



**TOWN OF BEDFORD,
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

October, 2019



October 21, 2019

Mr. Victor Garofalo
Finance Director, Treasurer/Collector
Town of Bedford, Massachusetts
Town Hall, 10 Mudge Way
Bedford, MA 01730-2144

Dear Victor:

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 Bedford, 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 Bedford, Massachusetts as well as health plan rates provided by the Town. 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 7.5%, 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 Pension Reserves Investment Management Board.

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Mr. Victor Garofalo

October 21, 2019

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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 Middlesex County and Massachusetts Teachers Retirement Systems' 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 Bedford, 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.

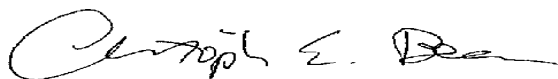
Respectfully submitted,



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EXECUTIVE SUMMARY

This report presents the results of the actuarial valuation of the Town of Bedford, 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 Bedford, 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 Bedford, 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 Bedford, 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	646	683	(5.4%)
Inactive Plan Members	300	266	12.8%
Total Plan Members	946	949	(0.3%)
 Covered Payroll	 47,371,039	 44,844,537	 5.6%
Valuation Results (GASB 74)			
Discount rate	7.50%	7.50%	
Total OPEB Liability	\$59,264,810	\$54,917,490	7.9%
Fiduciary Net Position	\$9,451,680	\$8,242,295	14.7%
Net OPEB Liability	\$49,813,130	\$46,675,195	6.7%
Funded Ratio	15.9%	15.0%	6.0%
Valuation Results (GASB 75)			
OPEB Expense	\$5,097,395	\$4,646,219	9.7%
Deferred Outflows	\$5,737,264	\$0	
Deferred Inflows	\$5,170,922	\$131,720	

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 \$5,921,000, primarily attributable to lower than expected medical premium rates.

Changes of Assumptions

The health cost trend rates, inflation assumption, and the teacher mortality table and improvement scale 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 valuation. 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 \$59,264,810. The Total OPEB Liability as of the prior measurement date, June 30, 2018, was \$54,917,490. 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 \$9,451,680. The Fiduciary Net Position as of the prior measurement date, June 30, 2018, was \$8,242,295. During the plan years ended 2019 and 2018, the actual rates of return were 5.60% and 9.45%, 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 contributes a level percent of the Town's annual budget, beginning with \$593,990 for the 2018 fiscal year, increasing 3.5% annually thereafter plus an additional \$100,000 through fiscal 2023. After 2023, increasing 3.5% annually at which time the Town will revisit and possibly amend the funding policy regarding future contributions.

Discount Rate

As of the June 30, 2019 measurement date, the OPEB plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

OPEB Expense

The OPEB Expense as of the current measurement date, June 30, 2019, is \$5,097,395. Benefit changes are recognized immediately and experience and assumption changes developed in this valuation are recognized over 7.89 years. Investment gains and losses are recognized over 5 years. The OPEB Expense for the prior measurement period was \$4,646,219. 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 has established an irrevocable trust pursuant to Section 20 of Chapter 32B of the Massachusetts General Laws 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		
Global Equity	\$4,149,287	\$3,511,216
Core Fixed Income	1,285,428	1,055,014
Value-Added Fixed Income	746,683	659,384
Private Equity	1,068,040	890,168
Real Estate	888,458	741,807
Timberland	368,616	280,238
Portfolio Completion Strategies and Overlay	945,168	1,104,468
Total Market Value of Assets	\$9,451,680	\$8,242,295
Asset Activity		
Market value, beginning of year	\$8,242,295	\$6,940,819
Employer Premiums	1,942,743	1,972,967
OPEB Trust Contributions	714,779	593,990
Benefit Payments	(1,942,743)	(1,972,967)
Administrative Expenses	-	-
Investment Return	494,606	707,486
Market value, end of year	\$9,451,680	\$8,242,295
Money-Weighted Rate of Return	5.60%	9.45%
(Gain) / Loss on OPEB Plan Investments		
Projected earnings	\$662,574	\$542,836
Actual earnings	494,606	707,486
(Gain) / Loss on OPEB plan investments	\$167,968	(\$164,650)

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	\$33,140,696	
b. Retirees, Covered Spouses and Survivors	21,776,794	
c. Total OPEB Liability at 7.5% (a. + b.)		\$54,917,490
2. Service Cost		\$1,522,152
3. Expected Benefit Payments		
a. Current retirees	(\$1,804,512)	
b. Future retirees	(138,231)	
c. Total (a. + b.)		(\$1,942,743)
4. Interest [7.5% x (1.c. + 2. + .5 x 3.c)]		\$4,160,120
5. Changes of benefit terms		\$0
6. Differences between expected and actual experience		(\$5,921,419)
7. Changes of assumptions or other inputs		\$6,529,210
8. Total OPEB Liability, end of year (1.c. + 2. + 3.c. + 4. + 5. + 6. + 7.)		
a. Actives	\$30,992,573	
b. Retirees, Covered Spouses and Survivors	28,272,237	
c. Total OPEB Liability at 7.5% (a. + b.)		\$59,264,810

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.3 - Development of Actuarially Determined Employer Contributions

The Town contributes a level percent of the Town's annual budget, beginning with \$593,990 for the 2018 fiscal year, increasing 3.5% annually thereafter plus an additional \$100,000 through fiscal 2023. After 2023, increasing 3.5% annually at which time the Town will revisit and possibly amend the funding policy regarding future contributions.

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

Fiscal Year Ending	June 30, 2019
Discount Rate	7.50%
1. Normal Cost	\$1,522,152
2. Unfunded Actuarial Accrued Liability	
a. Actuarial Accrued Liability	\$54,917,490
b. Actuarial Value of Plan Assets	\$8,242,295
c. Unfunded Actuarial Accrued Liability	\$46,675,195
3. Amortization of Unfunded Actuarial Accrued Liability	
a. Unfunded Actuarial Accrued Liability	\$46,675,195
b. Amortization Period in years	30
c. Payroll Growth Rate	3.5%
d. Amortization Factor	18.26
e. Amortization Amount (3.a. / 3.d.)	\$2,556,144
4. Interest on 1. and 3.e.	\$305,872
5. Actuarially Determined Employer Contribution (1. + 3.e. + 4.)	\$4,384,168
6. Actual Employer Contribution to OPEB Trust	\$714,779
7. Expected Benefit Payments	\$1,942,743
8. Total Contribution (6. + 7.)	\$2,657,522

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.1 - Plan Description

Plan administration:

The Town of Bedford, 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	300
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	646
	<u>946</u>

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 Group Insurance Commission (GIC), and the full cost of benefits is shared between the Town and retirees.

Contributions:

The Town contributes a level percent of the Town's annual budget, beginning with \$593,990 for the 2018 fiscal year, increasing 3.5% annually thereafter plus an additional \$100,000 through fiscal 2023. After 2023, increasing 3.5% annually at which time the Town will revisit and possibly amend the funding policy regarding future contributions.

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	\$ 59,264,810
Fiduciary net position	(9,451,680)
Discount rate	<u>\$ 49,813,130</u>

Fiduciary net position as a percentage of the total OPEB liability	15.95%
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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	7.5%, 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 BB2D.
Post-Retirement Mortality - General and Public Safety employees:	RP-2000 Healthy Annuitant Mortality Table, base year 2009, projected with generational mortality improvement using scale BB2D.
Pre-Retirement Mortality - Teachers:	RP-2014 White Collar Mortality Table, base year 2014, projected with generational mortality improvement using scale MP-2016.
Post-Retirement Mortality - Teachers:	RP-2014 White Collar Mortality Table, base year 2014, projected with generational mortality improvement using scale MP-2016.

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>
Global Equity	39%	4.75%
Core Fixed Income	15%	1.05%
Value-Added Fixed Income	8%	4.58%
Private Equity	13%	8.15%
Real Estate	10%	3.43%
Timberland	4%	4.00%
Portfolio Completion Strategies	11%	3.76%
Total	100%	

¹ provided by the Pension Reserves Investment Management Board.

Discount rate:

The discount rate used to measure the total OPEB liability was 7.5%. 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 available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments 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 7.5 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (6.5 percent) or 1-percentage point higher (8.5 percent) than the current rate:

	1% Decrease (6.5%)	Discount Rate (7.5%)	1% Increase (8.5%)
Net OPEB Liability	\$ 59,451,358	\$ 49,813,130	\$ 42,111,976

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	\$ 41,071,928	\$ 49,813,130	\$ 60,975,656

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	\$ 1,522,152	\$ 1,463,608	\$ 1,407,315
Interest	4,160,120	3,910,920	3,669,438
Changes of benefit terms	-	(152,543)	-
Differences between expected and actual experience	(5,921,419)	-	-
Changes of assumptions	6,529,210	-	-
Benefit payments	(1,942,743)	(1,972,967)	(1,853,604)
Net change in total OPEB liability	\$ 4,347,320	\$ 3,249,018	\$ 3,223,149
Total OPEB liability—beginning	\$ 54,917,490	\$ 51,668,472	
Total OPEB liability—ending (a)	\$ 59,264,810	\$ 54,917,490	\$ 51,668,472
Plan fiduciary net position			
Contributions—employer	\$ 2,657,522	\$ 2,566,957	\$ 2,555,596
Net investment income	494,606	707,486	764,801
Benefit payments	(1,942,743)	(1,972,967)	(1,853,604)
Administrative expenses	-	-	-
Other	-	-	-
Net change in plan fiduciary net position	\$ 1,209,385	\$ 1,301,476	\$ 1,466,793
Plan fiduciary net position—beginning	\$ 8,242,295	\$ 6,940,819	\$ 5,474,026
Plan fiduciary net position—ending (b)	\$ 9,451,680	\$ 8,242,295	\$ 6,940,819
Net OPEB liability—ending (a) – (b)	\$ 49,813,130	\$ 46,675,195	\$ 44,727,653
Plan fiduciary net position as a percentage of the total OPEB liability	15.95%	15.01%	13.43%
Covered payroll	\$ 47,371,039	\$ 44,844,537	\$ 41,957,222
Net OPEB liability as a percentage of covered payroll	105.16%	104.08%	106.60%
Discount rate:	7.50%	7.50%	7.50%

Changes of benefit terms:

None.

Changes of assumptions:

The health cost trend rates, inflation assumption, and the teacher mortality table and improvement scale have been updated since the prior measurement.

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

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	5.60%	9.45%	12.76%

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	\$ 8,242,295	12	1.00	\$ 8,703,708
Monthly net external cash flows:				
July	-	11	0.92	-
August	714,779	10	0.83	747,972
September	-	9	0.75	-
October	-	8	0.67	-
November	-	7	0.58	-
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, 2019				\$ 9,451,680
			Money-weighted rate of return:	5.60%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	2019	2018	2017
Actuarially determined contribution	\$ 4,384,168	\$ 4,059,533	\$ 5,056,301
Contributions in relation to the actuarially determined contribution	2,657,522	2,566,957	2,555,596
Contribution deficiency (excess)	\$ 1,726,646	\$ 1,492,576	\$ 2,500,705
Covered payroll	\$ 47,371,039	\$ 44,844,537	\$ 41,957,222
Contributions as a percentage of covered payroll	5.61%	5.72%	6.09%
Discount rate	7.50%	7.50%	5.50%
Inflation	2.60%	3.00%	3.00%

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
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	\$ -	\$ 5,921,419	\$ (750,497)	\$ -	\$ 5,170,922
Total				<u>\$ -</u>	<u>\$ 5,170,922</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	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ 6,529,210	\$ -	\$ 827,530	\$ 5,701,680	\$ -
Total				<u>\$ 5,701,680</u>	<u>\$ -</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	\$ -	\$ 164,650	\$ (65,860)	\$ -	\$ 98,790
2019	\$ 167,968	\$ -	\$ 33,594	\$ 134,374	\$ -
Total				\$ 134,374	\$ 98,790
Net				\$ 35,584	\$ -

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	\$	77,697
2021	\$	77,697
2022	\$	77,696
2023	\$	110,626
2024	\$	77,033
Thereafter		145,593

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	\$ 1,522,152
2. Interest on the total OPEB liability	
a. Total OPEB liability, beginning of year	54,917,490
b. Service cost, beginning of year	1,522,152
c. Benefit payments	<u>(1,942,743)</u>
d. Interest on total OPEB liability = 7.5% times (a. + b. + .5 times c.)	4,160,120
3. Differences between expected and actual experience	(750,497)
4. Changes of benefit terms	-
5. Changes of assumptions	827,530
6. Projected earnings on OPEB plan investments	
a. Plan fiduciary net position, beginning of year	8,242,295
b. Contributions - Employer	2,657,522
c. Benefit payments	<u>(1,942,743)</u>
d. Administrative expenses and other	<u>-</u>
e. Total projected earnings	(662,574)
7. Differences between projected and actual earnings on OPEB plan investments	664
8. OPEB plan administrative expenses	-
9. Other changes in fiduciary net position	-
10. Total OPEB Expense	<u>\$ 5,097,395</u>

Town of Bedford, 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 Middlesex County and Massachusetts Teachers Retirement Systems.

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>
FCHP Direct	\$600.68	\$1,514.23
FCHP Select	\$811.79	\$1,971.89
HP Independence	\$889.65	\$2,171.49
HP Primary Choice	\$645.80	\$1,646.48
Health New England	\$570.81	\$1,356.54
Allways Health Partners Complete	\$646.93	\$1,677.69
THP Navigator	\$747.76	\$1,822.08
THP Spirit	\$565.91	\$1,358.94
UniCare State Indemnity Plan/Basic with CIC	\$1,086.10	\$2,406.59
UniCare State Indemnity Plan/Basic without CIC	\$1,034.54	\$2,289.19
UniCare State Indemnity Plan/Community Choice	\$517.51	\$1,276.96
UniCare State Indemnity Plan/PLUS	\$696.10	\$1,654.60

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Medical Premiums (continued):

Medicare Plans - July 1, 2019

HP Medicare Enhanced	\$391.12
Health NE Med Plus	\$391.81
Tufts Complement	\$371.50
Tufts Preferred*	\$322.43
UniCare OME w/CIC	\$386.93
UniCare OME w/o CIC	\$376.31

* rates effective January 1, 2019

Participant Contributions: Retired employees contribute 17% and 39% of the total medical premium rates for individual and family coverage, respectively, for all plans offered except the UniCare State Indemnity Plan Basic and all plans offered to retirees and spouses with Medicare. For these plans, retired employees contribute 50%.

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.

Medicare Part B Reimbursement: The Town reimburses retirees and spouses for a portion of the Medicare Part B premium. The annual maximum reimbursement for 2019 is \$804.

Dental Coverage: Dental coverage is provided. The total monthly costs are \$30.32 and \$73.02 for individual and family plans, respectively. Retirees contribute 100% of the monthly premiums.

Life Insurance Coverage: Retirees are eligible for a \$5,000 life insurance benefit. The total monthly cost is \$8.36. Retirees contribute \$4.18 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):	7.5%, compounded annually, for the measurement as of June 30, 2019. 7.5%, 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):	7.5%, compounded annually, for development of the Actuarially Determined Contribution (ADEC) as of June 30, 2019.
Amortization Method:	Increasing at 3.5% 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: Dental trend rates are 4% per year.

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 - 80% of eligible retired employees will elect to participate.
 Dental - Not offered to retired employees.
 Life - 70% 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>Medicare-Eligible</u>		<u>Medicare-Ineligible</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
Under 20	\$2,971	\$3,488	\$2,971	\$3,488
20-24	2,341	3,714	2,341	3,714
25-29	2,436	5,479	2,436	5,479
30-34	3,060	6,923	3,060	6,923
35-39	3,839	7,131	3,839	7,131
40-44	4,784	7,304	4,784	7,304
45-49	6,038	8,017	6,038	8,017
50-54	7,957	9,431	7,957	9,431
55-59	10,340	10,905	10,340	10,905
60-64	13,270	12,979	13,270	12,979
65-69	3,430	3,340	16,556	15,558
70-74	4,111	3,940	19,837	18,345
75-79	4,854	4,572	23,424	21,284
80-84	5,579	5,244	26,924	24,411
85-89	6,215	5,861	29,993	27,288
90-94	6,766	6,256	32,650	29,123
95+	7,191	6,050	34,703	28,164

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	\$ 2,525
Medicare	2,124

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 BB2D.

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 BB2D.

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	0.00%	0.00%	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	50.00%	20.00%	
70	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 White Collar Mortality Table, base year 2014, projected with generational mortality improvement using scale MP-2016.

Pre-Retirement Mortality: Pre-retirement mortality rates for Teachers are based on the RP-2014 White Collar Mortality Table, base year 2014, projected with generational mortality improvement using scale MP-2016.

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:

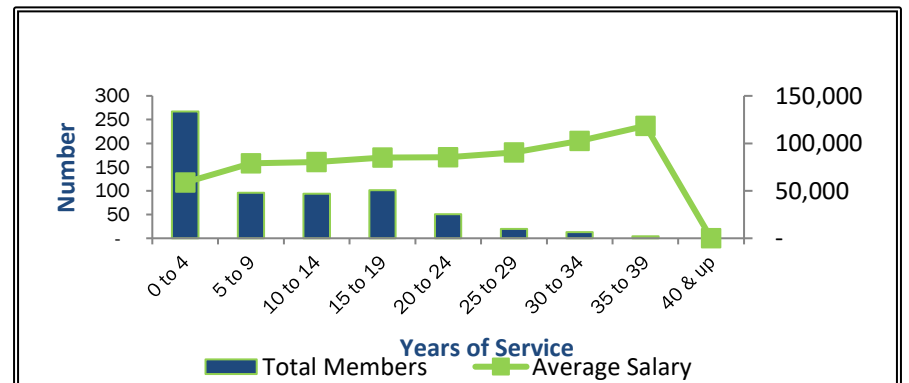
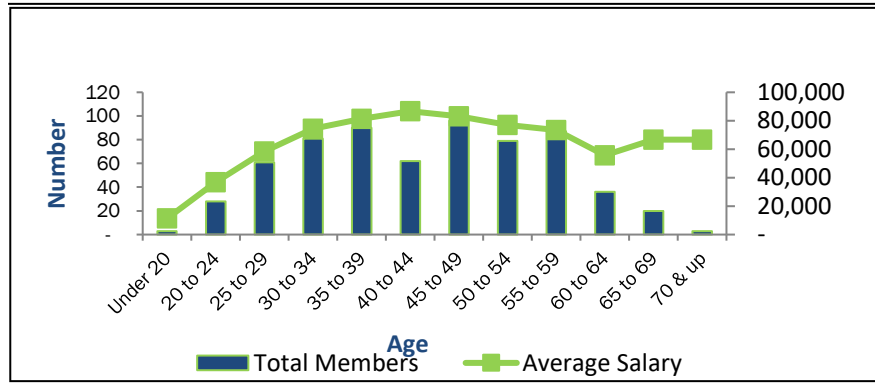
Retirement rates for Teachers are as follows:

<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, 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	3	-	-	-	-	-	-	-	-	-	3	33,942	11,314
20 to 24	27	1	-	-	-	-	-	-	-	-	28	1,031,533	36,840
25 to 29	55	6	-	-	-	-	-	-	-	-	61	3,564,896	58,441
30 to 34	53	20	8	-	-	-	-	-	-	-	81	6,029,727	74,441
35 to 39	33	24	25	7	1	-	-	-	-	-	90	7,326,165	81,402
40 to 44	27	7	8	17	3	-	-	-	-	-	62	5,373,856	86,675
45 to 49	28	15	12	25	16	-	-	-	-	-	96	7,981,275	83,138
50 to 54	19	12	14	13	10	6	4	1	-	-	79	6,096,484	77,171
55 to 59	15	7	17	21	13	7	4	3	-	-	87	6,396,679	73,525
60 to 64	6	3	6	10	5	3	3	-	-	-	36	2,001,637	55,601
65 to 69	1	1	4	8	3	2	1	-	-	-	20	1,334,810	66,740
70 & up	-	-	-	-	-	2	1	-	-	-	3	200,033	66,678
Total	267	96	94	101	51	20	13	4	-	-	646	47,371,039	73,330
Total Salary	15,677,436	7,576,337	7,541,555	8,597,890	4,360,570	1,810,324	1,333,341	473,587	-	-			
Average Salary	58,717	78,920	80,229	85,128	85,501	90,516	102,565	118,397	-	-			
Average Age:							44.3		Average Service:		10.0		



SECTION 7 - PLAN MEMBER INFORMATION

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

Non-Medicare Plans:													
Age	FCHP Direct	FCHP Select	HP Independence	HP Primary Choice	Health New England	Always Health Partners Complete	THP Navigator	THP Spirit	UniCare State Indemnity Plan/Basic with CIC	UniCare State Indemnity Plan/Basic without CIC	UniCare State Indemnity Plan/Community Choice	UniCare State Indemnity Plan/PLUS	Total
Under 40	0	0	0	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0	0	0	0	0	0
50 to 54	0	0	0	1	0	0	1	0	0	0	0	0	2
55 to 59	0	1	1	0	1	0	4	0	0	0	0	1	8
60 to 64	0	0	0	1	0	0	14	2	0	0	0	2	19
65 to 69	0	0	1	0	0	0	2	0	0	0	0	1	4
70 to 74	0	0	0	0	0	0	0	1	0	3	0	0	4
75 to 79	1	0	0	0	1	0	2	0	0	1	0	0	5
80 to 84	0	0	1	0	0	0	0	0	0	1	0	0	2
85 to 89	0	0	0	0	0	0	0	0	0	0	0	0	0
90+	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	3	2	2	0	23	3	0	5	0	4	44
Covered Spouses	1	0	0	2	1	0	9	2	0	2	1	5	23
Average Age:						73.8							

In addition, there are 29 retirees, survivors and covered spouses that are not covered under any medical plan but are covered under a life insurance policy which the Town contributes to and/or receive a reimbursement from the Town for a Medicare late-enrollment penalty.

SECTION 7 - PLAN MEMBER INFORMATION

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

Medicare Plans:

Age	HP Medicare Enhanced	Health NE Med Plus	Tufts Complement	Tufts Preferred	UniCare OME w/CIC	UniCare OME w/o CIC	Total
Under 40	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	0
55 to 59	0	0	0	0	0	0	0
60 to 64	0	0	5	0	5	0	10
65 to 69	6	0	9	7	40	0	62
70 to 74	5	0	4	3	44	0	56
75 to 79	4	0	0	2	38	0	44
80 to 84	2	0	2	2	25	0	31
85 to 89	1	0	1	0	15	0	17
90+	2	0	1	0	4	0	7
Total	20	0	22	14	171	0	227
Covered Spouses	9	0	12	8	78	0	107

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.

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 available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

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) * 3.49%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2019	47,371,039	-	47,371,039	1,942,743	714,779	-	2,657,522
2020	45,086,792	3,942,233	49,029,025	2,056,778	839,796	137,694	2,758,880
2021	43,340,955	7,404,086	50,745,041	2,247,210	969,189	258,610	2,957,789
2022	41,814,904	10,706,213	52,521,117	2,500,002	1,103,111	373,947	3,229,166
2023	40,301,716	14,057,640	54,359,356	2,834,960	1,241,720	491,005	3,585,675
2024	38,963,515	17,298,418	56,261,933	3,115,540	1,285,180	604,199	3,796,521
2025	37,615,226	20,615,875	58,231,101	3,362,829	1,330,161	720,071	3,972,919
2026	36,289,647	23,979,543	60,269,190	3,645,639	1,376,717	837,558	4,184,798
2027	34,987,308	27,391,304	62,378,612	3,822,599	1,424,902	956,724	4,290,777
2028	33,662,025	30,899,838	64,561,863	4,135,329	1,474,774	1,079,270	4,530,833
2029	32,188,595	34,632,933	66,821,528	4,440,810	1,526,391	1,209,659	4,757,542
2030	30,600,638	38,559,643	69,160,281	4,787,823	1,579,815	1,346,811	5,020,827
2031	28,996,044	42,584,847	71,580,891	5,226,694	1,635,109	1,487,404	5,374,399
2032	27,488,734	46,597,488	74,086,222	5,505,746	1,692,338	1,627,557	5,570,527
2033	26,016,780	50,662,460	76,679,240	5,777,456	1,751,570	1,769,539	5,759,487
2034	24,667,580	54,695,433	79,363,013	6,121,146	1,812,875	1,910,402	6,023,619
2035	23,560,429	58,580,289	82,140,718	6,224,140	1,876,326	2,046,093	6,054,373
2036	22,392,368	62,623,275	85,015,643	6,264,460	1,941,997	2,187,306	6,019,151
2037	21,213,884	66,777,307	87,991,191	6,553,937	2,009,967	2,332,398	6,231,506
2038	19,904,779	71,166,104	91,070,883	6,766,842	2,080,316	2,485,690	6,361,468
2039	18,627,360	75,631,004	94,258,364	7,104,001	2,153,127	2,641,640	6,615,488
2040	17,186,609	80,370,798	97,557,407	7,515,680	2,228,486	2,807,192	6,936,974
2041	15,881,004	85,090,912	100,971,916	7,913,435	2,306,483	2,972,056	7,247,862
2042	14,600,568	89,905,365	104,505,933	8,428,474	2,387,210	3,140,215	7,675,469
2043	13,251,005	94,912,636	108,163,641	8,743,884	2,470,762	3,315,109	7,899,537
2044	11,918,802	100,030,566	111,949,368	8,998,991	2,557,239	3,493,868	8,062,362
2045	10,620,633	105,246,963	115,867,596	9,252,725	2,646,742	3,676,067	8,223,400
2046	9,475,823	110,447,139	119,922,962	9,524,296	2,739,378	3,857,698	8,405,976
2047	8,342,848	115,777,418	124,120,266	9,595,294	2,835,256	4,043,875	8,386,675
2048	7,349,464	121,115,011	128,464,475	9,838,602	2,934,490	4,230,306	8,542,786
2049	6,497,142	126,463,590	132,960,732	9,971,643	3,037,197	4,417,121	8,591,719
2050	5,623,476	131,990,882	137,614,358	10,017,702	3,143,499	4,610,179	8,551,022
2051	4,827,138	137,603,723	142,430,861	10,011,284	3,253,521	4,806,224	8,458,581
2052	4,150,411	143,265,530	147,415,941	10,086,271	3,367,394	5,003,979	8,449,686

Town of Bedford, 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) * 3.49%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2053	3,510,414	149,065,085	152,575,499	10,291,215	3,485,253	5,206,546	8,569,922
2054	2,904,296	155,011,345	157,915,641	10,361,863	3,607,237	5,414,237	8,554,863
2055	2,364,549	161,078,139	163,442,688	10,589,577	3,733,490	5,626,138	8,696,929
2056	1,844,210	167,318,972	169,163,182	10,759,083	3,864,162	5,844,118	8,779,127
2057	1,444,821	173,639,072	175,083,893	10,794,252	3,999,408	6,064,867	8,728,793
2058	1,096,838	180,114,991	181,211,829	10,909,373	4,139,387	6,291,058	8,757,702
2059	870,640	186,683,603	187,554,243	11,118,291	4,284,266	6,520,486	8,882,071
2060	673,779	193,444,863	194,118,642	11,208,870	4,434,215	6,756,644	8,886,441
2061	528,150	200,384,644	200,912,794	11,372,103	4,589,413	6,999,036	8,962,480
2062	363,211	207,581,531	207,944,742	11,577,019	4,750,042	7,250,409	9,076,652
2063	236,837	214,985,971	215,222,808	11,689,383	4,916,293	7,509,032	9,096,644
2064	179,058	222,576,548	222,755,606	11,786,608	5,088,363	7,774,155	9,100,816
2065	125,641	230,426,411	230,552,052	11,913,502	5,266,456	8,048,335	9,131,623
2066	47,313	238,574,061	238,621,374	11,969,386	5,450,782	8,332,917	9,087,251
2067	27,009	246,946,113	246,973,122	12,032,504	5,641,559	8,625,336	9,048,727
2068	15,357	255,601,824	255,617,181	11,998,182	5,839,014	8,927,662	8,909,534
2069	11,854	264,551,928	264,563,782	11,973,628	6,043,379	9,240,272	8,776,735
2070	6,964	273,816,550	273,823,514	11,908,497	6,254,897	9,563,866	8,599,528
2071	4,176	283,403,161	283,407,337	11,766,801	6,473,818	9,898,708	8,341,911
2072	3,414	293,323,180	293,326,594	11,648,984	6,700,402	10,245,194	8,104,192
2073	-	303,593,025	303,593,025	11,390,082	6,934,916	10,603,899	7,721,099
2074	-	314,218,781	314,218,781	11,124,957	7,177,638	10,975,036	7,327,559
2075	-	325,216,438	325,216,438	10,815,135	7,428,855	11,359,162	6,884,828
2076	-	336,599,013	336,599,013	10,437,672	7,688,865	11,756,733	6,369,804
2077	-	348,379,978	348,379,978	10,043,735	7,957,975	12,168,218	5,833,492
2078	-	360,573,277	360,573,277	9,569,810	8,236,504	12,594,106	5,212,208
2079	-	373,193,342	373,193,342	9,096,615	8,524,782	13,034,900	4,586,497
2080	-	386,255,109	386,255,109	8,591,233	8,823,149	13,491,121	3,923,261
2081	-	399,774,038	399,774,038	8,062,949	9,131,959	13,963,311	3,231,597
2082	-	413,766,129	413,766,129	7,529,986	9,451,578	14,452,026	2,529,538
2083	-	428,247,944	428,247,944	6,960,117	9,782,383	14,957,847	1,784,653
2084	-	443,236,622	443,236,622	6,393,743	10,124,766	15,481,372	1,037,137
2085	-	458,749,904	458,749,904	5,848,307	10,479,133	16,023,220	304,220
2086	-	474,806,151	474,806,151	5,295,961	10,845,903	16,584,033	-

Town of Bedford, 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	8,242,295	2,657,522	1,942,743	-	494,606	9,451,680
2020	9,451,680	2,758,880	2,056,778	-	735,205	10,888,987
2021	10,888,987	2,957,789	2,247,210	-	843,321	12,442,887
2022	12,442,887	3,229,166	2,500,002	-	960,560	14,132,611
2023	14,132,611	3,585,675	2,834,960	-	1,088,098	15,971,424
2024	15,971,424	3,796,521	3,115,540	-	1,223,394	17,875,799
2025	17,875,799	3,972,919	3,362,829	-	1,363,563	19,849,452
2026	19,849,452	4,184,798	3,645,639	-	1,508,927	21,897,538
2027	21,897,538	4,290,777	3,822,599	-	1,659,872	24,025,588
2028	24,025,588	4,530,833	4,135,329	-	1,816,751	26,237,843
2029	26,237,843	4,757,542	4,440,810	-	1,979,716	28,534,291
2030	28,534,291	5,020,827	4,787,823	-	2,148,809	30,916,104
2031	30,916,104	5,374,399	5,226,694	-	2,324,247	33,388,056
2032	33,388,056	5,570,527	5,505,746	-	2,506,533	35,959,370
2033	35,959,370	5,759,487	5,777,456	-	2,696,279	38,637,680
2034	38,637,680	6,023,619	6,121,146	-	2,894,169	41,434,322
2035	41,434,322	6,054,373	6,224,140	-	3,101,208	44,365,763
2036	44,365,763	6,019,151	6,264,460	-	3,318,233	47,438,687
2037	47,438,687	6,231,506	6,553,937	-	3,545,810	50,662,066
2038	50,662,066	6,361,468	6,766,842	-	3,784,453	54,041,145
2039	54,041,145	6,615,488	7,104,001	-	4,034,767	57,587,399
2040	57,587,399	6,936,974	7,515,680	-	4,297,353	61,306,046
2041	61,306,046	7,247,862	7,913,435	-	4,572,994	65,213,467
2042	65,213,467	7,675,469	8,428,474	-	4,862,772	69,323,234
2043	69,323,234	7,899,537	8,743,884	-	5,167,580	73,646,467
2044	73,646,467	8,062,362	8,998,991	-	5,488,361	78,198,199
2045	78,198,199	8,223,400	9,252,725	-	5,826,265	82,995,139
2046	82,995,139	8,405,976	9,524,296	-	6,182,698	88,059,517
2047	88,059,517	8,386,675	9,595,294	-	6,559,141	93,410,039
2048	93,410,039	8,542,786	9,838,602	-	6,957,160	99,071,383
2049	99,071,383	8,591,719	9,971,643	-	7,378,607	105,070,066
2050	105,070,066	8,551,022	10,017,702	-	7,825,254	111,428,640
2051	111,428,640	8,458,581	10,011,284	-	8,298,922	118,174,859
2052	118,174,859	8,449,686	10,086,271	-	8,801,742	125,340,016

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	125,340,016	8,569,922	10,291,215	-	9,335,953	132,954,676
2054	132,954,676	8,554,863	10,361,863	-	9,903,838	141,051,514
2055	141,051,514	8,696,929	10,589,577	-	10,507,889	149,666,755
2056	149,666,755	8,779,127	10,759,083	-	11,150,758	158,837,557
2057	158,837,557	8,728,793	10,794,252	-	11,835,362	168,607,460
2058	168,607,460	8,757,702	10,909,373	-	12,564,872	179,020,661
2059	179,020,661	8,882,071	11,118,291	-	13,342,691	190,127,132
2060	190,127,132	8,886,441	11,208,870	-	14,172,444	201,977,147
2061	201,977,147	8,962,480	11,372,103	-	15,057,925	214,625,449
2062	214,625,449	9,076,652	11,577,019	-	16,003,145	228,128,227
2063	228,128,227	9,096,644	11,689,383	-	17,012,389	242,547,877
2064	242,547,877	9,100,816	11,786,608	-	18,090,374	257,952,459
2065	257,952,459	9,131,623	11,913,502	-	19,242,114	274,412,694
2066	274,412,694	9,087,251	11,969,386	-	20,472,872	292,003,431
2067	292,003,431	9,048,727	12,032,504	-	21,788,366	310,808,020
2068	310,808,020	8,909,534	11,998,182	-	23,194,777	330,914,149
2069	330,914,149	8,776,735	11,973,628	-	24,698,678	352,415,934
2070	352,415,934	8,599,528	11,908,497	-	26,307,109	375,414,074
2071	375,414,074	8,341,911	11,766,801	-	28,027,622	400,016,806
2072	400,016,806	8,104,192	11,648,984	-	29,868,331	426,340,345
2073	426,340,345	7,721,099	11,390,082	-	31,837,939	454,509,301
2074	454,509,301	7,327,559	11,124,957	-	33,945,795	484,657,698
2075	484,657,698	6,884,828	10,815,135	-	36,201,941	516,929,332
2076	516,929,332	6,369,804	10,437,672	-	38,617,155	551,478,619
2077	551,478,619	5,833,492	10,043,735	-	41,203,012	588,471,388
2078	588,471,388	5,212,208	9,569,810	-	43,971,944	628,085,730
2079	628,085,730	4,586,497	9,096,615	-	46,937,300	670,512,912
2080	670,512,912	3,923,261	8,591,233	-	50,113,419	715,958,359
2081	715,958,359	3,231,597	8,062,949	-	53,515,701	764,642,708
2082	764,642,708	2,529,538	7,529,986	-	57,160,686	816,802,946
2083	816,802,946	1,784,653	6,960,117	-	61,066,141	872,693,623
2084	872,693,623	1,037,137	6,393,743	-	65,251,149	932,588,166
2085	932,588,166	304,220	5,848,307	-	69,736,209	996,780,288
2086	996,780,288	-	5,295,961	-	74,559,923	1,066,044,250

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	1,066,044,250	-	4,765,839	-	79,774,600	1,141,053,011
2088	1,141,053,011	-	4,248,772	-	85,419,647	1,222,223,886
2089	1,222,223,886	-	3,763,674	-	91,525,654	1,309,985,866
2090	1,309,985,866	-	3,299,553	-	98,125,207	1,404,811,520
2091	1,404,811,520	-	2,877,660	-	105,252,952	1,507,186,812
2092	1,507,186,812	-	2,492,777	-	112,945,532	1,617,639,567
2093	1,617,639,567	-	2,140,865	-	121,242,685	1,736,741,387
2094	1,736,741,387	-	1,824,614	-	130,187,181	1,865,103,954
2095	1,865,103,954	-	1,541,154	-	139,825,003	2,003,387,803
2096	2,003,387,803	-	1,292,280	-	150,205,625	2,152,301,148
2097	2,152,301,148	-	1,074,088	-	161,382,308	2,312,609,368
2098	2,312,609,368	-	887,198	-	173,412,433	2,485,134,603
2099	2,485,134,603	-	727,319	-	186,357,821	2,670,765,105
2100	2,670,765,105	-	591,583	-	200,285,199	2,870,458,721
2101	2,870,458,721	-	477,556	-	215,266,496	3,085,247,661
2102	3,085,247,661	-	382,665	-	231,379,225	3,316,244,221
2103	3,316,244,221	-	304,286	-	248,706,906	3,564,646,841
2104	3,564,646,841	-	240,301	-	267,339,502	3,831,746,042
2105	3,831,746,042	-	188,415	-	287,373,888	4,118,931,515
2106	4,118,931,515	-	146,469	-	308,914,371	4,427,699,417
2107	4,427,699,417	-	113,043	-	332,073,217	4,759,659,591
2108	4,759,659,591	-	86,424	-	356,971,228	5,116,544,395
2109	5,116,544,395	-	65,399	-	383,738,377	5,500,217,373
2110	5,500,217,373	-	48,914	-	412,514,469	5,912,682,928
2111	5,912,682,928	-	36,111	-	443,449,865	6,356,096,682
2112	6,356,096,682	-	26,227	-	476,706,268	6,832,776,723
2113	6,832,776,723	-	18,437	-	512,457,563	7,345,215,849
2114	7,345,215,849	-	12,957	-	550,890,703	7,896,093,595
2115	7,896,093,595	-	8,998	-	592,206,682	8,488,291,279
2116	8,488,291,279	-	5,716	-	636,621,632	9,124,907,195
2117	9,124,907,195	-	3,801	-	684,367,897	9,809,271,291
2118	9,809,271,291	-	2,483	-	735,695,254	10,544,964,062
2119	10,544,964,062	-	1,578	-	790,872,245	11,335,834,729
2120	11,335,834,729	-	858	-	850,187,573	12,186,021,444
2121	12,186,021,444	-	455	-	913,951,591	13,099,972,580

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	9,451,680	2,056,778	2,056,778	-	1,983,733	-	1,983,733
2021	10,888,987	2,247,210	2,247,210	-	2,016,188	-	2,016,188
2022	12,442,887	2,500,002	2,500,002	-	2,086,504	-	2,086,504
2023	14,132,611	2,834,960	2,834,960	-	2,200,986	-	2,200,986
2024	15,971,424	3,115,540	3,115,540	-	2,250,066	-	2,250,066
2025	17,875,799	3,362,829	3,362,829	-	2,259,218	-	2,259,218
2026	19,849,452	3,645,639	3,645,639	-	2,278,341	-	2,278,341
2027	21,897,538	3,822,599	3,822,599	-	2,222,262	-	2,222,262
2028	24,025,588	4,135,329	4,135,329	-	2,236,341	-	2,236,341
2029	26,237,843	4,440,810	4,440,810	-	2,233,993	-	2,233,993
2030	28,534,291	4,787,823	4,787,823	-	2,240,522	-	2,240,522
2031	30,916,104	5,226,694	5,226,694	-	2,275,253	-	2,275,253
2032	33,388,056	5,505,746	5,505,746	-	2,229,515	-	2,229,515
2033	35,959,370	5,777,456	5,777,456	-	2,176,318	-	2,176,318
2034	38,637,680	6,121,146	6,121,146	-	2,144,915	-	2,144,915
2035	41,434,322	6,224,140	6,224,140	-	2,028,842	-	2,028,842
2036	44,365,763	6,264,460	6,264,460	-	1,899,520	-	1,899,520
2037	47,438,687	6,553,937	6,553,937	-	1,848,648	-	1,848,648
2038	50,662,066	6,766,842	6,766,842	-	1,775,536	-	1,775,536
2039	54,041,145	7,104,001	7,104,001	-	1,733,956	-	1,733,956
2040	57,587,399	7,515,680	7,515,680	-	1,706,455	-	1,706,455
2041	61,306,046	7,913,435	7,913,435	-	1,671,410	-	1,671,410
2042	65,213,467	8,428,474	8,428,474	-	1,655,993	-	1,655,993
2043	69,323,234	8,743,884	8,743,884	-	1,598,106	-	1,598,106
2044	73,646,467	8,998,991	8,998,991	-	1,529,982	-	1,529,982
2045	78,198,199	9,252,725	9,252,725	-	1,463,369	-	1,463,369
2046	82,995,139	9,524,296	9,524,296	-	1,401,227	-	1,401,227
2047	88,059,517	9,595,294	9,595,294	-	1,313,184	-	1,313,184
2048	93,410,039	9,838,602	9,838,602	-	1,252,542	-	1,252,542
2049	99,071,383	9,971,643	9,971,643	-	1,180,911	-	1,180,911
2050	105,070,066	10,017,702	10,017,702	-	1,103,596	-	1,103,596
2051	111,428,640	10,011,284	10,011,284	-	1,025,943	-	1,025,943
2052	118,174,859	10,086,271	10,086,271	-	961,514	-	961,514
2053	125,340,016	10,291,215	10,291,215	-	912,606	-	912,606

Town of Bedford, 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 (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)
2054	132,954,676	10,361,863	10,361,863	-	854,763	-	854,763
2055	141,051,514	10,589,577	10,589,577	-	812,602	-	812,602
2056	149,666,755	10,759,083	10,759,083	-	768,009	-	768,009
2057	158,837,557	10,794,252	10,794,252	-	716,762	-	716,762
2058	168,607,460	10,909,373	10,909,373	-	673,867	-	673,867
2059	179,020,661	11,118,291	11,118,291	-	638,857	-	638,857
2060	190,127,132	11,208,870	11,208,870	-	599,127	-	599,127
2061	201,977,147	11,372,103	11,372,103	-	565,444	-	565,444
2062	214,625,449	11,577,019	11,577,019	-	535,472	-	535,472
2063	228,128,227	11,689,383	11,689,383	-	502,948	-	502,948
2064	242,547,877	11,786,608	11,786,608	-	471,750	-	471,750
2065	257,952,459	11,913,502	11,913,502	-	443,562	-	443,562
2066	274,412,694	11,969,386	11,969,386	-	414,551	-	414,551
2067	292,003,431	12,032,504	12,032,504	-	387,663	-	387,663
2068	310,808,020	11,998,182	11,998,182	-	359,588	-	359,588
2069	330,914,149	11,973,628	11,973,628	-	333,816	-	333,816
2070	352,415,934	11,908,497	11,908,497	-	308,837	-	308,837
2071	375,414,074	11,766,801	11,766,801	-	283,872	-	283,872
2072	400,016,806	11,648,984	11,648,984	-	261,423	-	261,423
2073	426,340,345	11,390,082	11,390,082	-	237,779	-	237,779
2074	454,509,301	11,124,957	11,124,957	-	216,041	-	216,041
2075	484,657,698	10,815,135	10,815,135	-	195,372	-	195,372
2076	516,929,332	10,437,672	10,437,672	-	175,398	-	175,398
2077	551,478,619	10,043,735	10,043,735	-	157,003	-	157,003
2078	588,471,388	9,569,810	9,569,810	-	139,158	-	139,158
2079	628,085,730	9,096,615	9,096,615	-	123,048	-	123,048
2080	670,512,912	8,591,233	8,591,233	-	108,104	-	108,104
2081	715,958,359	8,062,949	8,062,949	-	94,379	-	94,379
2082	764,642,708	7,529,986	7,529,986	-	81,991	-	81,991
2083	816,802,946	6,960,117	6,960,117	-	70,498	-	70,498
2084	872,693,623	6,393,743	6,393,743	-	60,243	-	60,243
2085	932,588,166	5,848,307	5,848,307	-	51,260	-	51,260
2086	996,780,288	5,295,961	5,295,961	-	43,180	-	43,180
2087	1,066,044,250	4,765,839	4,765,839	-	36,147	-	36,147

Town of Bedford, 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 (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)
2088	1,141,053,011	4,248,772	4,248,772	-	29,977	-	29,977
2089	1,222,223,886	3,763,674	3,763,674	-	24,702	-	24,702
2090	1,309,985,866	3,299,553	3,299,553	-	20,145	-	20,145
2091	1,404,811,520	2,877,660	2,877,660	-	16,343	-	16,343
2092	1,507,186,812	2,492,777	2,492,777	-	13,170	-	13,170
2093	1,617,639,567	2,140,865	2,140,865	-	10,521	-	10,521
2094	1,736,741,387	1,824,614	1,824,614	-	8,341	-	8,341
2095	1,865,103,954	1,541,154	1,541,154	-	6,554	-	6,554
2096	2,003,387,803	1,292,280	1,292,280	-	5,112	-	5,112
2097	2,152,301,148	1,074,088	1,074,088	-	3,953	-	3,953
2098	2,312,609,368	887,198	887,198	-	3,037	-	3,037
2099	2,485,134,603	727,319	727,319	-	2,316	-	2,316
2100	2,670,765,105	591,583	591,583	-	1,752	-	1,752
2101	2,870,458,721	477,556	477,556	-	1,316	-	1,316
2102	3,085,247,661	382,665	382,665	-	981	-	981
2103	3,316,244,221	304,286	304,286	-	726	-	726
2104	3,564,646,841	240,301	240,301	-	533	-	533
2105	3,831,746,042	188,415	188,415	-	389	-	389
2106	4,118,931,515	146,469	146,469	-	281	-	281
2107	4,427,699,417	113,043	113,043	-	202	-	202
2108	4,759,659,591	86,424	86,424	-	144	-	144
2109	5,116,544,395	65,399	65,399	-	101	-	101
2110	5,500,217,373	48,914	48,914	-	70	-	70
2111	5,912,682,928	36,111	36,111	-	48	-	48
2112	6,356,096,682	26,227	26,227	-	33	-	33
2113	6,832,776,723	18,437	18,437	-	21	-	21
2114	7,345,215,849	12,957	12,957	-	14	-	14
2115	7,896,093,595	8,998	8,998	-	9	-	9
2116	8,488,291,279	5,716	5,716	-	5	-	5
2117	9,124,907,195	3,801	3,801	-	3	-	3
2118	9,809,271,291	2,483	2,483	-	2	-	2
2119	10,544,964,062	1,578	1,578	-	1	-	1
2120	11,335,834,729	858	858	-	1	-	1
2121	12,186,021,444	455	455	-	-	-	-

Town of Bedford, 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	\$ (5,921,419)	7.89	-	(750,497)	(750,497)	(750,497)	(750,497)	(750,497)	(750,497)	(750,497)	(667,940)	-
Net Increase (Decrease) in OPEB Expense			-	(750,497)	(750,497)	(750,497)	(750,497)	(750,497)	(750,497)	(750,497)	(667,940)	-

Year	Changes of Assumptions	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
			2018	\$ -	-	-	-	-	-	-	-	-
2019	\$ 6,529,210	7.89	-	827,530	827,530	827,530	827,530	827,530	827,530	827,530	736,500	-
Net Increase (Decrease) in OPEB Expense			-	827,530	827,530	827,530	827,530	827,530	827,530	827,530	736,500	-

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	\$ (164,650)	5	(32,930)	(32,930)	(32,930)	(32,930)	(32,930)	-	-
2019	\$ 167,968	5	-	33,594	33,594	33,594	33,593	33,593	-	-	-	-
Net Increase (Decrease) in OPEB Expense			(32,930)	664	664	664	663	33,593	-	-	-	-

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