



**TOWN OF CHARLTON,
MASSACHUSETTS**

OTHER POSTEMPLOYMENT BENEFITS PROGRAM

FINANCIAL REPORTING AND DISCLOSURES
Governmental Accounting Standards Board
Statements 74 and 75

Disclosures as of
June 30, 2019

KMS Actuarial, LLC
52 Hunt Road
Kingston, NH 03848

November, 2019



November 7, 2019

Ms. Donna Foglio
Finance Director
Town of Charlton, Massachusetts
37 Main Street
Charlton, MA 01507

Dear Donna:

We are pleased to present the enclosed report of the July 1, 2018 actuarial valuation of the retiree health care benefits for the Town of Charlton, Massachusetts. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2019 under the following Government Accounting Standards Board (GASB) Statements:

- ◆ GASB Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans (GASB 74)
- ◆ GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions (GASB 75)

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 75 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 Charlton, Massachusetts as well as health plan rates provided by the Town of Charlton as of July 1, 2019. 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 3.68%, a long-term investment return rate of 7.5% and a municipal bond rate of 3.5%. The long-term investment return rate is based on expected long-term investment return rates provided by the Trust's investment consultant, Bartholomew & Company.

K M S A C T U A R I E S

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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 Worcester Regional Retirement System's actuaries 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 Charlton, Massachusetts 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.

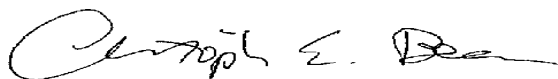
Respectfully submitted,



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EXECUTIVE SUMMARY

This report presents the results of the actuarial valuation of the Town of Charlton, Massachusetts's retiree health care benefits as of July 1, 2018. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2019 under the following Government Accounting Standards Board (GASB) Statements:

- ◆ GASB Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans (GASB 74)
- ◆ GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions (GASB 75)

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 Charlton, Massachusetts 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 Charlton, Massachusetts. 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 Charlton, Massachusetts.

Summary of Results

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

Measurement Date	<u>June 30, 2019</u>	<u>June 30, 2018</u>	<u>Increase/ (Decrease)</u>
Valuation Date	July 1, 2018	July 1, 2016	
Membership Data			
Active Plan Members	106	98	8.2%
Inactive Plan Members	44	43	2.3%
Total Plan Members	150	141	6.4%
 Covered Payroll	 \$6,065,778	 \$5,810,726	 4.4%
Valuation Results (GASB 74 and GASB 75)			
Discount rate	3.68%	3.90%	
Total OPEB Liability	\$13,447,187	\$11,888,236	13.1%
Fiduciary Net Position	\$894,955	\$724,569	23.5%
Net OPEB Liability	\$12,552,232	\$11,163,667	12.4%
Funded Ratio	6.7%	6.1%	9.8%
Valuation Results (GASB 75)			
OPEB Expense	\$995,524	\$894,400	11.3%
Deferred Outflows	\$1,223,201	\$11,800	
Deferred Inflows	\$987,325	\$590,330	

EXECUTIVE SUMMARY

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, the difference between expected and actual experience resulted in an actuarial gain of approximately \$540,000. The gain was mostly comprised of premium rates lower than expected from the previous valuation.

Changes of Assumptions

The discount rate changed from 3.9% as of June 30, 2018 to 3.68% as of June 30, 2019. Additionally, the health cost trend rates have been updated since the prior measurement. The Actuarial Assumptions and Methods used in the valuation are summarized in Section 6.

Changes of Benefit Terms

All benefit terms are the same as those used in the prior measurement. A Summary of the Principal Plan Provisions is provided in Section 5.

Total OPEB Liability

The Total OPEB Liability as of the current measurement date, June 30, 2019, is \$13,447,187. The Total OPEB Liability as of the prior measurement date, June 30, 2018, was \$11,888,236. The development of the Total OPEB Liability for the current measurement date is shown in Section 1, Exhibit 1.2.

Fiduciary Net Position

The Fiduciary Net Position is equal to the market value of assets and as of the current measurement date, June 30, 2019, is \$894,955. The Fiduciary Net Position as of the prior measurement date, June 30, 2018, was \$724,569. During the plan years ended 2019 and 2018, the actual rates of return were 5.99% and 5.65%, respectively. The expected long-term rate of return is 7.50%. The Fiduciary Net Position is shown in Section 1, Exhibit 1.1.

Employer Future Period Contributions

The Town's funding policy is to fund the unfunded liability for the Town over 50 years and the unfunded liability for the Water and Sewer departments over 10 years beginning in fiscal year 2019.

Discount Rate

As of the June 30, 2019 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 13 periods of projected future benefit payments and the 3.5% municipal bond rate was applied to all periods thereafter to determine the total OPEB liability. Projected benefit payments are discounted to their actuarial present value using a single discount rate of 3.68%.

OPEB Expense

The OPEB Expense as of the current measurement date, June 30, 2019, is \$995,524. Benefit changes are recognized immediately and experience and assumption changes developed in this valuation are recognized over 8.55 years. Investment gains and losses are recognized over 5 years. The OPEB Expense for the prior measurement period was \$894,400. The development of the OPEB expense for the current measurement date is shown in Section 4, Exhibit 4.2.

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.1 - OPEB Trust Assets

The Town of Charlton OPEB Trust has established an irrevocable trust pursuant to Section 20 of M.G.L. Chapter 32B for the purpose of accumulating assets to prefund the OPEB liabilities. 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	2019	2018
Trust Fund Composition at Fiscal Year-End		
Domestic Equity	\$323,754	\$206,932
Domestic Bond	170,246	139,075
International Equity	202,851	129,918
Alternative	147,586	111,941
International Bond	47,859	34,268
Cash and Equivalents	2,659	102,435
Total Market Value of Assets	\$894,955	\$724,569
Asset Activity		
Market value, beginning of year	\$724,569	\$559,068
Employer Premiums	296,839	282,778
OPEB Trust Contributions	124,526	133,321
Benefit Payments	(296,839)	(282,778)
Administrative Expenses	-	-
Investment Return	45,860	32,180
Market value, end of year	\$894,955	\$724,569
Money-Weighted Rate of Return	5.99%	5.65%
(Gain) / Loss on OPEB Plan Investments		
Projected earnings	\$57,381	\$46,930
Actual earnings	45,860	32,180
(Gain) / Loss on OPEB plan investments	\$11,521	\$14,750

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, 2019 measurement date was developed from an actuarial valuation as of July 1, 2018 and rolled forward to the OPEB plan's fiscal year-end.

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.

Actuarial gains and losses arise from the difference between estimates and actual experience, excluding amounts related to benefit changes and changes in assumptions or other inputs.

The development of the Total OPEB Liability from the beginning of the measurement period, June 30, 2018 to the end of the measurement period, June 30, 2019 is shown below:

<u>Measurement Date</u>		<u>June 30, 2019</u>
1. Total OPEB Liability, beginning of year:		
a. Actives	\$6,877,603	
b. Retirees, Covered Spouses and Survivors	5,010,633	
c. Total OPEB Liability at 3.9% (a. + b.)		\$11,888,236
2. Service Cost		\$551,588
3. Expected Benefit Payments		
a. Current retirees	(\$273,233)	
b. Future retirees	(23,606)	
c. Total (a. + b.)		(\$296,839)
4. Interest [3.9% x (1.c. + 2. + .5 x 3.c)]		\$479,365
5. Changes of benefit terms		\$0
6. Differences between expected and actual experience		(\$539,917)
7. Changes of assumptions or other inputs		\$1,364,754
8. Total OPEB Liability, end of year (1.c. + 2. + 3.c. + 4. + 5. + 6. + 7.)		
a. Actives	\$7,400,358	
b. Retirees, Covered Spouses and Survivors	6,046,829	
c. Total OPEB Liability at 3.68% (a. + b.)		\$13,447,187

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.3 - Development of Actuarially Determined Employer Contributions

The Town's funding policy is to fund the unfunded liability for the Town over 50 years and the unfunded liability for the Water and Sewer departments over 10 years beginning in fiscal year 2019.

The Actuarially Determined Employer Contribution (ADEC) equals the Normal Cost plus a provision for amortizing the Unfunded Actuarial Accrued Liability. We have assumed level dollar amortization over an amortization period of 30 years.

Fiscal Year Ending	June 30, 2019
Discount Rate	3.90%
1. Normal Cost	\$551,588
2. Unfunded Actuarial Accrued Liability	
a. Actuarial Accrued Liability	\$11,888,236
b. Actuarial Value of Plan Assets	\$724,569
c. Unfunded Actuarial Accrued Liability	\$11,163,667
3. Amortization of Unfunded Actuarial Accrued Liability	
a. Unfunded Actuarial Accrued Liability	\$11,163,667
b. Amortization Period in years	30
c. Payroll Growth Rate	0.0%
d. Amortization Factor	18.19
e. Amortization Amount (3.a. / 3.d.)	\$613,726
4. Interest on 1. and 3.e.	\$45,447
5. Actuarially Determined Employer Contribution (1. + 3.e. + 4.)	\$1,210,761
6. Actual Employer Contribution to OPEB Trust	\$124,526
7. Expected Benefit Payments	\$296,839
8. Total Contribution (6. + 7.)	\$421,365

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.1 - Plan Description

Plan administration:

The Town of Charlton, Massachusetts 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, 2019, OPEB plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefit payments ¹	44
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	106
	<hr/>
	150
	<hr/>

¹Per paragraph 34a of GASB 74 and further clarified by Question 4.67 of the 2017-2 GASB 74 Implementation Guide, the total shown for inactive plan members or beneficiaries currently receiving benefit payments does not include covered spouses or other dependents.

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:

The Town's funding policy is to fund the unfunded liability for the Town over 50 years and the unfunded liability for the Water and Sewer departments over 10 years beginning in fiscal year 2019.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

The components of the net OPEB liability at June 30, 2019, were as follows:

Total OPEB liability	\$ 13,447,187
Fiduciary net position	(894,955)
Net OPEB liability	<u>\$ 12,552,232</u>

Fiduciary net position as a percentage of the total OPEB liability 6.66%

Actuarial assumptions:

The total OPEB liability was determined by an actuarial valuation as of July 1, 2018, rolled forward to the measurement date and using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.6 percent
Discount rate	3.68%, net of investment expenses, including inflation
Healthcare cost trend rate	8 percent for 2018, decreasing 0.5 percent per year to 5.5 percent, then grading down to an ultimate trend rate of 3.9 percent, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical inflation rate is reached in 2075.
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.

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, 2019 are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation¹</u>	<u>Long-Term Expected Real Rates of Return¹</u>
Domestic Equity	31%	5.92%
Domestic Bond	22%	3.69%
International Equity	21%	2.73%
Alternative	20%	3.50%
International Bond	6%	3.80%
Cash and Equivalents	0%	0.00%
Total	100%	

¹ provided by the Trust's investment consultant, Bartholomew & Company.

Discount rate:

The discount rate used to measure the total OPEB liability was 3.68%. 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 13 periods of projected future benefit payments and the 3.5% municipal bond rate was applied to all periods thereafter to determine the total OPEB liability.

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 3.68 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (2.68 percent) or 1-percentage point higher (4.68 percent) than the current rate:

	1% Decrease (2.68%)	Discount Rate (3.68%)	1% Increase (4.68%)
Net OPEB Liability	\$ 15,456,485	\$ 12,552,232	\$ 10,332,012

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 2.9%) or 1-percentage point higher (9% year 1 decreasing to 4.9%) than the current healthcare cost trend rates:

	1% Decrease 7% Year 1 Decreasing to 2.9%	Healthcare Cost Trend Rates 8% Year 1 Decreasing to 3.9%	1% Increase 9% Year 1 Decreasing to 4.9%
Net OPEB Liability	\$ 9,898,294	\$ 12,552,232	\$ 16,381,466

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30	2019	2018	2017
Total OPEB Liability			
Service cost	\$ 551,588	\$ 576,851	\$ 695,524
Interest	479,365	441,303	382,780
Changes of benefit terms	-	-	-
Differences between expected and actual experience	(539,917)	-	-
Changes of assumptions	1,364,754	(670,104)	(1,768,693)
Benefit payments	(296,839)	(282,778)	(256,817)
Net change in total OPEB liability	\$ 1,558,951	\$ 65,272	\$ (947,206)
Total OPEB liability—beginning	\$ 11,888,236	\$ 11,822,964	\$ 12,770,170
Total OPEB liability—ending (a)	\$ 13,447,187	\$ 11,888,236	\$ 11,822,964
Plan fiduciary net position			
Contributions—employer	\$ 421,365	\$ 416,099	\$ 256,817
Net investment income	45,860	32,180	41,766
Benefit payments	(296,839)	(282,778)	(256,817)
Administrative expenses	-	-	-
Other	-	-	-
Net change in plan fiduciary net position	\$ 170,386	\$ 165,501	\$ 41,766
Plan fiduciary net position—beginning	\$ 724,569	\$ 559,068	\$ 517,302
Plan fiduciary net position—ending (b)	\$ 894,955	\$ 724,569	\$ 559,068
Net OPEB liability—ending (a) – (b)	\$ 12,552,232	\$ 11,163,667	\$ 11,263,896
Plan fiduciary net position as a percentage of the total OPEB liability	6.66%	6.09%	4.73%
Covered payroll	\$ 6,065,778	\$ 5,810,726	\$ 5,512,169
Net OPEB liability as a percentage of covered payroll	206.94%	192.12%	204.35%
<i>Discount rate:</i>	3.68%	3.90%	3.60%

Changes of benefit terms:
None.

Changes of assumptions:

The discount rate changed from 3.9% as of June 30, 2018 to 3.68% as of June 30, 2019. Additionally, the health cost trend rates have been updated since the prior measurement.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Investment Returns

Fiscal Year Ended June 30	<u>2019</u>	<u>2018</u>	<u>2017</u>
Annual money-weighted rate of return, net of investment expenses	5.99%	5.65%	8.07%

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 _{mw}) ^(c)
Beginning value - July 1, 2018	\$ 724,569	12	1.00	\$ 767,990
Monthly net external cash flows:				
July	-	11	0.92	-
August	-	10	0.83	-
September	-	9	0.75	-
October	-	8	0.67	-
November	-	7	0.58	-
December	-	6	0.50	-
January	-	5	0.42	-
February	124,526	4	0.33	126,965
March	-	3	0.25	-
April	-	2	0.17	-
May	-	1	0.08	-
June	-	0	0.00	-
Ending value - June 30, 2019				\$ 894,955
			Money-weighted rate of return:	5.99%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	2019	2018	2017
Actuarially determined contribution	\$ 1,210,761	\$ 1,217,671	\$ 1,082,402
Contributions in relation to the actuarially determined contribution	421,365	416,099	256,817
Contribution deficiency (excess)	\$ 789,396	\$ 801,572	\$ 825,585
Covered payroll	\$ 6,065,778	\$ 5,810,726	\$ 5,512,169
Contributions as a percentage of covered payroll	6.95%	7.16%	4.66%
Discount rate	3.90%	3.60%	4.00%
Inflation	2.60%	2.60%	2.60%

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	Level dollar amount over 30 years on an open amortization period
Amortization period	30 years
Asset valuation method	Market value
Healthcare cost trend rates	8 percent for 2018, decreasing 0.5 percent per year to 5.5 percent, then grading down to an ultimate trend rate of 3.9 percent, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical inflation rate is reached in 2075.

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

Exhibit 4.1 - Deferred Outflows and Deferred Inflows of Resources

Deferred Outflows of Resources and Deferred Inflows of Resources arising from differences between expected and actual experience are recognized in OPEB Expense over the average expected remaining service life of all active and inactive participants.

Year	Experience Losses (a)	Experience Gains (b)	Amounts Recognized in OPEB Expense through June 30, 2019 (c)	Balances at June 30, 2019	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2018	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ -	\$ 539,917	\$ (63,148)	\$ -	\$ 476,769
Total				<u>\$ -</u>	<u>\$ 476,769</u>

Deferred Outflows of Resources and Deferred Inflows of Resources arising from changes of assumptions are recognized in OPEB Expense over the average expected remaining service life of all active and inactive participants.

Year	Increases in the Total OPEB Liability (a)	Decreases in the Total OPEB Liability (b)	Amounts Recognized in OPEB Expense through June 30, 2019 (c)	Balances at June 30, 2019	
				Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2018	\$ -	\$ 670,104	\$ (159,548)	\$ -	\$ 510,556
2019	\$ 1,364,754	\$ -	\$ 159,620	\$ 1,205,134	\$ -
Total				<u>\$ 1,205,134</u>	<u>\$ 510,556</u>

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

Exhibit 4.1 - Deferred Outflows and Deferred Inflows of Resources

Deferred Outflows of Resources and Deferred Inflows of Resources arising from differences between projected and actual earnings on OPEB Plan investments are recognized in OPEB Expense over five years.

Year	Investment Earnings Less Than Projected	Investment Earnings Greater Than Projected	Amounts Recognized in OPEB Expense through June 30, 2019	Balances at June 30, 2019	
	(a)	(b)	(c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) - (c)
2018	\$ 14,750	\$ -	\$ 5,900	\$ 8,850	\$ -
2019	\$ 11,521	\$ -	\$ 2,304	\$ 9,217	\$ -
Total				\$ 18,067	\$ -
Net				\$ 18,067	\$ -

Amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources will be recognized in OPEB expense as follows:

Year ended June 30		
2020	\$	21,952
2021	\$	21,952
2022	\$	21,952
2023	\$	19,003
2024	\$	16,698
Thereafter		134,319

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

Exhibit 4.2 - OPEB Expense

The OPEB Expense and deferred outflows and inflows of resources primarily result from changes in the components of the net OPEB liability (NOL). Most changes in the NOL are included in the OPEB Expense in the period of the change, including service cost, interest on total OPEB liability, changes in benefit terms and projected earnings on the OPEB plan's investments. Other changes in the net OPEB liability are included in OPEB Expense over the current and future periods. These include the effects on the total OPEB liability of changes of economic and demographic assumptions and differences between expected and actual experience. In addition, the effect on the net OPEB liability of differences between the projected earnings on OPEB plan investments and actual experience with regard to those earnings are included in OPEB expense over the current and future periods. The OPEB Expense for the reporting period ending June 30, 2019 is presented below:

Fiscal Year Ended June 30	<u>2019</u>
Measurement date	<u>6/30/2019</u>
1. Service cost	\$ 551,588
2. Interest on the total OPEB liability	
a. Total OPEB liability, beginning of year	11,888,236
b. Service cost, beginning of year	551,588
c. Benefit payments	<u>(296,839)</u>
d. Interest on total OPEB liability = 3.9% times (a. + b. + .5 times c.)	479,365
3. Differences between expected and actual experience	(63,148)
4. Changes of benefit terms	-
5. Changes of assumptions	79,846
6. Projected earnings on OPEB plan investments	
a. Plan fiduciary net position, beginning of year	724,569
b. Contributions - Employer	421,365
c. Benefit payments	(296,839)
d. Administrative expenses and other	<u>-</u>
e. Total projected earnings	(57,381)
7. Differences between projected and actual earnings on OPEB plan investments	5,254
8. OPEB plan administrative expenses	-
9. Other changes in fiduciary net position	-
10. Total OPEB Expense	<u><u>\$ 995,524</u></u>

Town of Charlton, Massachusetts Postemployment Benefits Other Than Pensions
Financial Reporting and Disclosures Under GASB 74 and GASB 75 as of June 30, 2019

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Eligibility for Postemployment Benefits: Employees of the Town and their dependents are eligible for postemployment medical and life insurance based on the eligibility requirements under the Worcester Regional Retirement System.

Retirement Eligibility: General 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

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

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

Public Safety 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 Premiums: The total monthly premiums by plan are shown below:

<u>Non-Medicare Plans - July 1, 2019</u>	<u>Individual</u>	<u>Family</u>
HMO Network Blue Family	\$633.26	\$1,817.88
HMO Network Blue Ind +1	\$633.26	\$1,474.70
PPO Blue Care Elect Preferred	\$729.84	\$1,993.26
<u>Medicare Plans - January 1, 2019</u>		
Medex	\$355.00	

Participant Contributions: Retired employees contribute 50% of the total medical premium.

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

Medicare Penalty Reimbursement: The Town reimburses the Medicare late-enrollment penalty, if applicable, based on information provided in the retiree data.

SECTION 5 - SUMMARY OF PLAN PROVISIONS

- Dental Coverage:** Dental coverage is not offered to retirees.
- Life Insurance Coverage:** Retirees are eligible for a \$5,000 life insurance benefit. The total monthly cost is \$2.70. Retirees contribute \$1.35 towards the monthly premiums.
- PPACA Excise Tax:** The Patient Protection and Affordable Care Act (PPACA) applies a 40% excise tax, commonly referred to as the "Cadillac Tax", to the cost of plan benefits in excess of statutory thresholds beginning in 2022. The 2018 thresholds are assumed to be \$10,200 for individual and \$27,500 for family coverage, increasing by chained CPI plus one percentage point in 2019 and by chained CPI thereafter. 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, 2018
Disclosure Date:	June 30, 2019
GASB 75 Reporting Date:	June 30, 2019
Long-Term Expected Rate of Return:	7.5%, compounded annually, net of fees. A long-term assumption based on capital market expectations by asset class, historical returns and professional judgment. A building block approach was used that considered the target asset allocation, expected returns by asset class and risk analysis to determine a long-term expected average annual rate of return.
Municipal Bond Rate:	3.5%, based on the Bond Buyer 20-Bond GO Index published on June 27, 2019.
Discount Rate (GASB):	3.68%, compounded annually, for the measurement as of June 30, 2019. 3.9%, compounded annually, for the measurement as of June 30, 2018. The single rate that reflects the long-term expected rate of return on OPEB plan investments to the extent that the OPEB plan's assets, which are expected to be invested using a strategy to achieve that return, are sufficient to pay benefits, and 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.
Discount Rate (ADEC):	3.9%, compounded annually, for development of the Actuarially Determined Contribution (ADEC) as of June 30, 2019.
Amortization Method:	Level dollar amount over 30 years on an open amortization period for partial pre-funding.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Medical Trend Rates:

Year	Trend
1	8.00%
2	7.50%
3	7.00%
4	6.50%
5	6.00%
6	5.50%
Ultimate	3.90%

Trend rates after year 6 grade down to the ultimate rate utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate trend rate is reached in 2075.

Health care trend assumptions begin at current levels and grade down over a period of years to a lower level equal to some real rate plus inflation. The principal components of health trend are medical inflation, deductible erosion, cost shifting, utilization, technology and catastrophic claims. The overall effect of these components are expected to decline year by year.

Dental Trend Rates: Not applicable (no dental coverage).

Inflation: 2.6% per year, based on the 2019 Social Security Trustees Report.

Chained Consumer Price Index: 2.35% per year, based on assumed CPI of 2.6% and historical data trends of chained CPI approximately 0.25% lower than standard CPI.

Payroll Growth: 3.5% per year.

Participation Rates:
 Medical - 75% of eligible retired employees will elect to participate.
 Dental - Not offered to retired employees.
 Life - 80% of eligible retirees will elect to participate.
 Medicare - all retired employees are assumed to enroll in Medicare at age 65.

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.

50% of employees are assumed to retire with a covered spouse.

For current retirees, the actual census information is used.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Medical Per Capita Costs: The following annual per capita costs are for the fiscal year beginning July 1, 2018 and are applicable to retirees, survivors and spouses. Annual costs for current and future retirees are based on the blended curve shown below, developed using the plan coverages elected by current retirees and survivors and premium rates currently in effect. Future years' costs are based on the first year cost adjusted with trend.

<u>Age</u>	<u>Male</u>	<u>Female</u>
Under 20	\$3,019	\$3,544
20-24	2,379	3,773
25-29	2,475	5,566
30-34	3,109	7,033
35-39	3,900	7,244
40-44	4,860	7,420
45-49	6,134	8,144
50-54	8,084	9,581
55-59	10,504	11,078
60-64	13,481	13,185
65-69	3,392	3,303
70-74	4,065	3,897
75-79	4,800	4,521
80-84	5,517	5,185
85-89	6,146	5,796
90-94	6,691	6,186
95+	7,111	5,982

Retiree Contributions: Annual per capita participant contributions for the fiscal year beginning July 1, 2018 are as follows:

<u>Plan</u>	<u>Contribution</u>
Non-Medicare	\$ 4,037
Medicare	2,050

PPACA Excise Tax: For purposes of estimating the Patient Protection and Affordable Care Act (PPACA) 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 PPACA. Beginning in 2022, a 40% excise tax is applied on the excess of the plan costs over the thresholds. The thresholds increase annually by chained CPI.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

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.

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:

General Employees		Public Safety	
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	7.60%	5	1.50%
10	5.40%	10	1.50%
15	3.30%	15	0.00%
20	2.00%	20	0.00%
25	1.00%	25	0.00%
30	0.00%	30	0.00%

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

General Employees		Public Safety	
Age	Rate	Age	Rate
25	0.02%	25	0.20%
30	0.03%	30	0.30%
35	0.06%	35	0.30%
40	0.10%	40	0.30%
45	0.15%	45	1.00%
50	0.19%	50	1.25%
55	0.24%	55	1.20%
60	0.28%	60	0.85%

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

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

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Retirement Rates:

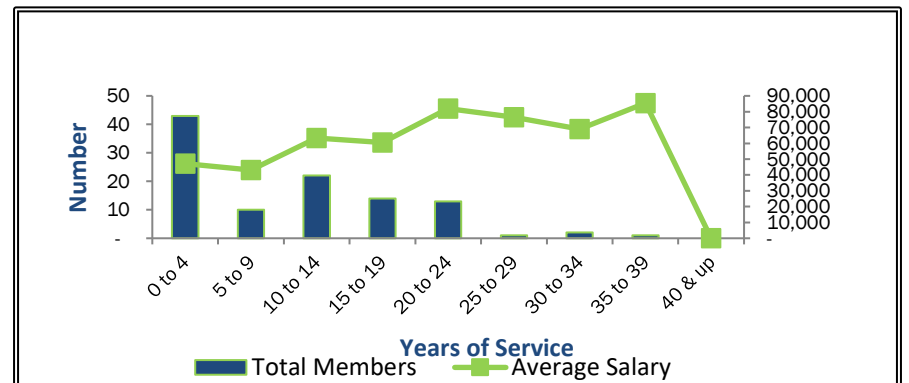
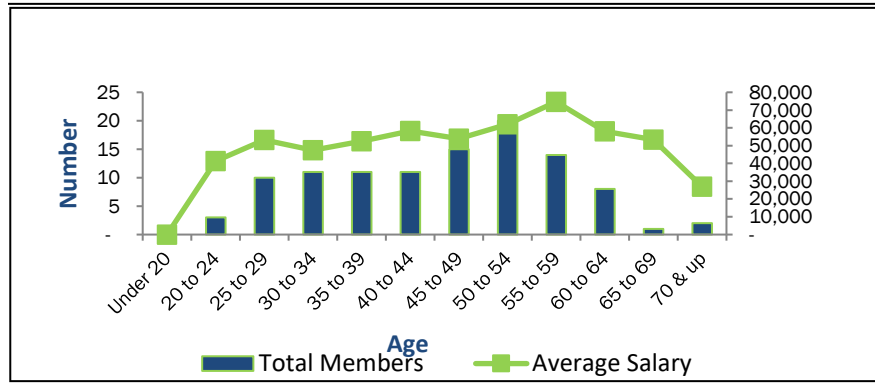
Retirement rates for General and Public Safety employees are as follows:

<u>Age</u>	<u>General Employees</u>		<u>Public Safety</u>
	Male	Female	All
45	0.00%	0.00%	1.00%
50	1.00%	1.50%	2.00%
55	2.00%	5.50%	15.00%
60	12.00%	5.00%	20.00%
62	30.00%	15.00%	25.00%
65	40.00%	15.00%	100.00%
69	30.00%	20.00%	
70	100.00%	100.00%	

SECTION 7 - PLAN MEMBER INFORMATION

TABLE 7.1 - ACTIVE MEMBERS BY AGE and YEARS OF SERVICE AS OF JULY 1, 2018

Age	Years of Service									Total	Total Salary	Average Salary	
	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	3	-	-	-	-	-	-	-	-	-	3	123,946	41,315
25 to 29	10	-	-	-	-	-	-	-	-	-	10	532,182	53,218
30 to 34	7	2	2	-	-	-	-	-	-	-	11	522,169	47,470
35 to 39	5	-	4	2	-	-	-	-	-	-	11	577,512	52,501
40 to 44	5	-	2	4	-	-	-	-	-	-	11	641,506	58,319
45 to 49	7	2	1	3	2	-	-	-	-	-	15	809,973	53,998
50 to 54	1	6	6	3	4	-	-	-	-	-	20	1,241,853	62,093
55 to 59	3	-	4	1	5	-	1	-	-	-	14	1,045,035	74,645
60 to 64	1	-	2	1	1	1	1	1	-	-	8	464,367	58,046
65 to 69	-	-	-	-	1	-	-	-	-	-	1	53,450	53,450
70 & up	1	-	1	-	-	-	-	-	-	-	2	53,786	26,893
Total	43	10	22	14	13	1	2	1	-	106	6,065,778	57,224	
Total Salary	2,027,562	431,285	1,394,026	847,470	1,065,427	76,496	138,061	85,452	-				
Average Salary	47,153	43,128	63,365	60,534	81,956	76,496	69,030	85,452	-				
Average Age:						45.9			Average Service:		9.9		



SECTION 7 - PLAN MEMBER INFORMATION

TABLE 7.2 - RETIRED MEMBERS, COVERED SPOUSES and SURVIVORS AS OF JULY 1, 2018

Age	Non-Medicare Plans			Medicare Plans		Total
	HMO Network Blue Family	HMO Network Blue Ind +1	PPO Blue Care Elect Preferred	Medex		
Under 40	0	0	0	0		0
40 to 44	1	1	0	0		2
45 to 49	0	0	0	0		0
50 to 54	1	1	0	0		2
55 to 59	3	1	1	0		5
60 to 64	6	2	0	3		11
65 to 69	0	0	0	6		6
70 to 74	0	0	0	8		8
75 to 79	0	0	0	6		6
80 to 84	0	0	0	2		2
85 to 89	0	0	0	1		1
90+	0	0	0	1		1
Total	11	5	1	27		44
Covered Spouses	2	5	0	11		18
Average Age:						67.0

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.

Discount Rate – Single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the sum of:

- (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.*

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.

SECTION 8 - GLOSSARY OF TERMS

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.

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.

Long-Term Expected Rate of Return – Long-term expected rate of return on OPEB plan investments expected to be used to finance the payment of benefits, net of investment expenses.

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

Municipal Bond Rate – Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.

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.

SECTION 8 - GLOSSARY OF TERMS

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.

SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	Town	Water	Sewer	Total
Summary of Member Data Used in Valuation				
Active Members	103	1	2	106
Average Age	45.7	43.8	59.1	45.9
Average Service	10.0	16.2	5.2	9.9
Retired Members and Survivors	44	0	0	44
Average Age	67.0	0.0	0.0	67.0
Covered Spouses	18	0	0	18
Expected Benefit Payments	294,837	3	1,999	296,839
OPEB Trust contributions	100,000	10,752	13,774	124,526
Total Employer Contributions	394,837	10,755	15,773	421,365
Beginning Net OPEB Liability - June 30, 2018				
Total OPEB Liability	11,714,689	101,676	71,871	11,888,236
Fiduciary Net Position	716,093	0	8,476	724,569
Net OPEB Liability	10,998,596	101,676	63,395	11,163,667
Ending Net OPEB Liability - June 30, 2019				
Total OPEB Liability	13,245,403	122,141	79,643	13,447,187
Fiduciary Net Position	851,395	11,377	32,183	894,955
Net OPEB Liability	12,394,008	110,764	47,460	12,552,232
Total Deferred Outflows of Resources				
Differences between Expected and Actual Experience	0	0	0	0
Changes in Assumptions	1,187,541	10,307	7,286	1,205,134
Differences between Expected and Actual Earnings on OPEB Plan Investments	17,856	0	211	18,067
Total Deferred Outflows of Resources	1,205,397	10,307	7,497	1,223,201
Total Deferred Inflows of Resources				
Differences between Expected and Actual Experience	469,809	4,078	2,882	476,769
Changes in Assumptions	503,103	4,367	3,087	510,556
Differences between Expected and Actual Earnings on OPEB Plan Investments	0	0	0	0
Total Deferred Inflows of Resources	972,912	8,444	5,969	987,325
Total OPEB Expense	987,520	12,872	(4,868)	995,524

SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	Town	Water	Sewer	Total
Sensitivity of the Net OPEB Liability to Changes in the Discount Rate				
Current Discount Rate: 3.68%	12,394,008	110,764	47,460	12,552,232
1% Decrease in the Discount Rate: 2.68%	15,261,652	136,392	58,441	15,456,485
1% Increase in the Discount Rate: 4.68%	10,201,774	91,172	39,065	10,332,012
Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates				
Current Trend Rates	12,394,008	110,764	47,460	12,552,232
1% Decrease in Trend Rates	9,773,524	87,345	37,425	9,898,294
1% Increase in Trend Rates	16,174,974	144,554	61,938	16,381,466
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in OPEB Expense				
2020	21,637	173	142	21,952
2021	21,637	173	142	21,952
2022	21,637	173	142	21,952
2023	18,730	150	123	19,003
2024	16,458	132	108	16,698
Thereafter	132,388	1,061	870	134,319
Ending Total OPEB Liability - June 30, 2019				
Total OPEB Liability, beginning of year	11,714,689	101,676	71,871	11,888,236
Service cost	544,289	2,972	4,327	551,588
Interest	472,351	4,081	2,933	479,365
Changes of benefit terms	0	0	0	0
Differences between expected and actual	(533,511)	(2,085)	(4,321)	(539,917)
Changes of assumptions	1,342,422	15,500	6,832	1,364,754
Benefit payments	(294,837)	(3)	(1,999)	(296,839)
Net change in total OPEB liability	1,530,714	20,465	7,772	1,558,951
Total OPEB Liability, end of year	13,245,403	122,141	79,643	13,447,187

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 3.5%, based on the Bond Buyer 20-Bond GO Index published on June 27, 2019. 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 13 periods of projected future benefit payments and the 3.5% municipal bond rate was applied to all periods thereafter to determine the total OPEB liability. Projected benefit payments are discounted to their actuarial present value using a single discount rate of 3.68%.

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) * 11.11%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2019	6,065,778	-	6,065,778	296,839	124,526	-	421,365
2020	5,727,182	550,898	6,278,080	313,897	235,616	61,191	488,322
2021	5,523,415	974,398	6,497,813	330,363	235,616	108,231	457,748
2022	5,337,641	1,387,595	6,725,236	348,753	235,616	154,127	430,242
2023	5,145,708	1,814,911	6,960,619	378,161	235,616	201,591	412,186
2024	4,937,347	2,266,894	7,204,241	389,802	235,616	251,796	373,622
2025	4,734,507	2,721,882	7,456,389	441,425	235,616	302,333	374,708
2026	4,510,840	3,206,523	7,717,363	475,809	235,616	356,165	355,260
2027	4,315,731	3,671,740	7,987,471	503,985	235,616	407,839	331,762
2028	4,098,170	4,168,862	8,267,032	540,660	235,616	463,057	313,219
2029	3,845,442	4,710,936	8,556,378	576,588	220,000	523,268	273,320
2030	3,627,743	5,228,108	8,855,851	618,878	220,000	580,713	258,165
2031	3,429,433	5,736,373	9,165,806	661,798	220,000	637,168	244,630
2032	3,226,543	6,260,066	9,486,609	689,652	220,000	695,338	214,314
2033	3,057,514	6,761,126	9,818,640	718,320	220,000	750,993	187,327
2034	2,914,411	7,247,881	10,162,292	748,313	220,000	805,059	163,254
2035	2,786,428	7,731,544	10,517,972	767,639	220,000	858,782	128,857
2036	2,656,372	8,229,729	10,886,101	791,227	220,000	914,118	97,109
2037	2,559,195	8,707,920	11,267,115	839,589	220,000	967,233	92,356
2038	2,451,265	9,210,199	11,661,464	869,303	220,000	1,023,024	66,279
2039	2,355,589	9,714,026	12,069,615	937,609	220,000	1,078,987	78,622
2040	2,259,805	10,232,247	12,492,052	915,935	220,000	1,136,548	-
2041	2,159,816	10,769,458	12,929,274	984,074	220,000	1,196,219	7,855
2042	2,043,698	11,338,101	13,381,799	1,002,806	220,000	1,259,381	-
2043	1,913,835	11,936,327	13,850,162	1,074,939	220,000	1,325,829	-
2044	1,786,500	12,548,418	14,334,918	1,098,612	220,000	1,393,817	-
2045	1,660,396	13,176,244	14,836,640	1,131,991	220,000	1,463,553	-
2046	1,520,393	13,835,529	15,355,922	1,194,228	220,000	1,536,783	-
2047	1,382,248	14,511,131	15,893,379	1,274,384	220,000	1,611,826	-
2048	1,239,060	15,210,587	16,449,647	1,329,018	220,000	1,689,518	-
2049	1,054,053	15,971,332	17,025,385	1,389,920	220,000	1,774,018	-
2050	898,573	16,722,700	17,621,273	1,458,773	220,000	1,857,476	-
2051	735,629	17,502,389	18,238,018	1,514,349	220,000	1,944,080	-
2052	608,297	18,268,052	18,876,349	1,544,377	220,000	2,029,126	-

Town of Charlton, Massachusetts Postemployment Benefits Other Than Pensions
 Financial Reporting and Disclosures Under GASB 74 and GASB 75 as of June 30, 2019

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) * 11.11%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2053	479,733	19,057,288	19,537,021	1,548,479	220,000	2,116,790	-
2054	356,152	19,864,665	20,220,817	1,558,512	220,000	2,206,470	-
2055	272,858	20,655,688	20,928,546	1,582,175	220,000	2,294,333	-
2056	203,719	21,457,326	21,661,045	1,489,889	220,000	2,383,375	-
2057	126,966	22,292,216	22,419,182	1,502,371	220,000	2,476,110	-
2058	92,476	23,111,377	23,203,853	1,431,011	220,000	2,567,099	-
2059	43,933	23,972,055	24,015,988	1,399,185	220,000	2,662,699	-
2060	32,503	24,824,045	24,856,548	1,392,582	220,000	2,757,334	-
2061	11,831	25,714,696	25,726,527	1,344,959	220,000	2,856,263	-
2062	5,693	26,621,262	26,626,955	1,345,760	220,000	2,956,960	-
2063	4,185	27,554,713	27,558,898	1,336,458	220,000	3,060,643	-
2064	2,980	28,520,479	28,523,459	1,340,169	220,000	3,167,916	-
2065	2,122	29,519,658	29,521,780	1,346,240	220,000	3,278,899	-
2066	205	30,554,837	30,555,042	1,354,123	220,000	3,393,882	-
2067	144	31,624,324	31,624,468	1,351,071	220,000	3,512,675	-
2068	-	32,731,324	32,731,324	1,360,191	220,000	3,635,636	-
2069	-	33,876,920	33,876,920	1,350,683	-	3,762,883	-
2070	-	35,062,612	35,062,612	1,343,936	-	3,894,584	-
2071	-	36,289,803	36,289,803	1,343,136	-	4,030,894	-
2072	-	37,559,946	37,559,946	1,322,165	-	4,171,975	-
2073	-	38,874,544	38,874,544	1,316,382	-	4,317,995	-
2074	-	40,235,153	40,235,153	1,287,496	-	4,469,124	-
2075	-	41,643,383	41,643,383	1,258,782	-	4,625,544	-
2076	-	43,100,901	43,100,901	1,241,275	-	4,787,438	-
2077	-	44,609,433	44,609,433	1,195,916	-	4,954,998	-
2078	-	46,170,763	46,170,763	1,167,317	-	5,128,423	-
2079	-	47,786,740	47,786,740	1,118,854	-	5,307,918	-
2080	-	49,459,276	49,459,276	1,066,630	-	5,493,695	-
2081	-	51,190,351	51,190,351	1,021,681	-	5,685,974	-
2082	-	52,982,013	52,982,013	958,234	-	5,884,983	-
2083	-	54,836,383	54,836,383	906,234	-	6,090,958	-
2084	-	56,755,656	56,755,656	837,969	-	6,304,141	-
2085	-	58,742,104	58,742,104	767,558	-	6,524,786	-
2086	-	60,798,078	60,798,078	698,499	-	6,753,154	-

Town of Charlton, Massachusetts Postemployment Benefits Other Than Pensions
 Financial Reporting and Disclosures Under GASB 74 and GASB 75 as of June 30, 2019

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)
2019	724,569	421,365	296,839	-	45,860	894,955
2020	894,955	488,322	313,897	-	73,663	1,143,043
2021	1,143,043	457,748	330,363	-	90,505	1,360,933
2022	1,360,933	430,242	348,753	-	105,126	1,547,548
2023	1,547,548	412,186	378,161	-	117,342	1,698,915
2024	1,698,915	373,622	389,802	-	126,812	1,809,547
2025	1,809,547	374,708	441,425	-	133,214	1,876,044
2026	1,876,044	355,260	475,809	-	136,183	1,891,678
2027	1,891,678	331,762	503,985	-	135,417	1,854,872
2028	1,854,872	313,219	540,660	-	130,586	1,758,017
2029	1,758,017	273,320	576,588	-	120,479	1,575,228
2030	1,575,228	258,165	618,878	-	104,615	1,319,130
2031	1,319,130	244,630	661,798	-	83,291	985,253
2032	985,253	214,314	689,652	-	56,069	565,984
2033	565,984	187,327	718,320	-	22,537	57,528
2034	57,528	163,254	748,313	-	-	-
2035	-	128,857	767,639	-	-	-
2036	-	97,109	791,227	-	-	-
2037	-	92,356	839,589	-	-	-
2038	-	66,279	869,303	-	-	-
2039	-	78,622	937,609	-	-	-
2040	-	-	915,935	-	-	-
2041	-	7,855	984,074	-	-	-
2042	-	-	1,002,806	-	-	-
2043	-	-	1,074,939	-	-	-
2044	-	-	1,098,612	-	-	-
2045	-	-	1,131,991	-	-	-
2046	-	-	1,194,228	-	-	-
2047	-	-	1,274,384	-	-	-
2048	-	-	1,329,018	-	-	-
2049	-	-	1,389,920	-	-	-
2050	-	-	1,458,773	-	-	-
2051	-	-	1,514,349	-	-	-
2052	-	-	1,544,377	-	-	-

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)
2053	-	-	1,548,479	-	-	-
2054	-	-	1,558,512	-	-	-
2055	-	-	1,582,175	-	-	-
2056	-	-	1,489,889	-	-	-
2057	-	-	1,502,371	-	-	-
2058	-	-	1,431,011	-	-	-
2059	-	-	1,399,185	-	-	-
2060	-	-	1,392,582	-	-	-
2061	-	-	1,344,959	-	-	-
2062	-	-	1,345,760	-	-	-
2063	-	-	1,336,458	-	-	-
2064	-	-	1,340,169	-	-	-
2065	-	-	1,346,240	-	-	-
2066	-	-	1,354,123	-	-	-
2067	-	-	1,351,071	-	-	-
2068	-	-	1,360,191	-	-	-
2069	-	-	1,350,683	-	-	-
2070	-	-	1,343,936	-	-	-
2071	-	-	1,343,136	-	-	-
2072	-	-	1,322,165	-	-	-
2073	-	-	1,316,382	-	-	-
2074	-	-	1,287,496	-	-	-
2075	-	-	1,258,782	-	-	-
2076	-	-	1,241,275	-	-	-
2077	-	-	1,195,916	-	-	-
2078	-	-	1,167,317	-	-	-
2079	-	-	1,118,854	-	-	-
2080	-	-	1,066,630	-	-	-
2081	-	-	1,021,681	-	-	-
2082	-	-	958,234	-	-	-
2083	-	-	906,234	-	-	-
2084	-	-	837,969	-	-	-
2085	-	-	767,558	-	-	-
2086	-	-	698,499	-	-	-

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)
2087	-	-	621,982	-	-	-
2088	-	-	554,923	-	-	-
2089	-	-	480,351	-	-	-
2090	-	-	416,111	-	-	-
2091	-	-	350,282	-	-	-
2092	-	-	294,268	-	-	-
2093	-	-	241,824	-	-	-
2094	-	-	197,398	-	-	-
2095	-	-	158,492	-	-	-
2096	-	-	125,996	-	-	-
2097	-	-	98,780	-	-	-
2098	-	-	76,356	-	-	-
2099	-	-	58,387	-	-	-
2100	-	-	43,805	-	-	-
2101	-	-	32,567	-	-	-
2102	-	-	23,653	-	-	-
2103	-	-	16,993	-	-	-
2104	-	-	11,928	-	-	-
2105	-	-	8,266	-	-	-
2106	-	-	5,614	-	-	-
2107	-	-	3,754	-	-	-
2108	-	-	2,474	-	-	-
2109	-	-	1,607	-	-	-
2110	-	-	1,030	-	-	-
2111	-	-	650	-	-	-
2112	-	-	398	-	-	-
2113	-	-	245	-	-	-
2114	-	-	148	-	-	-
2115	-	-	83	-	-	-
2116	-	-	51	-	-	-
2117	-	-	22	-	-	-
2118	-	-	13	-	-	-
2119	-	-	4	-	-	-
2120	-	-	2	-	-	-
2121	-	-	-	-	-	-

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)
2020	894,955	313,897	313,897	-	302,749	-	308,281
2021	1,143,043	330,363	330,363	-	296,400	-	312,947
2022	1,360,933	348,753	348,753	-	291,070	-	318,652
2023	1,547,548	378,161	378,161	-	293,594	-	333,269
2024	1,698,915	389,802	389,802	-	281,518	-	331,346
2025	1,809,547	441,425	441,425	-	296,558	-	361,921
2026	1,876,044	475,809	475,809	-	297,357	-	376,278
2027	1,891,678	503,985	503,985	-	292,991	-	384,427
2028	1,854,872	540,660	540,660	-	292,383	-	397,777
2029	1,758,017	576,588	576,588	-	290,058	-	409,167
2030	1,575,228	618,878	618,878	-	289,612	-	423,603
2031	1,319,130	661,798	661,798	-	288,090	-	436,917
2032	985,253	689,652	689,652	-	279,270	-	439,160
2033	565,984	718,320	-	718,320	-	451,464	441,195
2034	57,528	748,313	-	748,313	-	454,410	443,318
2035	-	767,639	-	767,639	-	450,383	438,640
2036	-	791,227	-	791,227	-	448,524	436,086
2037	-	839,589	-	839,589	-	459,844	446,331
2038	-	869,303	-	869,303	-	460,018	445,740
2039	-	937,609	-	937,609	-	479,386	463,715
2040	-	915,935	-	915,935	-	452,468	436,932
2041	-	984,074	-	984,074	-	469,689	452,789
2042	-	1,002,806	-	1,002,806	-	462,444	445,046
2043	-	1,074,939	-	1,074,939	-	478,945	460,141
2044	-	1,098,612	-	1,098,612	-	472,940	453,598
2045	-	1,131,991	-	1,131,991	-	470,830	450,805
2046	-	1,194,228	-	1,194,228	-	479,919	458,725
2047	-	1,274,384	-	1,274,384	-	494,813	472,156
2048	-	1,329,018	-	1,329,018	-	498,575	474,936
2049	-	1,389,920	-	1,389,920	-	503,790	479,086
2050	-	1,458,773	-	1,458,773	-	510,866	484,988
2051	-	1,514,349	-	1,514,349	-	512,395	485,611
2052	-	1,544,377	-	1,544,377	-	504,884	477,678
2053	-	1,548,479	-	1,548,479	-	489,107	461,963

Town of Charlton, Massachusetts Postemployment Benefits Other Than Pensions
 Financial Reporting and Disclosures Under GASB 74 and GASB 75 as of June 30, 2019

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)
2054	-	1,558,512	-	1,558,512	-	475,629	448,468
2055	-	1,582,175	-	1,582,175	-	466,522	439,132
2056	-	1,489,889	-	1,489,889	-	424,455	398,854
2057	-	1,502,371	-	1,502,371	-	413,537	387,933
2058	-	1,431,011	-	1,431,011	-	380,574	356,404
2059	-	1,399,185	-	1,399,185	-	359,527	336,119
2060	-	1,392,582	-	1,392,582	-	345,730	322,670
2061	-	1,344,959	-	1,344,959	-	322,615	300,584
2062	-	1,345,760	-	1,345,760	-	311,891	290,098
2063	-	1,336,458	-	1,336,458	-	299,261	277,876
2064	-	1,340,169	-	1,340,169	-	289,944	268,767
2065	-	1,346,240	-	1,346,240	-	281,408	260,410
2066	-	1,354,123	-	1,354,123	-	273,484	252,646
2067	-	1,351,071	-	1,351,071	-	263,640	243,138
2068	-	1,360,191	-	1,360,191	-	256,444	236,099
2069	-	1,350,683	-	1,350,683	-	246,040	226,134
2070	-	1,343,936	-	1,343,936	-	236,533	217,026
2071	-	1,343,136	-	1,343,136	-	228,398	209,205
2072	-	1,322,165	-	1,322,165	-	217,229	198,636
2073	-	1,316,382	-	1,316,382	-	208,965	190,754
2074	-	1,287,496	-	1,287,496	-	197,468	179,952
2075	-	1,258,782	-	1,258,782	-	186,535	169,699
2076	-	1,241,275	-	1,241,275	-	177,721	161,405
2077	-	1,195,916	-	1,195,916	-	165,436	149,992
2078	-	1,167,317	-	1,167,317	-	156,019	141,214
2079	-	1,118,854	-	1,118,854	-	144,485	130,551
2080	-	1,066,630	-	1,066,630	-	133,083	120,044
2081	-	1,021,681	-	1,021,681	-	123,164	110,908
2082	-	958,234	-	958,234	-	111,609	100,332
2083	-	906,234	-	906,234	-	101,983	91,522
2084	-	837,969	-	837,969	-	91,112	81,627
2085	-	767,558	-	767,558	-	80,634	72,117
2086	-	698,499	-	698,499	-	70,898	63,301
2087	-	621,982	-	621,982	-	60,996	54,368

Town of Charlton, Massachusetts Postemployment Benefits Other Than Pensions
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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)
2088	-	554,923	-	554,923	-	52,580	46,786
2089	-	480,351	-	480,351	-	43,975	39,063
2090	-	416,111	-	416,111	-	36,806	32,639
2091	-	350,282	-	350,282	-	29,935	26,501
2092	-	294,268	-	294,268	-	24,298	21,474
2093	-	241,824	-	241,824	-	19,292	17,021
2094	-	197,398	-	197,398	-	15,216	13,401
2095	-	158,492	-	158,492	-	11,804	10,378
2096	-	125,996	-	125,996	-	9,066	7,958
2097	-	98,780	-	98,780	-	6,867	6,018
2098	-	76,356	-	76,356	-	5,129	4,487
2099	-	58,387	-	58,387	-	3,789	3,309
2100	-	43,805	-	43,805	-	2,747	2,395
2101	-	32,567	-	32,567	-	1,973	1,717
2102	-	23,653	-	23,653	-	1,385	1,203
2103	-	16,993	-	16,993	-	961	834
2104	-	11,928	-	11,928	-	652	564
2105	-	8,266	-	8,266	-	436	377
2106	-	5,614	-	5,614	-	286	247
2107	-	3,754	-	3,754	-	185	159
2108	-	2,474	-	2,474	-	118	101
2109	-	1,607	-	1,607	-	74	63
2110	-	1,030	-	1,030	-	46	39
2111	-	650	-	650	-	28	24
2112	-	398	-	398	-	17	14
2113	-	245	-	245	-	10	8
2114	-	148	-	148	-	6	5
2115	-	83	-	83	-	3	3
2116	-	51	-	51	-	2	2
2117	-	22	-	22	-	1	1
2118	-	13	-	13	-	-	-
2119	-	4	-	4	-	-	-
2120	-	2	-	2	-	-	-
2121	-	-	-	-	-	-	-

Town of Charlton, Massachusetts Postemployment Benefits Other Than Pensions
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APPENDIX B - SCHEDULE OF DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES

Year	Differences between Expected and Actual Experience	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	\$ -		-	-	-	-	-	-	-	-	-	-
2019	\$ (539,917)	8.55	-	(63,148)	(63,148)	(63,148)	(63,148)	(63,148)	(63,148)	(63,148)	(63,148)	(34,733)
Net Increase (Decrease) in OPEB Expense			-	(63,148)	(63,148)	(63,148)	(63,148)	(63,148)	(63,148)	(63,148)	(63,148)	(34,733)

Year	Changes of Assumptions	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	\$ (670,104)	8.40	(79,774)	(79,774)	(79,774)	(79,774)	(79,774)	(79,774)	(79,774)	(79,774)	(31,912)	-
2019	\$ 1,364,754	8.55	-	159,620	159,620	159,620	159,620	159,620	159,620	159,620	159,620	87,794
Net Increase (Decrease) in OPEB Expense			(79,774)	79,846	79,846	79,846	79,846	79,846	79,846	79,846	127,708	87,794

Year	Differences between Projected and Actual Earnings on OPEB Plan Investments	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
2018	\$ 14,750	5	2,950	2,950	2,950	2,950	2,950	-	-	-	-	-
2019	\$ 11,521	5	-	2,304	2,304	2,304	2,304	2,305	-	-	-	-
Net Increase (Decrease) in OPEB Expense			2,950	5,254	5,254	5,254	5,254	2,305	-	-	-	-