/A
Cash and Equivalents	0%	N/A
Total	100%	

<sup>1</sup> provided by PRIM and Bartholomew & Company

#### *Discount rate:*

The discount rate used to measure the total OPEB liability was 3.89%. The projection of cash flows used to determine the discount rate assumed that contributions from the Town will be made in accordance with the plan's funding policy. Based on those assumptions, the OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to the first 14 periods of projected future benefit payments and, the 3.58% municipal bond rate was applied to all periods thereafter to determine the total OPEB liability. The 3.58% municipal bond rate was based on the Bond Buyer 20-Bond General Obligation Municipal Bond Index as of June 29, 2017.

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.2 - Net OPEB Liability

*Sensitivity of the net OPEB liability to changes in the discount rate:*

The following presents the net OPEB liability calculated using the current discount rate of 3.89 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (2.89 percent) or 1-percentage point higher (4.89 percent) than the current rate:

	<b>1% Decrease (2.89%)</b>	<b>Discount Rate (3.89%)</b>	<b>1% Increase (4.89%)</b>
Net OPEB Liability	\$ 48,747,719	\$ 41,160,775	\$ 35,175,385

*Sensitivity of the net OPEB liability to changes in the healthcare cost trend rates:*

The following presents the net OPEB liability calculated using the current healthcare cost trend rates as well as what the net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage point lower (7% year 1 decreasing to 4%) or 1-percentage point higher (9% year 1 decreasing to 6%) than the current healthcare cost trend rates:

	<b>1% Decrease 7% Year 1 Decreasing to 4%</b>	<b>Healthcare Cost Trend Rates 8% Year 1 Decreasing to 5%</b>	<b>1% Increase 9% Year 1 Decreasing to 6%</b>
Net OPEB Liability	\$ 33,932,657	\$ 41,160,775	\$ 51,149,265

## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30	<u>2017</u>	<u>2016</u>
<b>Total OPEB Liability</b>		
Service cost	\$ 2,645,732	
Interest	1,441,497	
Changes of benefit terms	-	
Differences between expected and actual experience	-	
Changes of assumptions	(7,930,903)	
Benefit payments	(1,539,864)	
<b>Net change in total OPEB liability</b>	<u>\$ (5,383,538)</u>	
<b>Total OPEB liability—beginning</b>	<u>\$ 48,703,025</u>	
<b>Total OPEB liability—ending (a)</b>	<u>\$ 43,319,487</u>	<u>\$ 48,703,025</u>
<b>Plan fiduciary net position</b>		
Contributions—employer	\$ 2,014,864	
Net investment income	191,237	
Benefit payments	(1,539,864)	
Administrative expenses	-	
Other	-	
<b>Net change in plan fiduciary net position</b>	<u>\$ 666,237</u>	
<b>Plan fiduciary net position—beginning</b>	<u>\$ 1,492,475</u>	
<b>Plan fiduciary net position—ending (b)</b>	<u>\$ 2,158,712</u>	<u>\$ 1,492,475</u>
<b>Net OPEB liability—ending (a) – (b)</b>	<u>\$ 41,160,775</u>	<u>\$ 47,210,550</u>
Plan fiduciary net position as a percentage of the total OPEB liability	4.98%	3.06%
Covered payroll	\$ 21,581,455	
Net OPEB liability as a percentage of covered payroll	190.72%	



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## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.2 - Investment Returns

Fiscal Year Ended June 30	<u>2017</u>
Annual money-weighted rate of return, net of investment expenses	10.20%

The money-weighted rate of return considers the changing amounts actually invested during a period and weights the amount of OPEB plan investments by the proportion of time they are available to earn a return during that period. The rate of return is then calculated by solving, through an iterative process, for the rate that equates the sum of the weighted external cash flows into and out of the OPEB plan investments to the ending fair value of OPEB plan investments.

## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.2 - Investment Returns

#### Calculation of Money-Weighted Rate of Return

	Plan Investments/ Net External Cash Flows (a)	Periods Invested (b)	Period Weight (c)=(b)÷12	(d)=(a) x (1+r <sub>mw</sub> ) <sup>(c)</sup>
Beginning value - July 1, 2016	\$ 1,492,475	12	1.00	\$ 1,644,705
Monthly net external cash flows:				
July	325,000	11	0.92	355,262
August	-	10	0.83	-
September	-	9	0.75	-
October	-	8	0.67	-
November	150,000	7	0.58	158,744
December	-	6	0.50	-
January	-	5	0.42	-
February	-	4	0.33	-
March	-	3	0.25	-
April	-	2	0.17	-
May	-	1	0.08	-
June	-	0	0.00	-
Ending value - June 30, 2017				\$ 2,158,712
			Money-weighted rate of return:	10.20%

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## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	<u>2017</u>
Actuarially determined contribution	\$ 2,676,614
Contributions in relation to the actuarially determined contribution	<u>2,014,864</u>
Contribution deficiency (excess)	<u>\$ 661,750</u>
Covered payroll	\$ 21,581,455
Contributions as a percentage of covered payroll	9.34%

#### Notes to Schedule

##### *Valuation date:*

Actuarially determined contributions are determined as of July 1, one year prior to the end of the fiscal year in which contributions are reported.

##### *Methods and assumptions used in calculations of actuarially determined contributions:*

Actuarial cost method	Entry Age Normal
Amortization method	Increasing at 3.5% over 30 years on an open amortization period
Amortization period	30 years
Asset valuation method	Market value
Inflation	3 percent
Healthcare cost trend rates	8 percent initial, decreasing 1 percent per year to an ultimate rate of 5 percent
Investment rate of return	6 percent, net of OPEB plan investment expense, including inflation

## SECTION 4 - EMPLOYER REPORTING AMOUNTS

### Exhibit 4.1 - Accounting Disclosures under GASB 45

GASB 45 requires disclosure of the annual OPEB cost, the Net OPEB Obligation and the Schedule of Funding Progress. In addition, information about the Actuarial Methods and Assumptions used in the valuation and a summary of the Substantive Plan Provisions are disclosed, which are provided in Section 6 and Section 5, respectively.

<b>Annual OPEB Cost and Net OPEB Obligation</b>			
Fiscal Year Ending	<u>6/30/2017</u>	<u>6/30/2016</u>	<u>6/30/2015</u>
Discount rate	6.00%	4.75%	4.75%
Annual Required Contribution	\$2,676,614	\$2,545,378	\$2,454,296
Interest on Net OPEB Obligation	522,216	483,744	368,179
Adjustment to annual required contribution	<u>(439,058)</u>	<u>(406,712)</u>	<u>(330,383)</u>
Annual OPEB cost	\$2,759,772	\$2,622,410	\$2,492,092
Employer contributions made	(\$1,539,864)	(\$1,262,468)	(\$1,212,490)
OPEB Trust contributions	<u>(475,000)</u>	<u>(550,000)</u>	<u>(300,000)</u>
Total Employer contributions	(2,014,864)	(1,812,468)	(1,512,490)
Change in Net OPEB Obligation	\$744,908	\$809,942	\$979,602
Net OPEB Obligation - beginning of year	\$10,994,017	\$10,184,075	\$9,204,473
Net OPEB Obligation - end of year	\$11,738,925	\$10,994,017	\$10,184,075

<b>Plan History</b>				
Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation	
6/30/2017	2,759,772	73.0%	11,738,925	
6/30/2016	2,622,410	69.1%	10,994,017	
6/30/2015	2,492,092	60.7%	10,184,075	

<b>Schedule of Funding Progress</b>						
Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) / c)
7/1/2016	1,492,475	30,583,576	29,091,101	4.88%	21,581,455	134.8%
7/1/2014	583,141	32,942,616	32,359,475	1.77%	20,324,842	159.2%
7/1/2012	147,649	36,227,021	36,079,372	0.41%	16,716,994	215.8%

Town of Cohasset Postemployment Benefits Other Than Pensions  
 Financial Reporting and Disclosures Under GASB 45 and GASB 74 as of June 30, 2017

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## SECTION 5 - SUMMARY OF PLAN PROVISIONS

**Eligibility:** Group 1 employees hired before April 2, 2012: retire after attaining age 55 with 10 or more years of service or any age with 20 or more years of service

Group 1 employees hired after April 1, 2012: retire after attaining age 60 with 10 or more years of service

Group 4 employees hired before April 2, 2012: retire after attaining age 55 or any age with 20 or more years of service

Group 4 employees hired after April 1, 2012: retire after attaining age 55

**Ordinary Disability Eligibility:** Any member who is unable to perform his or her duties due to a non-occupational disability and has ten or more years of creditable service.

**Accidental Disability Eligibility:** Any member who is unable to perform his or her duties due to a job-related disability.

**Medical Premium Rates:** The total monthly cost by plan are shown below:

<u>Non-Medicare Plans - July 1, 2017</u>	<u>Individual</u>	<u>Family</u>
HMO	\$838.41	\$2,246.99
PPO	\$990.38	\$2,657.91
 <u>Medicare Plans - January 1, 2017</u>		
Managed Blue	\$297.77	
Medex 2	\$356.42	

## SECTION 5 - SUMMARY OF PLAN PROVISIONS

**Participant Contributions:** Retired employees contribute the following percentage of the health plan premium based on the plan elected:

<u>Retired Town Employees</u>	<u>Individual</u>	<u>Family</u>
HMO	11%	31%
All Others	50%	50%
<u>Retired Teachers*</u>	<u>Current</u>	<u>Future</u>
HMO - Individual coverage	9.7%	10%
HMO - Family coverage	11.6%	15%
PPO	16.3%	23%
Managed Blue	20.6%	26%
Medex 2	19.2%	25%

\* Retired teacher contribution rates shown are for 2018. For future retired teachers, contribution rates are scheduled to increase through 2025 to reflect mitigation provided by the Town. For 2025 and later, future retired teachers will contribute same percentage as Town retirees.

**Continuation of Coverage to Spouse After Death of Retiree:** Surviving spouse may continue coverage for lifetime by paying the required medical premium rates.

**Medicare Penalty Reimbursement:** The Town reimburses retirees for the Medicare late-enrollment penalty based on information provided in the retiree data.

**Life Insurance Benefit:** Retired Town employees and retired Teachers are eligible for a \$5,000 and \$2,000 life insurance benefit, respectively.

**Life Insurance Premium:** The total monthly cost for life insurance coverage provided to retirees is \$9.65 (Town) and \$3.86 (Teachers).

**Life Insurance Contributions:** Retired employees contribute \$7.72 (Town) and \$1.93 (Teachers) per month towards the life insurance premium.

**PPACA Excise Tax:** The Patient Protection and Affordable Care Act (PPACA) applies a 40% excise tax to the cost of plan benefits in excess of statutory thresholds beginning in 2020. The 2020 thresholds are assumed to be \$10,200 for individual and \$27,500 for family coverage and increase by CPI in future years. The annual limits are increased by \$1,650 for individual and \$3,450 for family coverage for retirees not eligible for Medicare benefits.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

**Valuation Date:** July 1, 2016

**GASB 74 Disclosure Date:** June 30, 2017

**Discount Rate (GASB 74):** 3.89%, compounded annually, for the measurement as of June 30, 2017 and 2.85%, compounded annually, for the measurement as of June 30, 2016.

**Discount Rate (GASB 45):** 6%, compounded annually, for development of the Annual Required Contribution (ARC) as of June 30, 2017.

Investment returns:  
 Plan assets (long-term rate of return): 7.5%  
 Employer assets (short-term rate of return): 4%

The development of the discount rate used in the valuation is based on the percentage of the Annual Required Contribution (ARC) funded and is shown below:

1. ARC under fully funded plan	2,318,055
2. Pay-as-you-go (PAYG)	1,539,864
3. GAP between ARC and PAYG (1. - 2.)	778,191
4. OPEB Trust contribution	475,000
5. Percent of GAP funded	61%
6. Multiplied by long-term rate	4.58%
7. Percent of GAP not funded	39%
8. Multiplied by short-term rate	1.56%
9. Discount rate (6. + 8.)	6.14%

Based on the methodology above, the Town has selected a discount rate of 6%.

**Amortization Method:** Increasing at 3.5% over thirty (30) years on an open amortization period for partial pre-funding.

**Health Care Cost Trend Rates:**

Year	Trend
1	8.00%
2	7.00%
3	6.00%
4	5.00%
5	5.00%
Ultimate	5.00%

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

- Consumer Price Index:** 3% per year.
- Medical Plan Participation:** 80% of eligible retirees will elect to participate.
- Life Insurance Participation:** 80% of eligible retirees will elect to participate.
- Dependent Status:** Male spouses are assumed to be three years older and female spouses are assumed to be three years younger than the retired employee.
- 55% of employees are assumed to retire with a covered spouse.
- For current retirees, the actual census information is used.

**Medical Per Capita Costs:** Annual per capita costs for the fiscal year beginning July 1, 2016 are as follows:

<u>Age</u>	<u>Male</u>	<u>Female</u>
Under 20	\$3,873	\$4,547
20-24	\$3,052	\$4,841
25-29	\$3,176	\$7,141
30-34	\$3,989	\$9,023
35-39	\$5,004	\$9,295
40-44	\$6,235	\$9,519
45-49	\$7,869	\$10,449
50-54	\$10,371	\$12,292
55-59	\$13,477	\$14,213
60-64	\$17,296	\$16,916
65-69	\$3,116	\$3,035
70-74	\$3,735	\$3,580
75-79	\$4,410	\$4,154
80-84	\$5,069	\$4,764
85-89	\$5,647	\$5,325
90-94	\$6,147	\$5,683
95+	\$6,534	\$5,496



## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

**Retiree Contributions:** Annual per capita participant contributions for the fiscal year beginning July 1, 2016 are as follows:

	<u>Plan</u>	<u>Town</u>	<u>Teachers</u>
<i>Current Retirees:</i>			
Non-Medicare Plans	\$ 3,095		\$ 1,684
Medicare Plans	\$ 1,946		\$ 740
<i>Future Retirees:</i>			
Non-Medicare Plans	\$ 3,095		\$ 2,371
Medicare Plans	\$ 1,946		\$ 1,479

Future retired teacher contributions shown are for FY18. These are scheduled to increase through 2025 to reflect mitigation provided by Town. For 2025 and later, future retired teachers will contribute same premium as Town retirees.

**Excise Tax:** For purposes of estimating the excise tax, per capita plan costs are developed for individual and family coverage for both Medicare and non-Medicare members. These plan costs are compared to the thresholds stipulated in the Patient Protection and Affordable Care Act (PPACA). Beginning in 2020, a 40% excise tax is applied on the excess of the plan costs over the thresholds, which increase annually by CPI.

**Actuarial Cost Method:** Entry Age Normal. The costs of each employee's postemployment benefits are allocated as a level basis over the earnings of the employee between the employee's date of hire and the assumed exit ages. Previously, Projected Unit Credit.

**Employee Data:** Employee and retiree data were submitted by the Town. We made reasonable adjustments for missing or invalid data.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

**Post-Retirement Mortality:** Post-retirement mortality rates for General and Public Safety employees are based on the RP-2000 Healthy Annuitant Mortality Table, base year 2009, projected with generational mortality improvement using scale BB.

**Pre-Retirement Mortality:** Pre-retirement mortality rates for General and Public Safety employees are based on the RP-2000 Employees Mortality Table, base year 2009, projected with generational mortality improvement using scale BB.

**Turnover Rates:** Turnover rates for General and Public Safety employees are as follows:

Groups 1 and 2		Group 4	
Service	Rate	Service	Rate
0	15.00%	0	1.50%
1	12.00%	1	1.50%
2	10.00%	2	1.50%
3	9.00%	3	1.50%
4	8.00%	4	1.50%
5-9	7.60%	5	1.50%
10-14	5.40%	6	1.50%
15-19	3.30%	7	1.50%
20-24	2.00%	8	1.50%
25-29	1.00%	9	1.50%
30+	0.00%	10	1.50%
		11+	0.00%

**Disability Rates:** Disability rates for General and Public Safety employees are as follows:

Groups 1 and 2		Group 4	
Age	Rate	Age	Rate
20	0.01%	20	0.20%
30	0.03%	30	0.60%
40	0.10%	40	0.60%
50	0.19%	50	2.50%

55% of the General employee disabilities are assumed job-related.

90% of the Public Safety employee disabilities are assumed job-related.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

**Retirement Rates:**

Retirement rates for General and Public Safety employees are as follows:

<u>Age</u>	<u>Hired Prior to April 2, 2012</u>			<u>Hired After April 1, 2012</u>		
	<u>Groups 1 and 2</u>	<u>Group 4</u>	<u>All</u>	<u>Groups 1 and 2</u>	<u>Group 4</u>	<u>All</u>
50-51	1.00%	1.50%	2.00%	0.00%	0.00%	1.00%
52	1.00%	2.00%	2.00%	0.00%	0.00%	2.00%
53	1.00%	2.50%	5.00%	0.00%	0.00%	2.00%
54	2.00%	2.50%	7.50%	0.00%	0.00%	2.00%
55	2.00%	5.50%	15.00%	0.00%	0.00%	5.00%
56	2.50%	6.50%	10.00%	0.00%	0.00%	7.50%
57	2.50%	6.50%	10.00%	0.00%	0.00%	15.00%
58	5.00%	6.50%	10.00%	0.00%	0.00%	10.00%
59	6.50%	6.50%	15.00%	0.00%	0.00%	10.00%
60	12.00%	5.00%	20.00%	5.00%	6.50%	10.00%
61	20.00%	13.00%	20.00%	6.50%	6.50%	15.00%
62	30.00%	15.00%	25.00%	20.00%	15.00%	20.00%
63	25.00%	12.50%	25.00%	20.00%	13.00%	20.00%
64	22.00%	18.00%	30.00%	30.00%	15.00%	30.00%
65	40.00%	15.00%	100.00%	25.00%	12.50%	100.00%
66	25.00%	20.00%		22.00%	18.00%	
67	25.00%	20.00%		40.00%	25.00%	
68	30.00%	25.00%		30.00%	20.00%	
69	30.00%	20.00%		30.00%	20.00%	
70	100.00%	100.00%		100.00%	100.00%	

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

**Post-Retirement Mortality:** Post-retirement mortality rates for Teachers are based on the RP-2014 Healthy Annuitant Mortality Table, base year 2014, projected with generational mortality improvement using scale BB.

**Pre-Retirement Mortality:** Pre-retirement mortality rates for Teachers are based on the RP-2014 Employees Mortality Table, base year 2014, projected with generational mortality improvement using scale BB.

**Turnover Rates:** Turnover rates for Teachers are as follows:

<u>Age</u>	<u>Service</u>					
	0		5		10+	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
20	13.0%	10.0%	5.5%	7.0%	1.5%	5.0%
30	15.0%	15.0%	5.4%	8.8%	1.5%	4.5%
40	13.3%	10.5%	5.2%	5.0%	1.7%	2.2%
50	16.2%	9.8%	7.0%	5.0%	2.3%	2.0%

**Disability Rates:** Disability rates for Teachers are as follows:

<u>Age</u>	<u>Rate</u>
20	0.004%
30	0.006%
40	0.010%
50	0.050%
60	0.070%

35% of the disabilities are job-related.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

**Retirement Rates:**

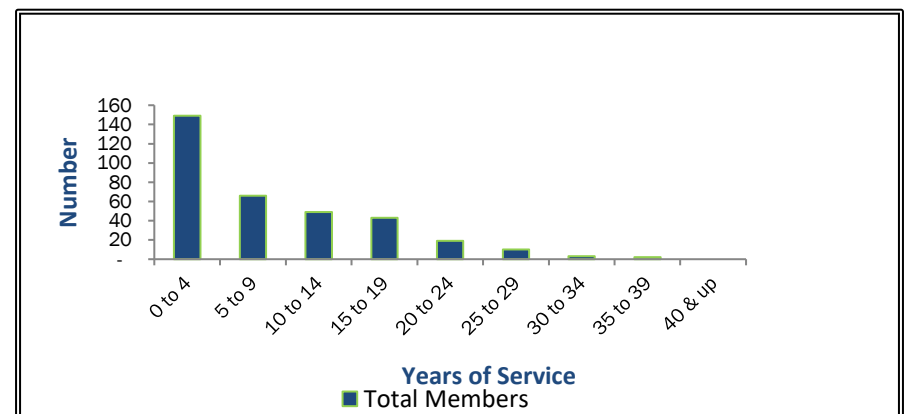
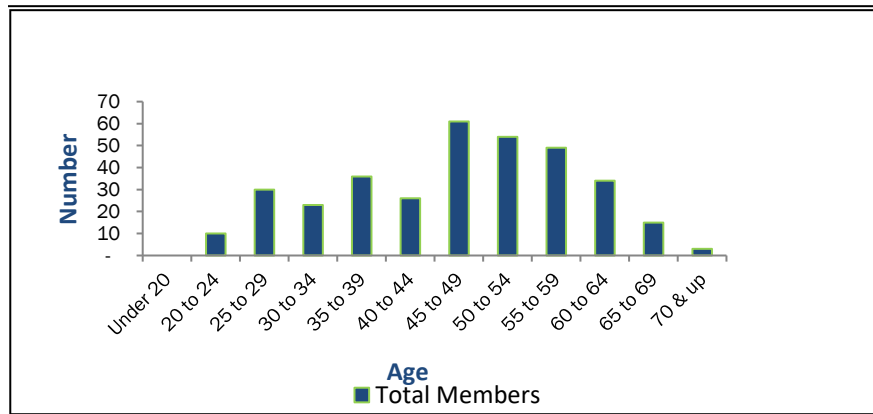
Retirement rates for Teachers are as follows:

<u>Age</u>	<u>Years of Service</u>					
	<u>Less than 20</u>		<u>20-29</u>		<u>30+</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
50	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
51	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
52	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
53	0.0%	0.0%	1.5%	1.0%	2.0%	1.5%
54	0.0%	0.0%	2.5%	1.0%	2.0%	2.0%
55	5.0%	3.0%	3.0%	3.0%	6.0%	5.0%
56	5.0%	3.0%	6.0%	5.0%	20.0%	15.0%
57	5.0%	4.0%	10.0%	8.0%	40.0%	35.0%
58	5.0%	8.0%	15.0%	10.0%	50.0%	35.0%
59	10.0%	8.0%	20.0%	15.0%	50.0%	35.0%
60	10.0%	10.0%	25.0%	20.0%	40.0%	35.0%
61	20.0%	12.0%	30.0%	25.0%	40.0%	35.0%
62	20.0%	12.0%	35.0%	30.0%	35.0%	35.0%
63	25.0%	15.0%	40.0%	30.0%	35.0%	35.0%
64	25.0%	20.0%	40.0%	30.0%	35.0%	35.0%
65	25.0%	25.0%	40.0%	40.0%	35.0%	35.0%
66	30.0%	25.0%	30.0%	30.0%	40.0%	35.0%
67	30.0%	30.0%	30.0%	30.0%	40.0%	30.0%
68	30.0%	30.0%	30.0%	30.0%	40.0%	30.0%
69	30.0%	30.0%	30.0%	30.0%	40.0%	30.0%
70	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

## SECTION 7 - PLAN MEMBER INFORMATION

**TABLE 7.1 - ACTIVE MEMBERS BY AGE and YEARS OF SERVICE AS OF JULY 1, 2016**

Age	Years of Service										Total
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up		
Under 20	-	-	-	-	-	-	-	-	-	-	-
20 to 24	10	-	-	-	-	-	-	-	-	-	10
25 to 29	25	5	-	-	-	-	-	-	-	-	30
30 to 34	16	7	-	-	-	-	-	-	-	-	23
35 to 39	16	11	6	3	-	-	-	-	-	-	36
40 to 44	13	5	3	4	1	-	-	-	-	-	26
45 to 49	20	15	9	11	6	-	-	-	-	-	61
50 to 54	24	12	7	6	3	1	1	-	-	-	54
55 to 59	12	7	10	8	5	4	2	1	-	-	49
60 to 64	10	2	8	7	4	2	-	1	-	-	34
65 to 69	2	2	5	3	-	3	-	-	-	-	15
70 & up	1	-	1	1	-	-	-	-	-	-	3
<b>Total</b>	<b>149</b>	<b>66</b>	<b>49</b>	<b>43</b>	<b>19</b>	<b>10</b>	<b>3</b>	<b>2</b>	<b>-</b>	<b>341</b>	
Average Age:						47.26		Average Service:		8.92	



## SECTION 7 - PLAN MEMBER INFORMATION

**TABLE 7.2 - RETIRED MEMBERS, COVERED SPOUSES and SURVIVORS AS OF JULY 1, 2016**

Age	Non-Medicare Plans		Medicare Plans		Total
	HMO	PPO	Managed Blue	Medex 2	
Under 40	0	0	0	0	0
40 to 44	0	0	0	0	0
45 to 49	0	0	0	0	0
50 to 54	0	0	0	0	0
55 to 59	16	1	0	0	17
60 to 64	16	5	2	2	25
65 to 69	2	5	5	30	42
70 to 74	1	1	13	17	32
75 to 79	0	1	9	19	29
80 to 84	1	0	5	7	13
85 to 89	0	0	4	5	9
90+	0	0	4	2	6
<b>Total</b>	<b>36</b>	<b>13</b>	<b>42</b>	<b>82</b>	<b>173</b>
<b>Covered Spouses</b>	<b>23</b>	<b>3</b>	<b>18</b>	<b>42</b>	<b>86</b>

In addition, there are 9 retiree(s), survivor(s) and covered spouse(s) that are not covered under any medical plan but are covered under a life insurance policy which the Town contributes to.

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## SECTION 8 - GLOSSARY OF TERMS

**Actuarial Assumptions** – Assumptions as to the occurrence of future events affecting OPEB costs, such as mortality, withdrawal, disability and retirement; changes in compensation and OPEB benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; characteristics of future entrants for Open Group Actuarial Cost Methods; and other relevant items.

**Actuarial Cost Method (or Funding Method)** – A procedure for allocating the Actuarial Present Value of projected benefit payments to the current year (Service Cost) and the past (Total OPEB Liability).

**Actuarial Gain or Loss (or Experience Gain or Loss)** – A measure of the difference between actual experience and that expected based upon the set of Actuarial Assumptions during the period between the valuation date and the most recent immediately preceding valuation date.

**Actuarial Present Value of Projected Benefit Payments** – The dollar value on the valuation date of all benefits expected to be paid to current members based upon the Actuarial Assumptions and the terms of the Plan.

**Actuarially Determined Contribution** – A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

**Actuarial Valuation Date** – The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

**Deferred Inflow of Resources** – Acquisition of resources by a governmental entity that is applicable to future reporting periods. Under GASB 75, deferred inflows of resources are made up of experience gains, assumption changes reducing the Total OPEB Liability and investment gains that are recognized in future reporting periods.

**Deferred Outflow of Resources** – Consumption of resources by a governmental entity that is applicable to future reporting periods. Under GASB 75, deferred outflows of resources are made up of experience losses, assumption changes increasing the Total OPEB Liability and investment losses that are recognized in future reporting periods.

**Entry Age Normal Actuarial Cost Method** – A method under which the actuarial present value of the projected benefits of each individual in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age.

**Explicit Subsidy** – The difference between (a) the blended rates based on combined active and retired member experience and (b) actual cash contributions made by the employer.

**Fiduciary Net Position** – The fair market value of assets as of the measurement date.

**Funded Ratio** – The Actuarial Value of Assets expressed as a percentage of the Actuarial Accrued Liability.



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## SECTION 8 - GLOSSARY OF TERMS

**GASB** – Governmental Accounting Standards Board.

**Health Cost Trend Rate** – The rate of change in per capita health claims cost over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.

**Implicit Subsidy** – In an experience-rated healthcare plan that includes both active employees and retirees with blended premium rates for all plan members, the difference between (a) the age-adjusted premiums approximating claim costs for retirees in the group and (b) the blended rates based on combined active and retired member experience.

**Measurement Date** – The date as of which the Total OPEB Liability and Fiduciary Net Position are measured.

**Net OPEB Liability** – The liability of the employer for benefits provided through an OPEB plan. It is calculated as the Total OPEB Liability less the Fiduciary Net Position.

**OPEB** – Other Postemployment Benefits including medical, dental, vision, hearing and life insurance benefits.

**Pay-As-You-Go** – A method of financing an OPEB plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.

**Present Value of Future Benefits** – The actuarial present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value of money and the probabilities of payment.

**Reporting Date** – The last day of the Plan or employer's fiscal year.

**Service Cost** – The portion of the actuarial present value of projected benefit amounts that is attributed to a valuation year.

**Substantive Plan** – The terms of an OPEB plan as understood by the employer and plan members.

**Total OPEB Liability** – The portion of the actuarial present value of projected benefit amounts that is attributed to past periods of employee service.

**Unfunded Actuarial Accrued Liability** – The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

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## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Under GASB 74, a series of projections and calculations are used to determine the discount rate for the purpose of the measurement of the Total OPEB Liability. The discount rate is the single rate that reflects (1) the long-term expected rate of return on OPEB plan investments that are expected to be used to finance the payment of benefits, to the extent that the OPEB plan's fiduciary net position is projected to be sufficient to make projected benefit payments and OPEB plan assets are expected to be invested using a strategy to achieve that return, and (2) a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher, to the extent that the conditions for use of the long-term expected rate of return are not met.

Projected cash flows into and out of the OPEB plan are assumed to be contributions to the OPEB plan, benefit payments, OPEB plan administrative expenses and OPEB plan investment earnings. These projected cash flows are used to project the OPEB plan's fiduciary net position at the beginning of each period. The OPEB plan's projected fiduciary net position at the beginning of each period is compared to the amount of benefit payments projected to occur in that period.

It is assumed that the OPEB plan's fiduciary net position is expected to always be invested using a strategy to achieve the long-term expected rate of return on OPEB plan investments.

The benefit payments that are projected to occur in a period are discounted using the long-term expected rate of return on OPEB plan investments if the amount of the OPEB plan's beginning fiduciary net position is projected to be sufficient to make the benefit payments in that period. In periods in which benefit payments are projected to be greater than the amount of the OPEB plan's fiduciary net position, they are discounted using a municipal bond rate as required by GASB 74.

For purposes of this valuation, the long-term expected rate of return on OPEB plan investments is 7.5%; the municipal bond rate is 3.58%, based on the Bond Buyer 20-Bond GO Index published on June 29, 2017. The OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to the first 14 periods of projected future benefit payments and, the 3.58% municipal bond rate was applied to all periods thereafter to determine the total OPEB liability. The 3.58% municipal bond rate was based on the Bond Buyer 20-Bond General Obligation Municipal Bond Index as of June 29, 2017.

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

**Table 1: Projection of Contributions**

Year	Projected Payroll			Projected Contributions			
	Payroll for Current Plan Members (a)	Payroll for Future Plan Members (b)	Total Payroll (c) = (a) + (b)	Employer Contributions (Benefit Payments) (d)	Employer Contributions (OPEB Trust) (e)	Employer Contributions Related to Payroll of Future Employees (f) = (b) * 3.91%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2017	21,581,455	-	21,581,455	1,539,864	475,000	-	2,014,864
2018	20,187,386	2,257,327	22,444,713	1,670,698	350,000	88,227	1,932,471
2019	19,170,000	4,172,502	23,342,502	1,746,094	350,000	163,080	1,933,014
2020	18,243,380	6,032,822	24,276,202	1,733,593	350,000	235,790	1,847,803
2021	17,411,276	7,835,974	25,247,250	1,694,872	350,000	306,266	1,738,606
2022	16,611,008	9,646,132	26,257,140	1,723,433	350,000	377,015	1,696,418
2023	15,892,946	11,414,480	27,307,426	1,767,185	350,000	446,130	1,671,055
2024	15,178,353	13,221,370	28,399,723	1,838,961	350,000	516,752	1,672,209
2025	14,541,949	14,993,763	29,535,712	1,960,030	350,000	586,025	1,724,005
2026	13,861,015	16,856,125	30,717,140	1,964,259	350,000	658,814	1,655,445
2027	13,042,145	18,903,681	31,945,826	2,113,187	350,000	738,842	1,724,345
2028	12,170,403	21,053,256	33,223,659	2,271,008	350,000	822,858	1,798,150
2029	11,424,012	23,128,593	34,552,605	2,478,414	350,000	903,971	1,924,443
2030	10,700,671	25,234,038	35,934,709	2,602,442	350,000	986,262	1,966,180
2031	10,027,797	27,344,300	37,372,097	2,732,162	350,000	1,068,740	2,013,422
2032	9,342,708	29,524,273	38,866,981	2,932,339	350,000	1,153,944	2,128,395
2033	8,674,284	31,747,376	40,421,660	3,053,817	350,000	1,240,833	2,162,984
2034	8,020,567	34,017,959	42,038,526	3,022,194	350,000	1,329,577	2,042,617
2035	7,461,596	36,258,471	43,720,067	3,176,169	350,000	1,417,147	2,109,022
2036	6,971,769	38,497,101	45,468,870	3,186,538	350,000	1,504,643	2,031,895
2037	6,492,038	40,795,587	47,287,625	3,114,121	350,000	1,594,478	1,869,643
2038	6,003,901	43,175,229	49,179,130	3,325,113	350,000	1,687,485	1,987,628
2039	5,498,678	45,647,617	51,146,295	3,480,616	350,000	1,784,118	2,046,498
2040	5,039,045	48,153,102	53,192,147	3,518,794	350,000	1,882,044	1,986,750
2041	4,673,041	50,646,792	55,319,833	3,690,644	350,000	1,979,508	2,061,136
2042	4,330,744	53,201,882	57,532,626	3,797,396	350,000	2,079,373	2,068,023
2043	3,968,647	55,865,284	59,833,931	3,814,107	350,000	2,183,471	1,980,636
2044	3,632,531	58,594,757	62,227,288	3,935,144	350,000	2,290,151	1,994,993
2045	3,300,286	61,416,094	64,716,380	3,995,091	350,000	2,400,422	1,944,669
2046	2,970,472	64,334,563	67,305,035	3,938,102	350,000	2,514,489	1,773,613
2047	2,674,421	67,322,815	69,997,236	3,866,927	350,000	2,631,284	1,585,643
2048	2,399,401	70,397,724	72,797,125	3,932,171	350,000	2,751,465	1,530,706
2049	2,166,426	73,542,584	75,709,010	3,920,186	350,000	2,874,381	1,395,805
2050	1,925,856	76,811,514	78,737,370	3,833,637	350,000	3,002,145	1,181,492

Town of Cohasset Postemployment Benefits Other Than Pensions  
Financial Reporting and Disclosures Under GASB 45 and GASB 74 as of June 30, 2017

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

**Table 1: Projection of Contributions**

Year	Projected Payroll			Projected Contributions			
	Payroll for Current Plan Members (a)	Payroll for Future Plan Members (b)	Total Payroll (c) = (a) + (b)	Employer Contributions (Benefit Payments) (d)	Employer Contributions (OPEB Trust) (e)	Employer Contributions Related to Payroll of Future Employees (f) = (b) * 3.91%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2051	1,687,560	80,199,305	81,886,865	3,852,965	350,000	3,134,556	1,068,409
2052	1,458,447	83,703,893	85,162,340	3,785,645	350,000	3,271,531	864,114
2053	1,198,247	87,370,587	88,568,834	3,676,632	350,000	3,414,842	611,790
2054	909,713	91,201,874	92,111,587	3,687,567	350,000	3,564,586	472,981
2055	695,655	95,100,395	95,796,050	3,527,284	350,000	3,716,959	160,325
2056	509,254	99,118,638	99,627,892	3,421,852	350,000	3,874,010	-
2057	378,285	103,234,723	103,613,008	3,270,892	350,000	4,034,885	-
2058	265,528	107,492,000	107,757,528	3,153,989	350,000	4,201,279	-
2059	190,398	111,877,431	112,067,829	3,015,700	350,000	4,372,682	-
2060	131,004	116,419,538	116,550,542	2,916,002	350,000	4,550,208	-
2061	75,911	121,136,653	121,212,564	2,894,466	350,000	4,734,575	-
2062	48,826	126,012,241	126,061,067	2,846,468	350,000	4,925,135	-
2063	31,563	131,071,947	131,103,510	2,836,806	350,000	5,122,891	-
2064	23,135	136,324,515	136,347,650	2,813,966	350,000	5,328,186	-
2065	-	141,801,556	141,801,556	2,807,863	350,000	5,542,254	-
2066	-	147,473,618	147,473,618	2,778,563	350,000	5,763,944	-
2067	-	153,372,563	153,372,563	2,767,849	350,000	5,994,501	-
2068	-	159,507,466	159,507,466	2,737,364	350,000	6,234,281	-
2069	-	165,887,765	165,887,765	2,688,988	350,000	6,483,653	-
2070	-	172,523,276	172,523,276	2,658,939	350,000	6,742,999	-
2071	-	179,424,207	179,424,207	2,607,607	350,000	7,012,719	-
2072	-	186,601,175	186,601,175	2,575,141	350,000	7,293,228	-
2073	-	194,065,222	194,065,222	2,518,596	350,000	7,584,957	-
2074	-	201,827,831	201,827,831	2,452,205	350,000	7,888,355	-
2075	-	209,900,944	209,900,944	2,390,758	350,000	8,203,889	-
2076	-	218,296,982	218,296,982	2,299,190	350,000	8,532,045	-
2077	-	227,028,861	227,028,861	2,223,694	350,000	8,873,326	-
2078	-	236,110,015	236,110,015	2,130,338	350,000	9,228,260	-
2079	-	245,554,416	245,554,416	2,026,538	350,000	9,597,390	-
2080	-	255,376,593	255,376,593	1,924,411	350,000	9,981,286	-
2081	-	265,591,657	265,591,657	1,799,879	350,000	10,380,537	-
2082	-	276,215,323	276,215,323	1,681,022	350,000	10,795,758	-
2083	-	287,263,936	287,263,936	1,546,934	350,000	11,227,589	-
2084	-	298,754,493	298,754,493	1,415,487	350,000	11,676,692	-

Town of Cohasset Postemployment Benefits Other Than Pensions  
 Financial Reporting and Disclosures Under GASB 45 and GASB 74 as of June 30, 2017

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

**Table 2: Projection of the OPEB Plan's Fiduciary Net Position**

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
2017	1,492,475	2,014,864	1,539,864	-	191,237	2,158,712
2018	2,158,712	1,932,471	1,670,698	-	171,720	2,592,205
2019	2,592,205	1,933,014	1,746,094	-	201,425	2,980,550
2020	2,980,550	1,847,803	1,733,593	-	227,824	3,322,584
2021	3,322,584	1,738,606	1,694,872	-	250,834	3,617,152
2022	3,617,152	1,696,418	1,723,433	-	270,273	3,860,410
2023	3,860,410	1,671,055	1,767,185	-	285,926	4,050,206
2024	4,050,206	1,672,209	1,838,961	-	297,512	4,180,966
2025	4,180,966	1,724,005	1,960,030	-	304,722	4,249,663
2026	4,249,663	1,655,445	1,964,259	-	307,144	4,247,993
2027	4,247,993	1,724,345	2,113,187	-	304,018	4,163,169
2028	4,163,169	1,798,150	2,271,008	-	294,506	3,984,817
2029	3,984,817	1,924,443	2,478,414	-	278,087	3,708,933
2030	3,708,933	1,966,180	2,602,442	-	254,310	3,326,981
2031	3,326,981	2,013,422	2,732,162	-	222,571	2,830,812
2032	2,830,812	2,128,395	2,932,339	-	182,163	2,209,031
2033	2,209,031	2,162,984	3,053,817	-	132,271	1,450,469
2034	1,450,469	2,042,617	3,022,194	-	72,051	542,943
2035	542,943	2,109,022	3,176,169	-	703	-
2036	-	2,031,895	3,186,538	-	-	-
2037	-	1,869,643	3,114,121	-	-	-
2038	-	1,987,628	3,325,113	-	-	-
2039	-	2,046,498	3,480,616	-	-	-
2040	-	1,986,750	3,518,794	-	-	-
2041	-	2,061,136	3,690,644	-	-	-
2042	-	2,068,023	3,797,396	-	-	-
2043	-	1,980,636	3,814,107	-	-	-
2044	-	1,994,993	3,935,144	-	-	-
2045	-	1,944,669	3,995,091	-	-	-
2046	-	1,773,613	3,938,102	-	-	-
2047	-	1,585,643	3,866,927	-	-	-
2048	-	1,530,706	3,932,171	-	-	-
2049	-	1,395,805	3,920,186	-	-	-
2050	-	1,181,492	3,833,637	-	-	-

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

**Table 2: Projection of the OPEB Plan's Fiduciary Net Position**

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
2051	-	1,068,409	3,852,965	-	-	-
2052	-	864,114	3,785,645	-	-	-
2053	-	611,790	3,676,632	-	-	-
2054	-	472,981	3,687,567	-	-	-
2055	-	160,325	3,527,284	-	-	-
2056	-	-	3,421,852	-	-	-
2057	-	-	3,270,892	-	-	-
2058	-	-	3,153,989	-	-	-
2059	-	-	3,015,700	-	-	-
2060	-	-	2,916,002	-	-	-
2061	-	-	2,894,466	-	-	-
2062	-	-	2,846,468	-	-	-
2063	-	-	2,836,806	-	-	-
2064	-	-	2,813,966	-	-	-
2065	-	-	2,807,863	-	-	-
2066	-	-	2,778,563	-	-	-
2067	-	-	2,767,849	-	-	-
2068	-	-	2,737,364	-	-	-
2069	-	-	2,688,988	-	-	-
2070	-	-	2,658,939	-	-	-
2071	-	-	2,607,607	-	-	-
2072	-	-	2,575,141	-	-	-
2073	-	-	2,518,596	-	-	-
2074	-	-	2,452,205	-	-	-
2075	-	-	2,390,758	-	-	-
2076	-	-	2,299,190	-	-	-
2077	-	-	2,223,694	-	-	-
2078	-	-	2,130,338	-	-	-
2079	-	-	2,026,538	-	-	-
2080	-	-	1,924,411	-	-	-
2081	-	-	1,799,879	-	-	-
2082	-	-	1,681,022	-	-	-
2083	-	-	1,546,934	-	-	-
2084	-	-	1,415,487	-	-	-

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

**Table 2: Projection of the OPEB Plan's Fiduciary Net Position**

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
2085	-	-	1,278,255	-	-	-
2086	-	-	1,137,499	-	-	-
2087	-	-	1,007,982	-	-	-
2088	-	-	874,071	-	-	-
2089	-	-	751,968	-	-	-
2090	-	-	633,669	-	-	-
2091	-	-	528,191	-	-	-
2092	-	-	431,829	-	-	-
2093	-	-	349,134	-	-	-
2094	-	-	277,277	-	-	-
2095	-	-	216,887	-	-	-
2096	-	-	166,719	-	-	-
2097	-	-	125,879	-	-	-
2098	-	-	93,480	-	-	-
2099	-	-	68,013	-	-	-
2100	-	-	48,700	-	-	-
2101	-	-	34,074	-	-	-
2102	-	-	23,532	-	-	-
2103	-	-	15,888	-	-	-
2104	-	-	10,581	-	-	-
2105	-	-	6,949	-	-	-
2106	-	-	4,494	-	-	-
2107	-	-	2,878	-	-	-
2108	-	-	1,815	-	-	-
2109	-	-	1,129	-	-	-
2110	-	-	701	-	-	-
2111	-	-	426	-	-	-
2112	-	-	254	-	-	-
2113	-	-	152	-	-	-
2114	-	-	83	-	-	-
2115	-	-	40	-	-	-
2116	-	-	17	-	-	-
2117	-	-	11	-	-	-
2118	-	-	-	-	-	-

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

**Table 3: Actuarial Present Value of Projected Benefit Payments - End of Measurement Period**

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments (b)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g)
2018	2,158,712	1,670,698	1,670,698	-	1,611,364	-	1,639,096
2019	2,592,205	1,746,094	1,746,094	-	1,566,588	-	1,648,871
2020	2,980,550	1,733,593	1,733,593	-	1,446,858	-	1,575,720
2021	3,322,584	1,694,872	1,694,872	-	1,315,853	-	1,482,797
2022	3,617,152	1,723,433	1,723,433	-	1,244,676	-	1,451,282
2023	3,860,410	1,767,185	1,767,185	-	1,187,231	-	1,432,360
2024	4,050,206	1,838,961	1,838,961	-	1,149,258	-	1,434,682
2025	4,180,966	1,960,030	1,960,030	-	1,139,461	-	1,471,833
2026	4,249,663	1,964,259	1,964,259	-	1,062,250	-	1,419,735
2027	4,247,993	2,113,187	2,113,187	-	1,063,059	-	1,470,142
2028	4,163,169	2,271,008	2,271,008	-	1,062,747	-	1,520,733
2029	3,984,817	2,478,414	2,478,414	-	1,078,888	-	1,597,426
2030	3,708,933	2,602,442	2,602,442	-	1,053,842	-	1,614,511
2031	3,326,981	2,732,162	2,732,162	-	1,029,182	-	1,631,469
2032	2,830,812	2,932,339	-	2,932,339	-	1,760,814	1,685,387
2033	2,209,031	3,053,817	-	3,053,817	-	1,770,380	1,689,433
2034	1,450,469	3,022,194	-	3,022,194	-	1,691,492	1,609,286
2035	542,943	3,176,169	-	3,176,169	-	1,716,229	1,627,898
2036	-	3,186,538	-	3,186,538	-	1,662,321	1,572,011
2037	-	3,114,121	-	3,114,121	-	1,568,394	1,478,716
2038	-	3,325,113	-	3,325,113	-	1,616,778	1,519,737
2039	-	3,480,616	-	3,480,616	-	1,633,895	1,531,197
2040	-	3,518,794	-	3,518,794	-	1,594,725	1,489,983
2041	-	3,690,644	-	3,690,644	-	1,614,799	1,504,189
2042	-	3,797,396	-	3,797,396	-	1,604,080	1,489,701
2043	-	3,814,107	-	3,814,107	-	1,555,454	1,440,187
2044	-	3,935,144	-	3,935,144	-	1,549,348	1,430,208
2045	-	3,995,091	-	3,995,091	-	1,518,585	1,397,585
2046	-	3,938,102	-	3,938,102	-	1,445,185	1,326,023
2047	-	3,866,927	-	3,866,927	-	1,370,020	1,253,265
2048	-	3,932,171	-	3,932,171	-	1,344,984	1,226,654
2049	-	3,920,186	-	3,920,186	-	1,294,541	1,177,089
2050	-	3,833,637	-	3,833,637	-	1,222,205	1,107,966
2051	-	3,852,965	-	3,852,965	-	1,185,911	1,071,823

Town of Cohasset Postemployment Benefits Other Than Pensions  
 Financial Reporting and Disclosures Under GASB 45 and GASB 74 as of June 30, 2017



## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

**Table 3: Actuarial Present Value of Projected Benefit Payments - End of Measurement Period**

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments			
		Projected Benefit Payments (b)	"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g)
2052	-	3,785,645	-	3,785,645	-	1,124,919	1,013,633
2053	-	3,676,632	-	3,676,632	-	1,054,764	947,554
2054	-	3,687,567	-	3,687,567	-	1,021,338	914,758
2055	-	3,527,284	-	3,527,284	-	943,178	842,209
2056	-	3,421,852	-	3,421,852	-	883,362	786,418
2057	-	3,270,892	-	3,270,892	-	815,207	723,554
2058	-	3,153,989	-	3,153,989	-	758,902	671,549
2059	-	3,015,700	-	3,015,700	-	700,548	618,043
2060	-	2,916,002	-	2,916,002	-	653,976	575,216
2061	-	2,894,466	-	2,894,466	-	626,710	549,572
2062	-	2,846,468	-	2,846,468	-	595,016	520,206
2063	-	2,836,806	-	2,836,806	-	572,501	499,012
2064	-	2,813,966	-	2,813,966	-	548,263	476,445
2065	-	2,807,863	-	2,807,863	-	528,166	457,597
2066	-	2,778,563	-	2,778,563	-	504,590	435,853
2067	-	2,767,849	-	2,767,849	-	485,272	417,903
2068	-	2,737,364	-	2,737,364	-	463,339	397,812
2069	-	2,688,988	-	2,688,988	-	439,420	376,138
2070	-	2,658,939	-	2,658,939	-	419,492	357,997
2071	-	2,607,607	-	2,607,607	-	397,174	337,929
2072	-	2,575,141	-	2,575,141	-	378,673	321,216
2073	-	2,518,596	-	2,518,596	-	357,557	302,390
2074	-	2,452,205	-	2,452,205	-	336,100	283,386
2075	-	2,390,758	-	2,390,758	-	316,352	265,932
2076	-	2,299,190	-	2,299,190	-	293,721	246,163
2077	-	2,223,694	-	2,223,694	-	274,258	229,158
2078	-	2,130,338	-	2,130,338	-	253,662	211,311
2079	-	2,026,538	-	2,026,538	-	232,963	193,482
2080	-	1,924,411	-	1,924,411	-	213,577	176,847
2081	-	1,799,879	-	1,799,879	-	192,852	159,204
2082	-	1,681,022	-	1,681,022	-	173,891	143,119
2083	-	1,546,934	-	1,546,934	-	154,490	126,768
2084	-	1,415,487	-	1,415,487	-	136,477	111,649
2085	-	1,278,255	-	1,278,255	-	118,985	97,047

Town of Cohasset Postemployment Benefits Other Than Pensions  
 Financial Reporting and Disclosures Under GASB 45 and GASB 74 as of June 30, 2017

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

**Table 3: Actuarial Present Value of Projected Benefit Payments - End of Measurement Period**

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments			
		Projected Benefit Payments (b)	"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g)
2086	-	1,137,499	-	1,137,499	-	102,224	83,124
2087	-	1,007,982	-	1,007,982	-	87,454	70,899
2088	-	874,071	-	874,071	-	73,214	59,176
2089	-	751,968	-	751,968	-	60,810	49,002
2090	-	633,669	-	633,669	-	49,472	39,746
2091	-	528,191	-	528,191	-	39,812	31,888
2092	-	431,829	-	431,829	-	31,424	25,094
2093	-	349,134	-	349,134	-	24,528	19,528
2094	-	277,277	-	277,277	-	18,806	14,928
2095	-	216,887	-	216,887	-	14,202	11,239
2096	-	166,719	-	166,719	-	10,540	8,315
2097	-	125,879	-	125,879	-	7,683	6,043
2098	-	93,480	-	93,480	-	5,508	4,320
2099	-	68,013	-	68,013	-	3,869	3,025
2100	-	48,700	-	48,700	-	2,675	2,085
2101	-	34,074	-	34,074	-	1,807	1,404
2102	-	23,532	-	23,532	-	1,205	933
2103	-	15,888	-	15,888	-	785	607
2104	-	10,581	-	10,581	-	505	389
2105	-	6,949	-	6,949	-	320	246
2106	-	4,494	-	4,494	-	200	153
2107	-	2,878	-	2,878	-	124	94
2108	-	1,815	-	1,815	-	75	57
2109	-	1,129	-	1,129	-	45	34
2110	-	701	-	701	-	27	20
2111	-	426	-	426	-	16	12
2112	-	254	-	254	-	9	7
2113	-	152	-	152	-	5	4
2114	-	83	-	83	-	3	2
2115	-	40	-	40	-	1	1
2116	-	17	-	17	-	1	-
2117	-	11	-	11	-	-	-
2118	-	-	-	-	-	-	-

Town of Cohasset Postemployment Benefits Other Than Pensions  
 Financial Reporting and Disclosures Under GASB 45 and GASB 74 as of June 30, 2017