



TOWN OF ACUSHNET OTHER POST-EMPLOYMENT BENEFITS PROGRAM

July 1, 2016 Actuarial Valuation

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July 1, 2016 Actuarial Valuation

Town of Acushnet Other Post-Employment Benefits Program

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Certification

We have performed an actuarial valuation of the Town of Acushnet Other Post-Employment Benefits Program as of July 1, 2016. The results of this valuation, along with supporting data, are set forth in the following report.

The ultimate cost of an OPEB plan is the total amount needed to provide benefits for plan members and beneficiaries and to pay the expenses of administering the plan. OPEB costs are met by contributions and by investment return on any plan assets. The principal purpose of this report is to set forth an actuarial determination of plan liabilities. In addition, this report provides:

- Information needed to meet disclosure requirements
- Review of plan experience since the last valuation to ascertain whether the assumptions and methods employed for valuation purposes are reflective of actual events and remain appropriate for prospective application.
- Assessment of the relative funded position of the plan, i.e., through a comparison of plan assets and projected plan liabilities.
- Comments on any other matters which may be of assistance in the operation of the plan.

This report may not be used for purposes other than those listed above without Milliman's prior written consent. If this report is distributed to other parties, it must be copied in its entirety, including this certification section. No attempt is being made to offer any accounting opinion or advice. The calculations reported herein have been made on a basis consistent with our understanding of the plan provisions. Additional determinations may be needed for other purposes.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law or accounting standards. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

In preparing this report, we relied on employee census data, claims and premium information as of the valuation date, furnished by the Town of Acushnet. We performed a limited review of the information used directly in our analysis for reasonableness and consistency and have found them to be reasonably consistent and comparable with data used for other purposes. If the information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete and our calculations may need to be revised. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

The Valuation Process

The process of determining the liability for OPEB benefits is based on many assumptions about future events. The key actuarial assumptions are:

Turnover and retirement rates: How likely is it that an employee will qualify for post-employment benefits and when will they start?

Medical inflation and claims costs assumptions: When an employee starts receiving post-employment benefits many years from now, how much will be paid each year for the benefits and how rapidly will the costs grow?

Mortality assumption: How long is a retiree likely to receive the benefits?

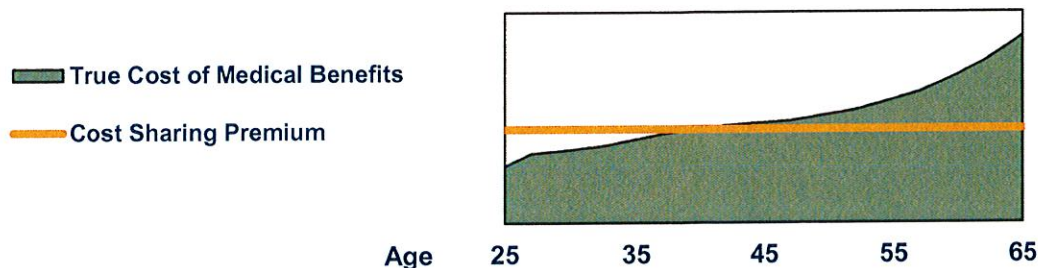
Discount rate assumption: What is the present value of those future benefit payments in terms of today's dollars?

Since the liability is being recognized over the employee's whole career with the Town, the present value is divided into three pieces: the part that is attributed to past years (the "Accrued Liability" or "Past Service Liability"), the part that is being earned this year (the "Normal Cost"), and the part that will be earned in future years (the "Future Service Liability").

Implicit Rate Subsidies

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

- The cost sharing premium is usually a fixed amount such as a COBRA premium that does not take into account the age of the retiree and his/her dependents. Since medical costs generally increase with age, the cost sharing premium is often lower than the true cost of the medical benefits:



- The cost sharing premium is usually a blended rate that takes into account the cost of medical benefits for active employees as well as retirees. Medical costs are generally higher for retirees than for active employees of the same age. This means that, again, the cost sharing premium is often lower than the true cost of the medical benefits.

Because of these two factors, a retiree who is paying 100% of the cost sharing premium is most likely not paying 100% of the true cost of the medical benefits. This situation is known as an "implicit rate subsidy". GASB 43 and 45 require the plan sponsor to measure the liability for this subsidy; that is, the difference between the true cost of the medical benefits and the cost sharing premiums paid by the retiree. To do this, our valuation consists of several steps:

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

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

Finally, the net liability for the Town is calculated as the difference between the gross liability and the offset liability.

Summary of Liabilities

We have calculated the Accrued Liability as of July 1, 2016 separately for four groups of Town employees, who are eligible for different OPEB benefits. We have broken the accrued liability for each group into several pieces: benefits that are expected to be paid prior to age 65 (i.e. prior to Medicare) and after age 65 (i.e. after Medicare) to current active members and their covered dependents after retirement, and the same figures for members who have already retired and are currently receiving benefits. In all cases, the Accrued Liability only reflects benefits that are paid for by the Town, taking into account any implicit rate subsidies.

	Fire	Police	Town	School	Total
Current active members					
Employees under age 65	\$58,269	\$268,832	\$162,282	\$926,185	\$1,415,568
Employees over age 65	84,310	240,903	369,235	1,502,928	2,197,376
Dependents under age 65	49,507	163,921	60,405	218,827	492,660
Dependents over age 65	<u>52,167</u>	<u>142,963</u>	<u>172,562</u>	<u>531,124</u>	<u>898,816</u>
Total	244,253	816,619	764,484	3,179,064	5,004,420
Current retired members					
Employees under age 65	170,918	0	49,741	90,675	311,334
Employees over age 65	931,254	202,911	878,661	3,713,415	5,726,241
Dependents under age 65	62,932	77,156	0	20,248	160,336
Dependents over age 65	<u>211,614</u>	<u>267,460</u>	<u>372,228</u>	<u>1,043,560</u>	<u>1,894,862</u>
Total	1,376,718	547,527	1,300,630	4,867,898	8,092,773
Total Accrued Liability	1,620,971	1,364,146	2,065,114	8,046,962	13,097,193

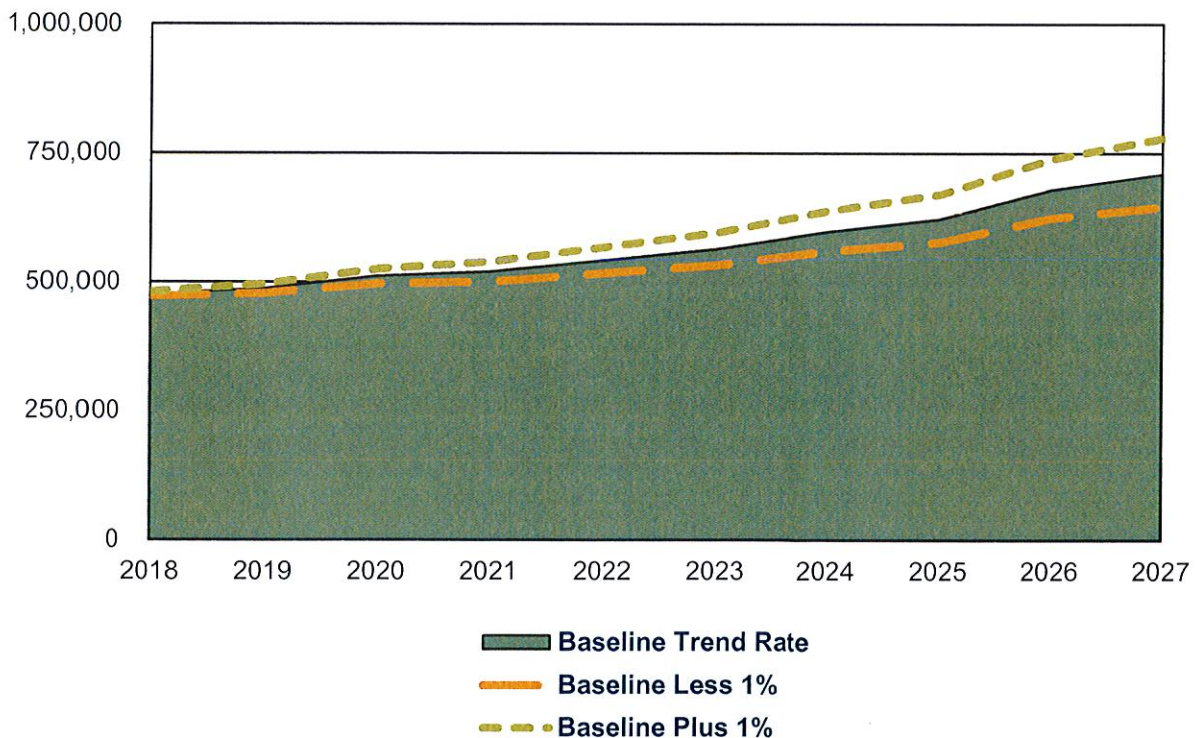
The following presents information regarding how sensitive the Accrued Liability is to changes in either the discount rate or the trend rate.

Discount Rate Sensitivity	1% Decrease 2.50%	Baseline 3.50%	1% Increase 4.50%
Accrued Liability	15,158,490	13,097,193	11,420,536
Trend Rate Sensitivity	1% Decrease	Baseline	1% Increase
Accrued Liability	11,286,263	13,097,193	15,371,707

Projected Payouts

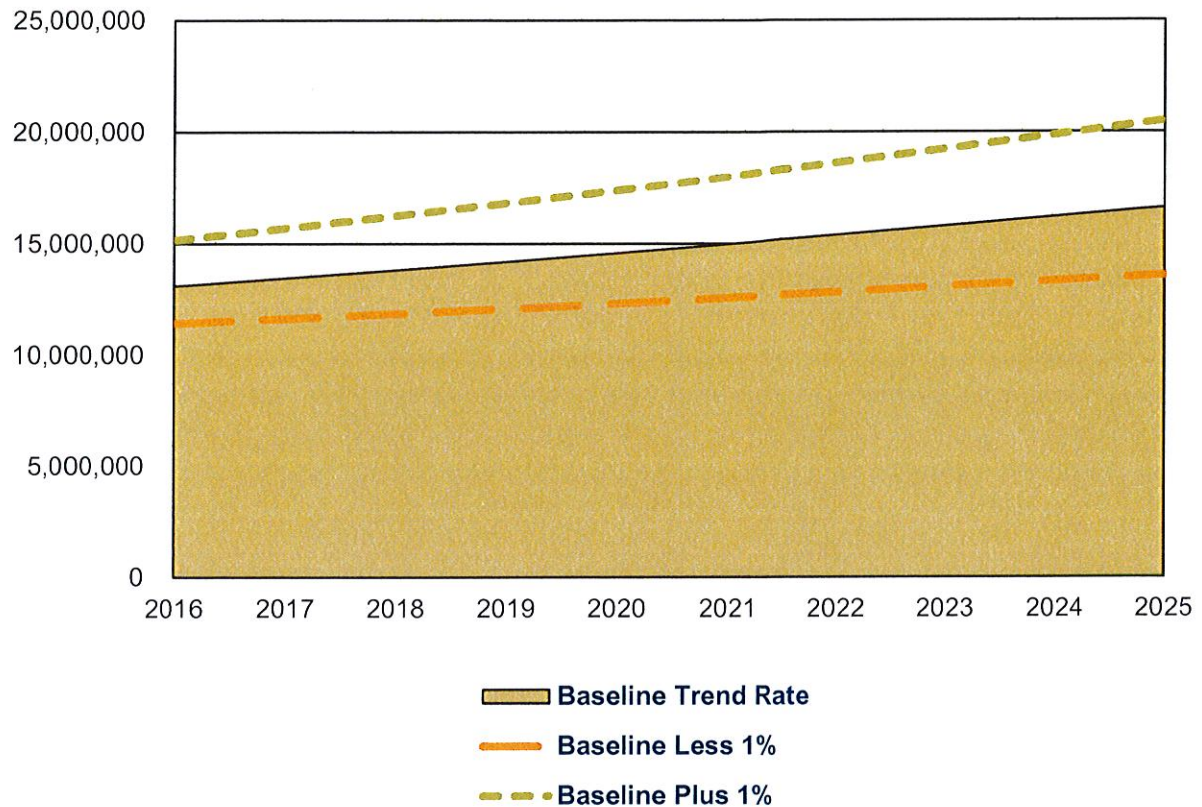
The table and graph below show the expected annual payments for OPEB benefits for the next 10 years.

Fiscal Year	Baseline Less 1%	Baseline Trend Rate	Baseline Plus 1%
2018	\$472,583	\$477,031	\$481,479
2019	478,524	487,517	496,594
2020	497,242	511,386	525,797
2021	500,798	519,925	539,600
2022	517,241	542,098	567,911
2023	533,102	564,020	596,431
2024	559,819	597,885	638,167
2025	577,372	622,440	670,582
2026	624,369	679,478	738,901
2027	646,356	710,059	779,403



Projected Liabilities

The graph below shows how the Town's accrued liability for OPEB benefits is expected to grow over the next 10 years.



Summary of Census Data

The following were included in our analysis based on information provided as of July 1, 2016 by the Town.

	Fire	Police	Town	School	Total
Number of members					
Active	4	11	21	63	99
Retired members	6	5	24	56	91
Spouses of retirees	4	5	9	21	39
Beneficiaries	0	0	1	2	3
Total	14	21	55	142	232
Average age					
Active	48.0	43.6	51.0	48.3	48.4
Retired members	65.8	72.0	76.4	73.3	73.6
Average retirement age					
Active	59.6	57.8	63.0	60.9	60.9
Retired members	53.5	49.8	62.5	61.2	60.4
Expected lifetime					
Active [to retirement]	11.6	14.2	12.0	12.5	12.5
Retired [lifetime]	18.7	13.5	12.2	15.0	14.4

Where complete census data was not available, we have made assumptions which we believe to be reasonable.

Current Premiums

Based on information provided by the Town regarding current plan elections, the following weighted average blended actual premiums were used:

2016 - 2017 Monthly Premiums		Employee	Dependents
Medical	Pre-65	\$729.58	\$1,169.15
	Post-65	278.58	278.58

Expected Healthcare Costs

Milliman's Health Cost Guidelines were used to develop the expected true cost of health care benefits by age. Representative health care costs (per person per month) are shown below.

Age	Fire and Police		Non-Medicare Eligible	
	Employee	Spouse*	Employee	Spouse
40	\$746	\$687	\$746	\$554
45	795	767	795	635
50	860	889	860	756
55	978	1,038	978	905
60	1,177	1,234	1,177	1,102
65	226	226	1,573	1,577
70	260	260	1,896	1,904
75	293	293	2,269	2,283
80	318	318	2,641	2,658

Age	All Others	
	Employee	Spouse
40	\$746	\$554
45	795	635
50	860	756
55	978	905
60	1,177	1,102
65	226	226
70	260	260
75	293	293
80	318	318

* Child dependent claim costs are included with pre-65 spouse claim costs.

Glossary

Discount Rate - GASB 75 requires that the interest rate used to discount future benefit payments back to the present day be based on the expected rate of return on any investments set aside to pay for these benefits. If no funds are set aside for this purpose, the discount rate would be based on a municipal bond index at the measurement date.

Implicit Rate Subsidy - This is the excess of the expected health care cost per retired member over the gross premium charged for that coverage. In most cases, the gross premium charged to a retiree is less than the expected health care cost, since the premium is a blended average rate that does not fully reflect the above-average, increasing costs by age that apply during retirement.

Normal Cost - This is the portion of the Actuarial Present Value of Benefits allocated to a valuation year by the Actuarial Cost Method.

Other Post-employment Benefits ("OPEB") - This refers to post-employment benefits other than pension benefits, including healthcare benefits regardless of the type of plan that provides them, and all other post-employment benefits provided separately from a pension plan, excluding benefits defined as termination benefits or offers.

Past Service Cost - This is a catch-up payment to fund the Unfunded Actuarial Accrued Liability over time (generally 10 to 30 years). Also known as the **Amortization Payment**.

Return on Plan Assets - This is the actual investment return on plan assets during the fiscal year.

Substantive Plan - The terms of the postretirement benefit plan as understood by an employer that provides postretirement benefits and the employees who render services in exchange for those benefits. The substantive plan is the basis for the accounting for the plan.

Trend Rate - This is the rate at which medical and dental costs are assumed to increase over time.

Unfunded Actuarial Accrued Liability - This is the excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

Actuarial Method

The actuarial funding method used is the **Entry Age Normal Cost Method**. Recommended annual contributions consist of two pieces: Normal Cost plus a payment towards the Unfunded Accrued Liability.

The **Normal Cost** is determined by calculating the present value of future benefits for present active Members. This cost is then spread as a level percentage of earnings from entry age to termination as an Active Member. If Normal Costs had been paid at this level for all prior years, a fund would have accumulated. Because this fund represents the portion of benefits that would have been funded to date, it is termed the **Accrued Liability**. In fact, it is calculated by adding the present value of benefits for Retired and Terminated Vested Members to the present value of benefits for Active Members and subtracting the present value of future Normal Costs Contributions.

The **Unfunded Accrued Liability** is the Accrued Liability less the value of any plan assets.

Actuarial Assumptions

Each of the assumptions used in this valuation was set based on industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgement regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

Discount Rate 3.50% (Prior: 4.00%)

Inflation Rate 2.75%

Medical Trend Rate 6.10% - 4.50% over 57 years (Prior: 5.80% - 4.50% over 56 years)

Amortization Growth Rate 3.50%

Healthy Mortality

Teachers#:

Pre-Retirement: RP-2000 adjusted for "white-collar" employment for males and females, projected 22 years with Scale AA. This assumption includes a margin for mortality improvement beyond the valuation date.

Post-Retirement: RP-2000 Healthy Annuitant table for males and females, adjusted for large annuity amounts and projected 17 years with Scale AA. This assumption includes a margin for mortality improvement beyond the valuation date.

Groups 1, 2 & 4: RP-2000 Mortality Table for males and females, and separate tables projected to 2020 with Scale AA for active employees and projected to 2015 with Scale AA for annuitants. This assumption includes a margin for mortality improvement beyond the valuation date.

Disabled Mortality

Teachers#:

RP-2000 Healthy Annuitant table for males and females, adjusted for large annuity amounts and projected 7 years with Scale AA, set forward 3 years for males. This assumption includes a margin for mortality improvement prior to the valuation date.

Groups 1, 2 & 4: RP-2000 Healthy Annuitant Table for males and females, set forward 2 years. This assumption does not include a margin for mortality improvement beyond the valuation date.

Actuarial Assumptions

Turnover

Teachers* Rates based on age, gender and length of service. Sample rates are shown below:

Age	Years of Service					
	0		5		10+	
	Male	Female	Male	Female	Male	Female
20	13.00%	10.00%	5.50%	7.00%	1.50%	5.00%
30	15.00%	15.00%	5.40%	8.80%	1.50%	4.50%
40	13.30%	10.50%	5.20%	5.00%	1.70%	2.20%
50	16.20%	9.80%	7.00%	5.00%	2.30%	2.00%

Groups 1 and 2: Rates are as follows:

Service	Rates
0	15.00%
5	7.60%
10	5.40%
15	3.30%
20	2.00%

Group 4: 1.50% each year for service up to and including 10 years. No turnover is assumed thereafter.

Actuarial Assumptions

Retirement

Teachers#: Rates based on age, gender, length of service and whether the teacher is subject to Retirement Plus (minimum age for retirement is 60 for Teachers hired on or after April 2, 2012):

Age	Not in Retirement Plus			
	Male		Female	
	Service		Service	
	< 20	20 +	< 20	20 +
50	0.0%	2.0%	0.0%	1.0%
51	0.0%	2.0%	0.0%	1.0%
52	0.0%	2.0%	0.0%	1.5%
53	0.0%	2.0%	0.0%	2.0%
54	0.0%	3.0%	0.0%	2.0%
55	3.5%	3.0%	3.5%	4.0%
56	3.5%	3.5%	3.5%	4.0%
57	5.0%	4.0%	3.5%	4.0%
58	5.5%	5.0%	5.0%	6.0%
59	6.0%	6.0%	6.5%	8.0%
60	7.5%	15.0%	8.5%	15.0%
61	12.0%	25.0%	10.0%	20.0%
62	14.0%	30.0%	12.0%	20.0%
63	14.0%	30.0%	12.0%	25.0%
64	14.0%	30.0%	20.0%	30.0%
65	30.0%	30.0%	30.0%	40.0%
66	30.0%	25.0%	30.0%	30.0%
67	30.0%	25.0%	30.0%	30.0%
68	30.0%	25.0%	30.0%	30.0%
69	30.0%	25.0%	30.0%	30.0%
70	100.0%	100.0%	100.0%	100.0%

Actuarial Assumptions

Retirement

Teachers#:

		Retirement Plus				
		Male			Female	
Age	Service			Service		
	< 20	20 - 30	30 +	< 20	20 - 30	30 +
50	0.00%	1.00%	2.00%	0.00%	1.00%	1.50%
51	0.00%	1.00%	2.00%	0.00%	1.00%	1.50%
52	0.00%	1.00%	2.00%	0.00%	1.00%	1.50%
53	0.00%	1.50%	2.00%	0.00%	1.00%	1.50%
54	0.00%	2.50%	2.00%	0.00%	1.00%	2.00%
55	5.00%	3.00%	6.00%	3.00%	3.00%	5.00%
56	5.00%	6.00%	20.00%	3.00%	5.00%	15.00%
57	5.00%	10.00%	40.00%	4.00%	8.00%	35.00%
58	5.00%	15.00%	50.00%	8.00%	10.00%	35.00%
59	10.00%	20.00%	50.00%	8.00%	15.00%	35.00%
60	10.00%	25.00%	40.00%	10.00%	20.00%	35.00%
61	20.00%	30.00%	40.00%	12.00%	25.00%	35.00%
62	20.00%	35.00%	35.00%	12.00%	30.00%	35.00%
63	25.00%	40.00%	35.00%	15.00%	30.00%	35.00%
64	25.00%	40.00%	35.00%	20.00%	30.00%	35.00%
65	25.00%	40.00%	35.00%	25.00%	40.00%	35.00%
66	30.00%	30.00%	40.00%	25.00%	30.00%	35.00%
67	30.00%	30.00%	40.00%	30.00%	30.00%	30.00%
68	30.00%	30.00%	40.00%	30.00%	30.00%	30.00%
69	30.00%	30.00%	40.00%	30.00%	30.00%	30.00%
70	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Actuarial Assumptions

Retirement

Groups 1, 2 & 4: Rates are based on age and gender for Group 1 & 2. Rates are based on age for Group 4:

Age	Hired prior to April 2, 2012			Hired on or after April 2, 2012		
	Groups 1 & 2		Group 4	Groups 1 & 2		Group 4
	Male	Female		Male	Female	
50	1.00%	1.50%	2.00%	0.00%	0.00%	1.00%
51	1.00%	1.50%	2.00%	0.00%	0.00%	1.00%
52	1.00%	2.00%	2.00%	0.00%	0.00%	2.00%
53	1.00%	2.50%	5.00%	0.00%	0.00%	2.00%
54	2.00%	2.50%	7.50%	0.00%	0.00%	2.00%
55	2.00%	5.50%	15.00%	0.00%	0.00%	5.00%
56	2.50%	6.50%	10.00%	0.00%	0.00%	7.50%
57	2.50%	6.50%	10.00%	0.00%	0.00%	15.00%
58	5.00%	6.50%	10.00%	0.00%	0.00%	10.00%
59	6.50%	6.50%	15.00%	0.00%	0.00%	10.00%
60	12.00%	5.00%	20.00%	5.00%	6.50%	10.00%
61	20.00%	13.00%	20.00%	6.50%	6.50%	15.00%
62	30.00%	15.00%	25.00%	20.00%	15.00%	20.00%
63	25.00%	12.50%	25.00%	20.00%	13.00%	20.00%
64	22.00%	18.00%	30.00%	30.00%	15.00%	30.00%
65	40.00%	15.00%	100.00%	25.00%	12.50%	100.00%
66	25.00%	20.00%	100.00%	22.00%	18.00%	100.00%
67	25.00%	20.00%	100.00%	40.00%	25.00%	100.00%
68	30.00%	25.00%	100.00%	30.00%	20.00%	100.00%
69	30.00%	20.00%	100.00%	30.00%	20.00%	100.00%
70	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Actuarial Assumptions

Disability

Teachers[#]: Rates are based on age:

Age	Rates
20	0.004%
30	0.006%
40	0.010%
50	0.050%
60	0.070%

Groups 1, 2 & 4: Rates are based on age:

Age	Groups 1 & 2 Rates	Group 4 Rates
20	0.010%	0.100%
30	0.030%	0.300%
40	0.101%	0.300%
50	0.192%	1.250%

It is assumed that Service-Connected Disabilities are 35% of all disabilities for Teachers, 55% for Groups 1 & 2, and 90% for Group 4.

Pre-Retirement Death 55% of pre-retirement deaths are assumed to be Service-Connected for Teachers[#], and Groups 1 & 2; and 90% for Group 4.

Future Retiree Coverage 60% of active members are assumed to elect coverage at retirement.

Future Dependent Coverage Current active members are assumed to elect dependent coverage at retirement as follows. All female spouses are assumed to be 3 years younger than males.

	Male	Female
Teachers	40%	30%
Groups 1, 2 & 4	50%	50%

Future Post-65 Coverage All current actives and pre-65 retirees are assumed to be covered under a Medicare Supplement plan at age 65.

Valuation of Benefits for Children Benefits attributed to children have been excluded from this valuation for all groups, except Fire and Police, as they were determined to be de minimis.

[#] Certain actuarial demographic assumptions are based on the assumptions used in the January 1, 2014 valuation of the Massachusetts Teachers' Retirement System and the January 1, 2014 valuation of the Bristol County Contributory Retirement System.

Summary of Plan Provisions

This summary is intended only to describe our understanding of the essential features of the benefits that will be provided to future retirees based on copies of bargaining agreements, applicable personnel rules and the benefits being currently provided to retired members. All eligibility requirements and benefit amounts shall be determined in strict accordance with the relevant plan documents. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

Eligibility

Other Post-Employment Benefits for public employees in Massachusetts are governed by Chapter 32B of the Massachusetts General Law. Employees are classified into one of the following three groups depending on position classification:

Group 1: General employees, including clerical, administrative, technical and all other employees not otherwise classified.

Group 2: Certain specified hazardous duty positions.

Group-4: Police officers, firefighters, and other specified hazardous positions.

Hired before April 2, 2012: Service retirement eligibility is attainment of age 55 with 10 years of service (age 55 with no service requirement for Group 4), or completion of 20 years of service regardless of age.

Hired on or after April 2, 2012: Service retirement eligibility is attainment of age 60 with 10 years of service for Group 1; or attainment of age 55 with 10 years of service for Groups 2; or attainment of age 55 for Group 4.

Retired members can elect to continue coverage for self and spouse.

Medical Benefits

Retiree has the option to elect from the following medical coverage:

Pre-65: HMO Blue N.E. or Blue Care Elect Preferred (PPO).

Post-65: Medex 2.

Note: The Town has adopted MGL Chapter 32B Section 18, requiring Medicare eligible retirees to enroll in a Medicare Supplement Plan.

Cost Sharing

Retiree contributions are as follows:

Retiree %
40%

Spouse %
40%

Coverage continues to spouse/dependents upon death of retiree, provided spouse/dependent pays 40% of the premium.

Service-Connected Disability

Same benefits and cost sharing provisions as above are applicable. There are no minimum age or service requirements.

Life Insurance

\$2,000; retiree pays 50% of premium.