Town of Needham

Actuarial Valuation and Review of Other Postemployment Benefits (OPEB) as of June 30, 2015 in accordance with GASB Statements No. 43 and No. 45

REVISED

Segal Consulting

Segal Consulting
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July 7, 2016

Mr. David Davison
Assistant Town Manager/Director of Finance
Town of Needham
1471 Highland Avenue
Needham, MA 02492

Dear Mr. Davison:

We are pleased to submit this revised report on our actuarial valuation of postemployment welfare benefits as of June 30, 2015. This report replaces the report dated April 26, 2016. The calculations herein are conducted under the methodology prescribed by Governmental Accounting Standards Board (GASB) Statements Number 43 and 45. However, the purpose of this report is to calculate an actuarially determined contribution for the Town's Other Postemployment Benefit (OPEB) plan for the fiscal year ending June 30, 2018. Please note that effective for the Town's June 30, 2018 financial statements, the current GASB OPEB statements will be supplanted by Statements 74 and 75. The accounting requirements under those standards will be determined in future valuations. Note that the required accounting calculations for the Town's fiscal year ending June 30, 2016 and 2017 financial statements have previously been determined based on the June 30, 2013 actuarial valuation completed by Buck Consultants, revised to reflect a 7.75% discount rate.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: retiree group benefits program experience differing from that anticipated by the assumptions; changes in 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); and changes in retiree group benefits program provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates, and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements. The scope of the assignment did not include performing an analysis of the potential range of such future measurements.

This report is based on information received from the Town of Needham. The actuarial projections were based on the assumptions and methods described in Exhibit II and on the plan of benefits as summarized in Exhibit III.

We look forward to discussing this with you at your convenience.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:

Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary

Daniel J. Rhodes, FSA, MAAA
Vice President and Consulting Actuary

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IMPORTANT INFORMATION ABOUT ACTUARIAL VALUATIONS

An actuarial valuation is an estimate of future uncertain obligations of a postretirement health plan. As such, it will never forecast the precise future stream of benefit payments. It is an estimated forecast – the actual cost of the plan will be determined by the benefits and expenses paid, not by the actuarial valuation.

In order to prepare a valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. For example, a plan may provide health benefits to post-65 retirees that coordinate with Medicare. If so, changes in the Medicare law or administration may change the plan's costs without any change in the terms of the plan itself. It is important for the Town of Needham to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the plan. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is not necessary to have perfect data for an actuarial valuation: the valuation is an estimated forecast, not a prediction. The uncertainties in other factors are such that even perfect data does not produce a "perfect" result. Notwithstanding the above, it is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** Part of the cost of a plan will be paid from existing assets – the balance will need to come from future contributions and investment income. The valuation is based on the asset values as of the valuation date, provided by the Town of Needham. Some plans include assets, such as private equity holdings, real estate, or hedge funds, that are not subject to valuation by reference to transactions in the marketplace. A snapshot as of a single date may not be an appropriate value for determining a single year's contribution requirement, especially in volatile markets.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal starts by developing a forecast of the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. To determine the future costs of benefits, Segal collects claims, premiums, and enrollment data in order to establish a baseline cost for the valuation measurement, and then develops short- and long-term health care cost rates to project increases in costs in future years. This forecast also requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year, as well as forecasts of the plan's benefits for each of those events. The forecasted benefits are then discounted to a present value, typically based on an estimate of the rate of return that will be achieved the plan's assets, or if there are no assets, a rate of return on the assets of the employer. All of these factors are uncertain and unknowable. Thus, there will be a range of reasonable assumptions, and the results may vary materially based on which assumptions the actuary selects within that range. That is, there is no right answer (except with hindsight). It is important

for any user of an actuarial valuation to understand and accept this constraint. The actuarial model necessarily uses approximations and estimates that may lead to significant changes in our results but will have no impact on the actual cost of the plan. In addition, the actuarial assumptions may change over time, and while this can have a significant impact on the reported results, it does not mean that the previous assumptions or results were unreasonable or wrong.

Given the above, the user of Segal's actuarial valuation (or other actuarial calculations) needs to keep the following in mind:

- The actuarial valuation is prepared for use by the Town of Needham. It includes information for compliance with accounting standards. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement at a specific date — it is not a prediction of a plan's future financial condition. Accordingly, Segal did not perform an analysis of the potential range of financial measurements, except where otherwise noted.
- Sections of this report include actuarial results that are not rounded, but that does not imply precision.
- Critical events for a plan include, but are not limited to, decisions about changes in benefits and contributions. The basis for such decisions needs to consider many factors such as the risk of changes in plan enrollment, emerging claims experience and health care cost trend, not just the current valuation results.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Town of Needham should look to their other advisors for expertise in these areas.
- While Segal maintains extensive quality assurance procedures, an actuarial valuation involves complex computer models and numerous inputs. In the event that an inaccuracy is discovered after presentation of Segal's valuation, Segal may revise that valuation or make an appropriate adjustment in the next valuation.
- Segal's report shall be deemed to be final and accepted by the Town of Needham upon delivery and review. The Town of Needham should notify Segal immediately of any questions or concerns about the final content.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

PURPOSE

This report presents the results of our actuarial valuation of the Town of Needham (the "Employer") postemployment welfare benefit plan as of June 30, 2015. The purpose of this report is to calculate a recommended actuarially determined contribution for the Town's OPEB plan for the fiscal year ending June 30, 2018. We note that in FYE 2018, the current GASB standards for OPEB accounting (43 and 45), will be supplanted by Statements 74 and 75. The new statements require different actuarial methods for calculating OPEB liabilities, and specifically do not address funding of OPEB benefits. As such, the results presented herein are not appropriate for the Town's financial reporting in FYE 2018. These accounting results will be determined in future valuations.

Note that the required accounting calculations for the Town's FYE 2016 and 2017 financial statements have previously been determined based on the June 30, 2013 actuarial valuation completed by Buck Consultants. The original valuation, dated June 10, 2014, used an 8.0% discount rate to calculate the OPEB liability. The valuation was later revised to reflect a 7.75% discount rate. These revised numbers are included in the accounting exhibits shown later in this report.

HIGHLIGHTS OF THE VALUATION

During the fiscal year ending June 30, 2018, we project the Town of Needham will pay benefits (net of retiree contributions) on behalf of retired employees of about $4,173,000. This amount is less than the recommended actuarially determined contribution of approximately $6,072,000. This contribution, and future contributions determined and described in this report, are intended to fund the OPEB liabilities fully by June 30, 2041.

The current GASB OPEB statements provide the method for selecting the investment return assumption (discount rate). If the benefits are fully funded, the discount rate should be based on the estimated long-term investment yield on the investments expected to be used to finance the payment of benefits. GASB Statements 74 and 75 provide for different methods for determining the discount rate used for financial reporting of OPEB liabilities. For purposes of this report, we have used the funded discount rate defined in current Statements 43 and 45.

As of June 30, 2015, the Town of Needham has $18,424,006 in assets which are in the State Retiree Benefits Trust Fund/PRIT. The table below shows the increase in assets, which matches the figures shown in the Town's financial statements.

Reconciliation of OPEB Trust Fund

	Total
Balance as of June 30, 2013	$10,095,258
Balance as of June 30, 2014	15,469,534
Balance as of June 30, 2015	18,424,006

Because the Town of Needham has been making actuarially determined contributions to fund the OPEB liability, we have used a funded discount rate of 7.5%. As noted above, previously a funded 7.75% discount rate was used in the revised July 1, 2013 valuation completed by Buck Consultants.

To determine the amortization payment on the unfunded actuarial accrued liability (UAAL), an amortization period and amortization method must be selected. We have used a 26-year closed amortization of the UAAL, with payments increasing 4.25% per year. This schedule extends the date when the plan will be fully funded from June 30, 2039 (used in the prior valuation) to June 30, 2041.

The funding schedule on page 10 of this report shows the components of the actuarially determined contribution for the Town.

This valuation does not include the potential impact of any future changes due to the Patient Protection and Affordable Care Act (PPACA) and the Health Care and Education Reconciliation Act (HCERA) of 2010 other than the excise tax on high cost health plans beginning in 2020 and those previously adopted as of the valuation date.

Employer decisions regarding plan design, cost sharing between the Employer and its retirees, actuarial cost method, amortization techniques, and integration with Medicare are just some of the decisions that affect the magnitude of OPEB obligations. We are available to assist you with any investigation of such options you may wish to undertake.

KEY VALUATION RESULTS

- The **unfunded actuarial accrued liability (UAAL)** as of June 30, 2015 is $62,384,000 based on an actuarial accrued liability of $80,808,000 and an actuarial value of assets of $18,424,000. Going forward, net unfunded plan obligations will be expected to change due to normal plan operations, which consist of continuing accruals for active members, plus interest on the unfunded actuarial accrued liability, less contributions. Future valuations will analyze the difference between actual and expected unfunded actuarial accrued liabilities.
    - As of June 30, 2015 the ratio of assets to the AAL (the funded ratio) is 22.80%.

      This funded percentage is not necessarily appropriate for assessing the sufficiency of OPEB assets to cover the estimated cost of settling the benefit obligations or the need for or the amount of future contributions.
- The recommended **Actuarially Determined Contribution** for fiscal year 2018 is $6,072,000.

The unfunded liability of $62,384,000 as of June 30, 2015 represents an increase of $13,506,000 from $48,878,000 as calculated from the prior valuation report completed by Buck Consultants, revised to reflect a 7.75% discount rate.

The unfunded liability had been expected to increase by approximately $2,090,000 due to normal plan operations, which consist of continuing accruals for active members, plus interest on the unfunded actuarial accrued liability, less contributions. The greater than expected increase was the net effect of the following:

- An **actuarial experience gain** decreased obligations by $3,578,000. This was the net result of gains and losses due to demographic changes and assets not increasing as expected.
- **Valuation assumption changes** increased obligations by $14,994,000. This was the net result of 1) revising the future trend on medical costs, 2) decreasing the discount rate from 7.75% to 7.50%, 3) changing the participation election percentage for future retirees from 95% of total Town employees to 105% of those currently enrolled in medical benefits, 4) valuing 20% of current vested terminated employees and 5) updating demographic assumptions as described beginning on page 27. The excise tax in this valuation increased the actuarial accrued liability by 2.3% and normal cost by 5.1%. The complete set of assumptions is shown in Exhibit II and the summary of plan provisions is shown in Exhibit III.

ACCOUNTING REQUIREMENTS

The Governmental Accounting Standards Board (GASB) issued Statement Number 43 -- *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans,* and Statement Number 45 -- *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions.* Under these statements, all state and local governmental entities that provide other post employment benefits (OPEB) are required to report the cost of these benefits on their financial statements.

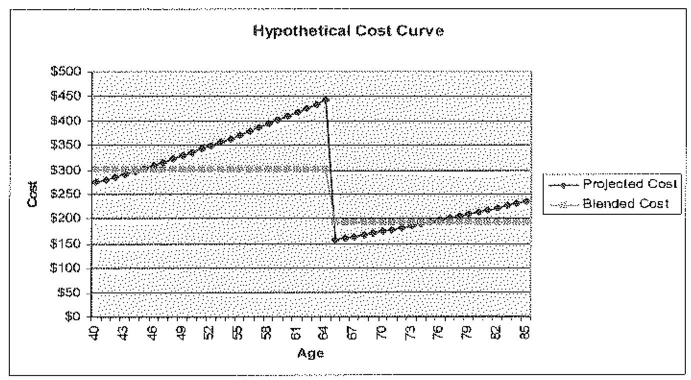
The statements cover postemployment benefits of health, prescription drug, dental, vision and life insurance coverage for retirees; long-term care coverage, life insurance and death benefits that are *not* offered as part of a pension plan; and long-term disability insurance for employees. These benefits, referred to as OPEB, are typically financed on a pay-as-you-go basis. The new standard introduces an accrual-basis accounting requirement; thereby recognizing the employer cost of postemployment benefits over an employee's career. The standards also introduce a consistent accounting requirement for both pension and non-pension benefits.

The total cost of providing postemployment benefits is projected, taking into account assumptions about demographics, turnover, mortality, disability, retirement, health care trends, and other actuarial assumptions. This amount is then discounted to determine the actuarial present value of the total projected benefits (APB). The actuarial accrued liability (AAL) is the portion of the present value of the total projected benefits allocated to years of employment prior to the measurement date. The unfunded actuarial accrued liability (UAAL) is the difference between the AAL and actuarial value of assets in the Plan.

Once the UAAL is determined, the Annual Required Contribution (ARC) is determined as the normal cost (the APB allocated to the current year of service) and the amortization of the UAAL. This ARC is compared to actual contributions made and any difference is reported as the net OPEB obligation (NOO). In addition, required supplementary information (RSI) must be reported, including historical information about the UAAL and the progress in funding the Plan.

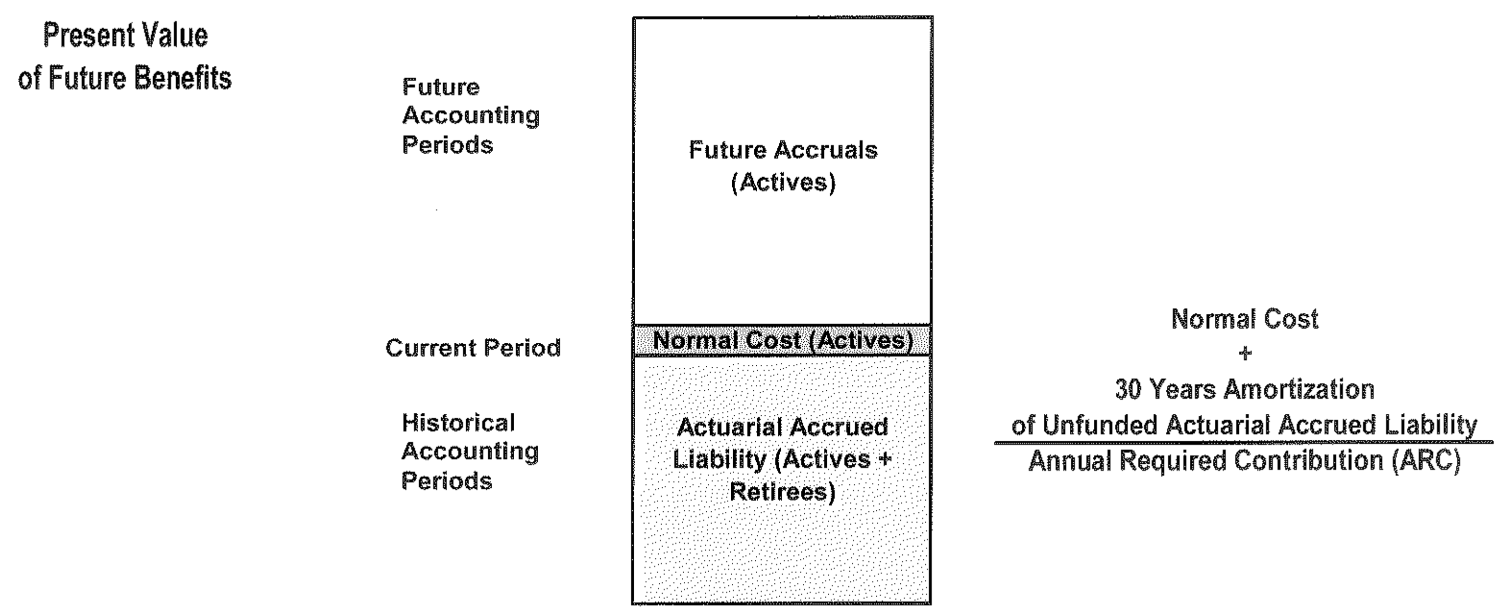
The benefits valued in this report are limited to those described in Exhibit III of Section 4.

The following graph illustrates why a significant accounting obligation may exist even though the retiree contributes most or all of the blended premium cost of the plan. The average cost for retirees is likely to exceed the average cost for the whole group, leading to an implicit subsidy for these retirees. The accounting standard requires the employer to identify and account for this implicit subsidy as well as any explicit subsidies the employer may provide.



This graph shows how the actuarial present value of the total projected benefits (APB) is broken down and allocated to various accounting periods. The exact breakdown depends on the actuarial cost method and amortization methods selected by the employer.

GASB 43/45 Measurement



Net OPEB Obligation = $ARC_1 + ARC_2 + ARC_3 + \ldots\ldots$
$- Contribution_1 - Contribution_2 - Contribution_3 - \ldots\ldots$

Actuarial computations under GASB statements are for purposes of fulfilling certain welfare plan accounting requirements. The calculations shown in this report have been made on a basis consistent with our understanding of GASB. Determinations for purposes other than meeting the financial accounting requirements of GASB may differ significantly from the results reported here.

Calculations are based on the benefits provided under the terms of the substantive plan in effect at the time of the valuation and on the pattern of sharing costs between the employer and plan members. The projection of benefits does not incorporate the potential effect of legal or contractual funding limitations on the pattern of cost sharing between the employer and plan members in the future.

Actuarial calculations reflect a long-term perspective, and the methods and assumptions use techniques designed to reduce short term volatility in accrued liabilities and the actuarial value of assets, if any.

The calculation of an accounting obligation does not, in and of itself, imply that there is any legal liability to provide the benefits valued, nor is there any implication that the Employer is required to implement a funding policy to satisfy the projected expense.

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future, and the actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.

The key results for the current year and prior year are shown here.

SUMMARY OF VALUATION RESULTS
ALL DEPARTMENTS

Measurement Date	June 30, 2015	June 30, 2013
Actuarial Accrued Liability by Participant Category		
1. Current retirees, beneficiaries and dependents	$37,360,267	N/A
2. Current active employees	42,819,614	N/A
3. Current vested terminated employees	627,748	N/A
4. Total actuarial accrued liability: (1) + (2) + (3)	$80,807,629	$64,375,410
5. Actuarial value of assets	18,424,006	15,496,964
6. Unfunded actuarial accrued liability (UAAL): (4) - (5)	$62,383,623	$48,878,446
7. Funded ratio: (5) / (4)	22.80%	24.07%
Actuarially Determined Contribution for fiscal year beginning:	**July 1, 2017**	**July 1, 2015**
8. Normal cost as of beginning of year	$2,317,954	$2,331,251
9. 24-year amortization (increasing at 4.25% per year) of the UAAL	3,754,329	3,005,051
10. Total actuarially determined contribution	$6,072,283	$5,336,302

Notes: Liabilities as of June 30, 2013 and funding contribution for fiscal year beginning July 1, 2015, as reported by prior actuary.
Assumes payment at the beginning of the fiscal year.

FUNDING SCHEDULE

26 Years Closed (7.5% discount rate)

					At Fiscal Year End		
Fiscal Year Ending June 30	(1) Projected Benefit Payments	(2) Normal Cost	(3) Amortization of UAAL	(4) Actuarially Determined Contribution (2) + (3)	(5) Assets	(6) AAL	(7) UAAL (6) – (5)
2016	$3,625,593	$2,102,453	$3,233,849	$5,336,302	$21,783,236	$85,369,243	$63,586,007
2017	3,886,108	2,207,575	3,361,348	5,568,923	25,374,368	90,115,877	64,741,509
2018	4,173,375	2,317,954	3,754,329	6,072,283	29,478,103	95,039,321	65,561,218
2019	4,638,795	2,433,852	3,913,888	6,347,740	33,703,176	99,974,056	66,270,880
2020	5,101,443	2,555,545	4,080,228	6,635,773	38,075,082	104,930,032	66,854,950
2021	5,519,323	2,683,322	4,253,638	6,936,960	42,665,389	109,961,800	67,296,411
2022	5,895,785	2,817,488	4,434,418	7,251,906	47,548,212	115,124,855	67,576,643
2023	6,221,829	2,958,362	4,622,880	7,581,242	52,813,234	120,488,529	67,675,295
2024	6,623,539	3,106,280	4,819,353	7,925,633	58,426,850	125,996,988	67,570,138
2025	6,947,240	3,261,594	5,024,175	8,285,769	64,513,014	131,749,924	67,236,910
2026	7,290,134	3,424,674	5,237,703	8,662,377	71,104,973	137,754,121	66,649,148
2027	7,654,641	3,595,908	5,460,305	9,056,213	78,236,774	144,014,780	65,778,006
2028	8,037,373	3,775,703	5,692,368	9,468,071	85,949,383	150,541,444	64,592,061
2029	8,439,241	3,964,488	5,934,294	9,898,782	94,286,786	157,343,886	63,057,100
2030	8,861,203	4,162,712	6,186,501	10,349,213	103,296,208	164,432,102	61,135,894
2031	9,304,263	4,370,848	6,449,427	10,820,275	113,028,354	171,816,306	58,787,952
2032	9,769,477	4,589,390	6,723,528	11,312,918	123,537,658	179,506,914	55,969,256
2033	10,257,950	4,818,860	7,009,278	11,828,138	134,882,562	187,514,538	52,631,976
2034	10,770,848	5,059,803	7,307,172	12,366,975	147,125,800	195,849,964	48,724,164
2035	11,309,390	5,312,793	7,617,727	12,930,520	160,334,719	204,524,139	44,189,420
2036	11,874,860	5,578,433	7,941,480	13,519,913	174,581,613	213,548,148	38,966,535
2037	12,468,603	5,857,355	8,278,993	14,136,348	189,944,086	222,933,193	32,989,107
2038	13,092,033	6,150,223	8,630,851	14,781,074	206,505,438	232,690,563	26,185,125
2039	13,746,635	6,457,734	8,997,662	15,455,396	224,355,082	242,831,605	18,476,523
2040	14,433,966	6,780,621	9,380,062	16,160,683	243,588,993	253,367,688	9,778,695
2041	15,155,665	7,119,652	9,778,715	16,898,367	264,310,184	264,310,184	-

Notes: Benefit payments are assumed to be payable in the middle of the fiscal year.
Contributions are assumed to be made at the beginning of the fiscal year.
Normal cost is projected to increase 5.0% per year and does not reflect the future impact of pension reform for new hires.
Amortization payments calculated to increase 4.25% per year.
Assets are assumed to return 7.5% per year.
Total Funding Requirement for fiscal 2016 and fiscal 2017 are set to previously budgeted amounts.

DEPARTMENT RESULTS

Actuarial Accrued Liability (AAL) and Annual Required Contribution – 7.5% discount rate

	Fire	Other	Police	RTS	School	Sewer	Water	Total
Actuarial Accrued Liability by Participant Category								
1. Current retirees, beneficiaries and dependents	$4,978,804	$6,631,806	$3,155,619	$89,493	$21,571,270	$432,145	$501,129	$37,360,267
2. Current active employees	5,846,276	7,967,181	4,184,607	150,108	23,155,991	772,958	742,493	42,819,614
3. Current vested terminated employees	0	585,775	0	0	41,973	0	0	627,748
4. Total actuarial accrued liability: (1) + (2) + (3)	$10,825,081	$15,184,762	$7,340,226	$239,601	$44,769,235	$1,205,103	$1,243,622	$80,807,629
5. Actuarial value of assets	2,468,100	3,462,100	1,673,559	54,629	10,207,312	274,762	283,544	18,424,006
6. Unfunded actuarial accrued liability (UAAL): (4) - (5)	$8,356,981	$11,722,662	$5,666,667	$184,972	$34,561,923	$930,341	$960,078	$62,383,623
7. Funded ratio: (5) / (4)	22.80%	22.80%	22.80%	22.80%	22.80%	22.80%	22.80%	22.80%
Actuarially Determined Contribution for fiscal year beginning July 1, 2017:								
8. Normal cost as of beginning of year	$149,502	$378,963	$177,532	$18,349	$1,522,342	$35,502	$35,764	$2,317,954
9. 24-year amortization (increasing 4.25% per year) of the UAAL	502,934	705,485	341,027	11,132	2,079,983	55,989	57,779	3,754,329
10. Total actuarially determined contribution	$652,436	$1,084,448	$518,559	$29,481	$3,602,325	$91,491	$93,543	$6,072,283

Notes: Assets are allocated in proportion to accrued liability.
Assumes payment at the beginning of the fiscal year.

July 7, 2016

ACTUARIAL CERTIFICATION

This is to certify that Segal Consulting, a Member of The Segal Group, Inc. has conducted an actuarial valuation of certain benefit obligations of the Town of Needham other postemployment benefit programs as of June 30, 2015, in accordance with generally accepted actuarial principles and practices. Although the actuarial calculations in this report are not being used for plan accounting requirements, the calculations presented in this report have been made on a basis consistent with our understanding of GASB Statements Number 43 and 45 for the determination of the liability for postemployment benefits other than pensions.

The actuarial valuation is based on the plan of benefits verified by the Town of Needham and on participant, premium and financial data provided by the Town of Needham or from vendors employed by the Town of Needham. Segal Consulting does not audit the data provided. The accuracy and comprehensiveness of the data is the responsibility of those supplying the data. Segal, however, does review the data for reasonableness and consistency.

The actuarial computations made are for purposes of funding the Town's postemployment benefits liabilities. Determinations for other purposes may be significantly different from the results reported here. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security at termination or adequacy of funding an ongoing plan.

To the best of our knowledge, this report is complete and accurate with respect to the benefit obligations addressed. The signing actuaries are members of the Society of Actuaries, the American Academy of Actuaries, and other professional actuarial organizations and collectively meet their "General Qualification Standards for Statements of Actuarial Opinion" to render the actuarial opinion contained herein. Further, in our opinion, the assumptions as approved by the Town of Needham are reasonably related to the experience and expectations of the postemployment benefit programs.

Kathleen A. Riley, FSA, MAAA, EA
Senior Vice President and Actuary

Daniel J. Rhodes, FSA, MAAA
Vice President and Consulting Actuary

CHART 1

Required Supplementary Information – Schedule of Employer Contributions

Fiscal Year Ended June 30,	Annual OPEB Costs	Actual Contributions	Percentage Contributed
2009	$3,102,311	$3,102,311	100.0%
2010	3,446,556	3,446,556	100.0%
2011	3,626,375	3,626,375	100.0%
2012	3,906,275	4,406,275	112.8%
2013	4,523,887	4,923,887	108.8%
2014	4,710,209	5,838,866	124.0%
2015	5,085,671	5,300,198	104.2%
2016	5,305,907	5,336,302	100.6%
2017	5,542,270	5,568,923	100.5%

Notes: 2009 – 2015 information as shown in the Town's financial statements.
Annual OPEB Costs for fiscal 2016 and fiscal 2017 are based on the June 30, 2013 actuarial valuation completed by Buck Consultants, revised to reflect a 7.75% discount rate.

This schedule of funding progress presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

CHART 2

Required Supplementary Information – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]
06/30/2005	$2,131,044	$43,172,705	$41,041,661	4.9%	$51,915,780	79.1%
06/30/2007	3,075,317	46,672,308	43,596,991	6.6%	59,616,565	73.1%
06/30/2009	5,008,484	48,888,127	43,879,643	10.2%	61,582,295	71.3%
06/30/2011	6,423,760	59,122,322	52,698,562	10.9%	60,859,276	86.6%
06/30/2013	15,496,964	64,375,410	48,878,446	24.1%	68,551,814	71.3%
06/30/2015	18,424,006	80,807,629	62,383,623	22.8%	82,973,387	75.2%

Notes: 2005 – 2011 information as shown in the Town's financial statements.
2013 information changed to match figure shown in the July 1, 2013 actuarial valuation complete by Buck Consultants, revised to reflect a 7.75% discount rate.
2015 information not used to determine FYE 2016 or 2017 Annual Required Contribution.

CHART 3

Required Supplementary Information – Net OPEB Obligation/(Asset) (NOO/NOA)

Fiscal Year Ended June 30,	Annual Required Contribution (a)	Interest on Existing NOO/(NOA) (b)	ARC Adjustment (c)	Annual OPEB Cost (a) + (b) + (c) (d)	Actual Contribution Amount (e)	Net Increase in NOO/(NOA) (d) - (e) (f)	NOO/NOA as of Following Date (g)
2009	$3,102,311	$0	$0	$3,102,311	$3,102,311	$0	$0
2010	3,446,556	0	0	3,446,556	3,446,556	0	0
2011	3,626,375	0	0	3,626,375	3,626,375	0	0
2012	3,906,275	0	0	3,906,275	4,406,275	(500,000)	(500,000)
2013	4,523,887	0	0	4,523,887	4,923,887	(400,000)	(900,000)
2014	4,727,462	(72,000)	54,747	4,710,209	5,838,866	(1,128,657)	(2,028,657)
2015	5,113,405	(137,994)	110,260	5,085,671	5,300,198	(214,527)	(2,243,184)
2016	5,336,302	(173,847)	143,452	5,305,907	5,336,302	(30,395)	(2,273,579)
2017	5,568,923	(176,202)	149,549	5,542,270	5,568,923	(26,653)	(2,300,232)

Notes: 2009 – 2015 information as shown in the Town's financial statements.
Annual OPEB Costs for fiscal 2016 and fiscal 2017 are based on the June 30, 2013 actuarial valuation completed by Buck Consultants, revised to reflect a 7.75% discount rate.

This exhibit summarizes the participant data used for the current and prior valuations.

EXHIBIT I
Summary of Participant Data

	June 30, 2015	June 30, 2013
Active employees covered for medical benefits		
Number of employees		
Male	333	N/A
Female	491	N/A
Total	824	1,117
Average age	45.8	N/A
Average service	11.2	N/A
Current vested terminated individuals		
Number of individuals	18	N/A
Average age	57.3	N/A
Retired employees, spouses and beneficiaries covered for medical benefits		
Number of individuals	904	634
Average age	74.2	N/A

Notes: June 30, 2015 counts include 59 surviving spouses that pay 100% of the required premium for coverage.
June 30, 2013 information as shown in the prior valuation report completed by Buck Consultants, dated June 10, 2014.
June 30, 2013 retiree count of 634 does not include spouses.

EXHIBIT II
Actuarial Assumptions and Actuarial Cost Method

Data: Detailed census data, premium rates, financial data and summary plan descriptions for postemployment welfare benefits were provided by the Town of Needham.

Actuarial Cost Method: Projected Unit Credit – For active employees, benefits are allocated from date of hire to first eligibility age.

Per Capita Cost Development: Per capita costs were based on the fully insured premium rates effective January 1, 2016 for Medicare plans and July 1, 2015 for non-Medicare plans. Premiums were combined by taking a weighted average based on the number of participants in each plan, and were then trended to the midpoint of the valuation year at assumed trend rates. For plans that are not community rated, actuarial factors were applied to the premium to estimate individual retiree and spouse costs by age and by gender.

Measurement Date: June 30, 2015

The results of the June 30, 2015 actuarial valuation were used to determine the recommended funding amount for the fiscal year ending June 30, 2018. Assets and liabilities were rolled forward from June 30, 2015 to June 30, 2018 using standard actuarial techniques.

Expected Return on Assets: 7.5% (previously, 7.75%)

The long-term expected rate of return on OPEB investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce a 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.

Discount Rate: 7.5% (previously, 7.75%). Funded discount rate is equal to expected return on assets.

Mortality Rates:

Pre-Retirement (Non-Teachers)	RP-2000 Combined Healthy Mortality Table projected generationally with Scale AA
Healthy (Non-Teachers)	RP-2000 Combined Healthy Mortality Table projected generationally with Scale AA
Disabled (Non-Teachers)	RP-2000 Combined Healthy Mortality Table set forward 2 years projected generationally with Scale AA
Pre-Retirement (Teachers)	RP-2014 Employee Mortality Table projected generationally with Scale BB2D from 2014
Healthy (Teachers)	RP-2014 Healthy Annuitant Mortality Table projected generationally with Scale BB2D from 2014
Disabled (Teachers)	RP-2014 Healthy Annuitant Mortality Table set forward 4 years projected generationally with Scale BB2D from 2014
	The mortality tables reasonably reflect the projected mortality experience of the Plan as of the measurement date based on historical and current demographic data. The mortality tables were then adjusted to future years using generational projection under Scale AA to reflect future mortality improvement.

Termination Rates before Retirement:

Groups 1 and 2 (excluding Teachers) - Rate per year (%)

Age	Mortality Male	Mortality Female	Disability
20	0.03	0.02	0.01
25	0.04	0.02	0.02
30	0.04	0.03	0.03
35	0.08	0.05	0.06
40	0.11	0.07	0.10
45	0.15	0.11	0.15
50	0.21	0.17	0.19
55	0.36	0.27	0.24
60	0.67	0.51	0.28

Notes: Mortality rates do not reflect generational projection.
55% of the rates shown represent accidental disability and death.

Group 4 - Rate per year (%)

Age	Mortality Male	Mortality Female	Disability
20	0.03	0.02	0.10
25	0.04	0.02	0.20
30	0.04	0.03	0.30
35	0.08	0.05	0.30
40	0.11	0.07	0.30
45	0.15	0.11	1.00
50	0.21	0.17	1.25
55	0.36	0.27	1.20
60	0.67	0.51	0.85

Notes: Mortality rates do not reflect generational projection.
90% of the rates shown represent accidental disability and death.

Teachers - Rate per year (%)

	Mortality		
Age	**Male**	**Female**	**Disability**
20	0.04	0.02	0.00
25	0.05	0.02	0.01
30	0.05	0.02	0.01
35	0.05	0.03	0.01
40	0.06	0.04	0.01
45	0.10	0.07	0.03
50	0.17	0.11	0.05
55	0.28	0.17	0.07
60	0.47	0.24	0.07

Notes: Mortality rates do not reflect generational projection.
35% of the rates shown represent accidental disability.
55% of the death rates shown represent accidental death.

Withdrawal Rates:

Rate per year (%)

Years of Service	Groups 1 and 2	Years of Service	Group 4
0	15.0	0 – 10	1.5
1	12.0	11+	0.0
2	10.0		
3	9.0		
4	8.0		
5	7.6		
6	7.5		
7	6.7		
8	6.3		
9	5.9		
10	5.4		
11	5.0		
12	4.6		
13	4.1		
14	3.7		
15	3.3		
16 – 20	2.0		
21 – 29	1.0		
30+	0.0		

Teachers - Rate per year (%)

	0 Years of Service		5 Years of Service		10+ Years of Service	
Age	Male	Female	Male	Female	Male	Female
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

Retirement Rates:

	Rate per year (%)			
	Groups 1 and 2		Group 4	
Age	Male	Female	Age	Male and Female
50	1.0	1.5	45	1.0
51	1.0	1.5	46	1.0
52	1.0	2.0	47	1.0
53	1.0	2.5	48	1.0
54	2.0	2.5	49	1.0
55	2.0	5.5	50	2.0
56	2.5	6.5	51	2.0
57	2.5	6.5	52	2.0
58	5.0	6.5	53	5.0
59	6.5	6.5	54	7.5
60	12.0	5.0	55	15.0
61	20.0	13.0	56	10.0
62	30.0	15.0	57	10.0
63	25.0	12.5	58	10.0
64	22.0	18.0	59	15.0
65	40.0	15.0	60	20.0
66	25.0	20.0	61	20.0
67	25.0	20.0	62	25.0
68	30.0	25.0	63	25.0
69	30.0	20.0	64	30.0
70	100.0	100.0	65	100.0

Teachers - Rate per year (%)

	Years of Service					
	Less than 20		20 – 29		30 or more	
Age	Male	Female	Male	Female	Male	Female
50 - 52	- -	- -	1.0	1.0	2.0	1.5
53	- -	- -	1.5	1.0	2.0	1.5
54	- -	- -	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

Dependents: Demographic data was available for spouses of current retirees. For future retirees, husbands were assumed to be three years older than their wives. For future retirees who elect to continue their health coverage at retirement, 60% are assumed to have a covered spouse at retirement.

Per Capita Health Costs: Fiscal year 2015 - 2016 medical and prescription drug claims costs are shown in the table below for retirees and for spouses at selected ages. These costs are net of deductibles and other benefit plan cost sharing provisions.

	Non-Medicare Plans				Medicare Supplement Plans			
	Retiree		Spouse		Retiree		Spouse	
Age	Male	Female	Male	Female	Male	Female	Male	Female
45	$8,429	$10,574	$5,228	$7,893	N/A	N/A	N/A	N/A
50	10,005	11,395	6,988	9,150	N/A	N/A	N/A	N/A
55	11,881	12,267	9,351	10,591	N/A	N/A	N/A	N/A
60	14,110	13,222	12,518	12,284	N/A	N/A	N/A	N/A
65	16,758	14,244	16,758	14,244	$3,495	$2,971	$3,495	$2,971
70	19,423	15,350	19,423	15,350	4,051	3,201	4,051	3,201
75	20,931	16,523	20,931	16,523	4,365	3,446	4,365	3,446
80	22,540	17,814	22,540	17,814	4,701	3,715	4,701	3,715

Medicare Advantage Plan: $3,069

Weighted Average Annual Retiree Contribution Amount:

	Retiree	Surviving Spouse
Non-Medicare:	$3,351	$11,149
Medicare Supplement:	1,457	3,812
Medicare Advantage Plan:	1,534	3,069

Health Care Cost Trend Rates:

Health care trend measures the anticipated overall rate at which health plan costs are expected to increase in future years. The rates shown below are "net" and are applied to the net per capita costs shown above. The trend shown for a particular plan year is the rate that is applied to that year's cost to yield the next year's projected cost.

Year Ending June 30	Non-Medicare	Medicare
2016	7.6%	9.0%
2017	7.5%	8.5%
2018	7.0%	8.0%
2019	6.5%	7.5%
2020	6.0%	7.0%
2021	5.5%	6.5%
2022	5.0%	6.0%
2023	5.0%	5.5%
2024 & later	5.0%	5.0%

The trend rate assumptions were developed using Segal's internal guidelines, which are established each year using data sources such as the 2015 Segal Health Trend Survey, internal client results, trends from other published surveys prepared by the S&P Dow Jones Indices, consulting firms and brokers, and CPI statistics published by the Bureau of Labor Statistics.

First-year trend for Non-Medicare plans reflects known premium increases for the fiscal year ending June 30, 2017.

Retiree Contribution Increase Rate:

Non-Medicare and Medicare retiree contributions for medical and prescription drug coverage are expected to increase with the respective medical trends shown above.

Participation and Coverage Election:

105% of active employees with coverage are assumed to elect retiree coverage.

100% of retirees over age 65 are assumed to remain with their current medical plan for life.

For future retirees hired before 1986 and current retirees under age 65, 90% are assumed to be eligible for Medicare and are assumed to enroll in a Medicare Supplement plan upon reaching age 65, 5% are assumed to be eligible for Medicare and are assumed to enroll in a Medicare Advantage Plan and 5% are assumed to be ineligible for Medicare and to remain enrolled in a non-Medicare plan (previously, 100% were assumed to be eligible for Medicare).

For future retirees hired after 1986, 95% are assumed to be eligible for Medicare and are assumed to enroll in a Medicare Supplement Plan upon reaching age 65 and 5% were assumed to be eligible for Medicare and were assumed to enroll in a Medicare Advantage Plan upon reaching age 65.

20% of current and future terminated vested participants are assumed to enroll in medical and dental coverage at age 55.

Plan Design: Development of plan liabilities was based on the substantive plan of benefits in effect as described in Exhibit III.

Administrative Expenses: Administrative expenses are assumed to be included in the fully insured premium rates.

Missing Participant Data: A missing census item for a given participant was assumed to equal the average value of that item over all other participants of the same status for whom the item is known.

Health Care Reform Assumption: This valuation does not include the potential impact of any future changes due to the Patient Protection and Affordable Care Act (PPACA) and the Health Care and Education Reconciliation Act (HCERA) of 2010 other than the excise tax on high cost health plans beginning in 2020 (reflected with this valuation) and those previously adopted as of the valuation date. The excise tax in this valuation increased the actuarial accrued liability by 2.3% and normal cost by 5.1%.

Demographic Assumptions: The significant demographic assumptions used in this valuation for non-teachers are the same as used in the Town of Needham Contributory Retirement System Actuarial Valuation and Review as of January 1, 2015, dated November 20, 2015 completed by Segal Consulting. The significant demographic assumptions used in this valuation for teachers are the same as used in the Teachers' Retirement System Actuarial Valuation Report as of January 1, 2015, dated September 18, 2015 completed by PERAC. A review of the demographic assumptions is beyond the scope of this assignment; however, we have no reason to doubt the reasonableness of the assumptions.

The percent married and enrollment elections were based on the experience of the Town and the experience of similar plans.

Assumption Changes since Prior Valuation:

The discount rate was decreased from a funded discount rate of 7.75% to a funded discount rate of 7.5% to reflect a lower expected return on assets in the OPEB trust.

The per capita health costs were updated to reflect current experience.

The Medicare and non-Medicare trend assumptions were revised to reflect current experience and future expectations.

The excise tax on high cost health plans beginning in 2020 was recalculated with this valuation.

The enrollment election was revised for current retirees under the age of 65 and future retirees hired before 1986 based on a review of recent experience.

The participation election percentage for future retirees was increased from 95% of total Town employees to 105% of those currently enrolled in medical benefits based on a review of recent experience. In addition, 20% (previously 0%) of current inactive vested participants were assumed to elect coverage at age 55.

The mortality assumption for teachers was changed from the RP-2000 Combined Healthy Mortality Tables projected generationally with Scale AA to the RP-2014 Employee and Healthy Annuitant Mortality Tables projected generationally with Scale BB2D from 2014.

The mortality assumption for disabled teachers was changed from the RP-2000 Combined Healthy Mortality Table set forward 2 years projected to 2021 with Scale AA to the RP-2014 Healthy Annuitant Mortality Table set forward 4 years, projected generationally with Scale BB2D from 2014.

The termination, retirement and disability rates for teachers were changed from those published in the Experience Study Analysis Massachusetts Teachers' Retirement System: 2000-2005 to those used in the Teachers' Retirement System Actuarial Valuation Report as of January 1, 2015, dated September 18, 2015.

EXHIBIT III

Summary of Plan

This exhibit summarizes the major benefit provisions as included in the valuation. To the best of our knowledge, the summary represents the substantive plans as of the measurement date. It is not intended to be, nor should it be interpreted as, a complete statement of all benefit provisions.

Eligibility:

Retired and receiving a pension from the Town of Needham Contributory Retirement System or the Massachusetts Teachers' Retirement System.

Members hired before April 2, 2012

Group 1 and Group 2 (including Teachers):

- Retirees with at least 10 years of creditable service are eligible at age 55;
- Retirees with at least 20 years of creditable service are eligible at any age.

Group 4

- Retirees are eligible at age 55;
- Retirees with at least 20 years of creditable service are eligible at any age.

Members hired on or after April 2, 2012

Group 1 (including Teachers):

- Retirees with at least 10 years of creditable service are eligible at age 60.

Group 2

- Retirees with at least 10 years of creditable service are eligible at age 55.

Group 4

- Retirees are eligible at age 55;
- Retirees with at least 10 years of creditable service are eligible at age 50.

Disability: Accidental (job-related) Disability has no age or service requirement. Ordinary (non-job related) Disability has no age requirement but requires 10 years of creditable service.

	Pre-Retirement Death: Surviving spouses of members who die in active service on Accidental (job-related) Death are eligible at any age. Surviving spouses of members who die in active service on Ordinary (non-job related) Death are eligible after two years of service. **Post-Retirement Death:** Surviving spouse is eligible.
Benefit Types:	The Town of Needham participates in the West Suburban Health Group. Medical and prescription drug benefits are provided to all eligible retirees through plans offered by Harvard Pilgrim, Blue Cross Blue Shield of Massachusetts, Tufts and Fallon Health. The Town of Needham pays 50% of the retiree life insurance premium of $2,000 face value life insurance.
Duration of Coverage:	Lifetime.
Dependent Benefits:	Medical and Prescription Drugs. Surviving spouses pay 100% of the required premium for coverage.
Dependent Coverage:	Benefits are payable to a spouse for their lifetime, regardless of when the retirees dies.
MGL Chapter 32B, Section 18A:	Adopted October 28, 1991
Retiree Contributions:	Premium rates and retiree contributions as of July 1, 2015 and January 1, 2016 are summarized below:

	Subscribers							
	Active	Retiree	Total	*65 and over**	Monthly Premium (eff. 7/1/2015)	Town cost	Retiree cost	Retiree Cost %
Non-Medicare Actives and Retirees								
HPHC Rate Saver								
Individual	265	41	306	*14*	$736.00	$563.04	$172.96	23.50%
Family	360	27	387	*2*	$1,918.00	$1,323.42	$594.58	31.00%
Tufts Rate Saver								
Individual	54	14	68	*8*	$797.00	$594.56	$202.44	25.40%
Family	50	4	54	*1*	$2,088.00	$1,332.14	$755.86	36.20%
BCBS Network Blue Rate Saver								
Individual	26	15	41	*10*	$843.00	$627.19	$215.81	25.60%
Family	31	2	33	*0*	$2,261.00	$1,492.26	$768.74	34.00%
Fallon Direct Care Rate Saver								
Individual	2	0	2	*0*	$570.00	$436.05	$133.95	23.50%
Family	3	0	3	*0*	$1,531.00	$1,056.39	$474.61	31.00%
Fallon Select Care Rate Saver								
Individual	13	0	13	*0*	$611.00	$467.42	$143.59	23.50%
Family	19	2	21	*0*	$1,647.00	$1,136.43	$510.57	31.00%
HPHC PPO								
Individual	0	4	4	*3*	$2,268.00	$1,134.00	$1,134.00	50.00%
Family	1	0	1	*0*	$5,036.00	$2,518.00	$2,518.00	50.00%
Non-Medicare Total	824	109	933	38				

	Subscribers						
	Active	Retiree	Total	Monthly Premium (eff. 1/1/2016)	Town cost	Retiree cost	Retiree Cost %
Medicare Retirees - Experience Rated							
Medex	N/A	132	132	$360.00	$180.00	$180.00	50.00%
MBS	N/A	80	80	$313.20	$212.98	$100.22	32.00%
Tufts Medicare Plus	N/A	209	209	$321.00	$218.28	$102.72	32.00%
HPHC Medicare Enhance	N/A	8	8	$342.00	$171.00	$171.00	50.00%
Medicare Advantage Plans							
Tufts Medicare Preferred	N/A	35	35	$267.00	$133.50	$133.50	50.00%
Fallon Senior Plan	N/A	0	0	$310.00	$155.00	$155.00	50.00%
Medicare Total		464	464				
Retiree Total**		573					

* 38 of 502 over-65 retirees are in a non-Medicare plan.
** In addition, there are 331 spouses of retirees covered under an individual or family policy.

Retiree Life: $2,000

Plan Changes Since the Prior Valuation: No changes to the eligibility requirements for retiree medical coverage. Any changes in specific benefit plan design features or retiree contributions since the prior valuation (which was completed by another firm) are reflected in the per capita claims costs.

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