



TOWN OF LITTLETON, MASSACHUSETTS

OTHER POSTEMPLOYMENT BENEFITS PROGRAM

ACTUARIAL VALUATION

July 1, 2014

Prepared by:

Linda L. Bournival, FSA, EA, MAAA
KMS Actuaries, LLC
Fellow, Society of Actuaries
Enrolled Actuary
Member, American Academy of Actuaries

and

Christopher E. Bean, ASA, MAAA
DBR Group, Inc.
Associate, Society of Actuaries
Member, American Academy of Actuaries



October 23, 2015

Mr. Steven Venuti
Treasurer
Town of Littleton
P.O. Box 1305
Littleton, MA 01460

Dear Steve:

Enclosed is our report summarizing the results of an actuarial valuation of the Town of Littleton's Other Postemployment Benefits (OPEB) as of July 1, 2014. Our valuation was performed in accordance with the provisions contained in the GASB Statement No. 45, Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions (GASB 45).

A summary of the valuation results is shown in Section 1. The principal results of our valuation are summarized in Section 2. The Plan Provisions and Actuarial Assumptions and Methods are shown in Sections 6 and 7, respectively. Section 8 summarizes the demographic profile of active employees and retirees.

The required disclosures under GASB 45 are presented in Section 3 for the Town (including the Water Department), the Municipal Electric Light Department and the total Town. The results for the Municipal Electric Light Department are not part of this valuation but are provided from a separate valuation report prepared as of January 1, 2014.

Our best estimate health care cost trend assumptions are based on recent experience and anticipated future cost increases under the Town of Littleton medical plans. Section 5 illustrates the sensitivity of actuarial accrued liability and normal cost to a one percentage increase and decrease in the health care cost trend assumption for each future year.

Our actuarial valuation is based on a discount rate of 5.5% compounded annually. To illustrate the impact on cost of fully prefunding the Town's benefit liabilities, our report also includes valuation results based on an alternative 7.5% discount rate.

We also provide 30-year forecasts of the OPEB liability under a partial prefunding arrangement and a fully-funded arrangement as well as a 10-year forecast of the Annual OPEB Cost and the Net OPEB Obligation in Section 4.

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

814 Elm Street, Suite 204 · Manchester, NH 03101 · p: (603) 792-9494 · f: (603) 792-9492 · lindab@kmsactuaries.com · kmsactuaries.com

Mr. Steven Venuti
October 23, 2015
Page 2

Our calculations were based on participant census data and other information provided by the Town of Littleton and the benefit provisions of the medical plans as described in the benefit summaries. Our valuation is also based on medical plan rates provided by the Town of Littleton.

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.

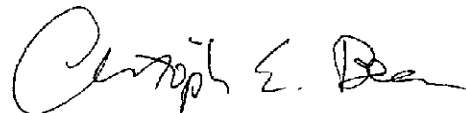
We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

We appreciate this opportunity to be of service to the Town of Littleton. We are available to answer any questions with respect to our valuation.

Respectfully submitted,



Linda L. Bournival, FSA, EA, MAAA
Member, American Academy of Actuaries
603-792-9494



Christopher E. Bean, ASA, MAAA
Member, American Academy of Actuaries
508-628-9022

TABLE OF CONTENTS

ACTUARIAL CERTIFICATION	1
SECTION 1 - SUMMARY	2
SECTION 2 - PRINCIPAL VALUATION RESULTS	6
TABLE 2.1 - OPEB TRUST ASSETS	
TABLE 2.2 - ACTUARIAL ACCRUED LIABILITY	
TABLE 2.3 - NORMAL COST	
TABLE 2.4 - ANNUAL REQUIRED CONTRIBUTION AND ANNUAL OPEB COST	
SECTION 3 - GASB 45 ACCOUNTING DISCLOSURE	10
SECTION 4 - FORECASTS	13
TABLE 4.1 - FUNDING PAY AS YOU GO PLUS OPEB TRUST CONTRIBUTIONS	
TABLE 4.2 - FUNDING THE ANNUAL REQUIRED CONTRIBUTIONS	
TABLE 4.3 - ANNUAL OPEB COST AND NET OPEB OBLIGATION	
SECTION 5 - SENSITIVITY TO HEALTH CARE COST TREND RATE	17
TABLE 5.1 - ACTUARIAL ACCRUED LIABILITY	
TABLE 5.2 - NORMAL COST	
SECTION 6 - PLAN PROVISIONS	19
SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS	20
SECTION 8 - PLAN MEMBER INFORMATION	27
TABLE 8.1 - ACTIVE EMPLOYEES BY AGE and YEARS OF SERVICE	
TABLE 8.2 - RETIRED PLAN PARTICIPANTS and SURVIVORS	
SECTION 9 - GOVERNMENTAL ACCOUNTING STANDARDS BOARD STATEMENT NO. 45 GLOSSARY OF TERMS	29
SECTION 10 - RESULTS BY SUBGROUP	31

ACTUARIAL CERTIFICATION

This report presents the results of the Actuarial Valuation for the Town of Littleton Postemployment Benefits Other Than Pensions as of July 1, 2014. The report presents the accounting and financial reporting information in accordance with Statement Number 45 of the Governmental Accounting Standards Board (GASB 45).

This valuation was performed using employee data and financial information provided to us by the Town. Although we did not audit the data used in the valuation, we believe that the information is complete and reliable.

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 Retirement System and Massachusetts Teachers Retirement System's actuaries for the Retirement System pension valuations.

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

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

The undersigned credentialed actuaries are Members of the American Academy of Actuaries and together 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,



Linda L. Bournival, FSA, EA, MAAA
Member, American Academy of Actuaries
603-792-9494

Christopher E. Bean, ASA, MAAA
Member, American Academy of Actuaries
508-628-9022

SECTION 1 - SUMMARY

BACKGROUND

The Town of Littleton provides postemployment medical benefits to Town retirees and their covered dependents. The Town provides benefits as follows:

- ◆ Group 1 employees hired before April 2, 2012: retire after attaining age 55 with 10 or more years of service or any age with 20 or more years of service
- ◆ Group 1 employees hired after April 1, 2012: retire after attaining age 60 with 10 or more years of service
- ◆ Group 4 employees hired before April 2, 2012: retire after attaining age 55 or any age with 20 or more years of service
- ◆ Group 4 employees hired after April 1, 2012: retire after attaining age 55

Medical coverage continues to the spouse after the death of the retiree provided the spouse makes the required contributions.

GASB 45

The Governmental Accounting Standards Board (GASB) is responsible for establishing accounting standards for governmental entities. Calculations developed in accordance with GASB standards are required when providing financial statements.

GASB believes that postemployment benefits are a form of deferred compensation whose cost should be recognized while the employee actually renders services rather than when the actual benefits are paid, many years later. Ideally under the GASB standard the entire postemployment liability is recognized by the time an active participant begins to receive postemployment benefits. GASB 45's focus is on postemployment benefits other than pensions, such as medical, dental and life insurance benefits. Unlike pensions where sponsors are pre-funding for benefits due in the future, the impact of GASB 45 will be to significantly increase cash pay-as-you-go expense.

The effective date for GASB 45 is a function of the Town's total annual revenues in the first fiscal year ending after June 15, 1999. We understand that this is your fiscal year that ended June 30, 1999, and that your related revenues were greater than \$10 million and less than \$100 million. As a result, the Town was required to comply with GASB 45 for the fiscal year ending June 30, 2009.

ACTUARIAL VALUATION

As of July 1, 2014, there are 355 active employees who may be eligible for benefits in the future and 200 retired employees, covered spouses and survivors who are currently receiving benefits. Coverage is for individuals and families or individuals and spouses depending on the coverage selected.

The results of this valuation exclude employees and retirees of the Littleton Municipal Electric Light Department. However, Section 3 - GASB 45 Accounting Disclosure, includes the results of the Town (including Water Department), Light Department (results from the separate January 1, 2014 actuarial valuation) and the total Town.

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 1 - SUMMARY

Prior to GASB 45, the annual cost recognized was the annual premiums or benefits paid plus administrative expenses less any participant contributions paid towards the coverage. Under GASB 45, an annual cost for postemployment coverage is developed for any person who is currently receiving or who is currently actively employed and may be eligible to receive benefits in the future. In developing the GASB 45 cost for the Town of Littleton, the payment of future benefits is determined using the current schedule of premiums under the plans provided by the Town modified to reflect the population and the fact that actual healthcare expenses are higher as individuals age. These age-adjusted costs are increased in the future under the annual healthcare cost trend rate assumptions. The age-adjusted per capita costs utilized in this valuation are detailed in Section 7, Actuarial Assumptions and Methods.

It is important to understand that even though the Town charges participants for coverage based on the individual or family premium schedule presented in our report, in developing a liability for the Town, GASB requires that these premiums be adjusted as noted above. The plan premium represents less than 100% of the actual cost that is required to be recognized under the GASB standard.

SUMMARY OF PRINCIPAL RESULTS

Valuation Date	<u>July 1, 2014</u>	<u>July 1, 2012</u>
Summary of Member Data		
Active Members	355	338
Average Age	45.8	46.0
Average Service	8.5	8.2
Retired Members and Survivors	136	127
Average Age	72.4	71.6
Covered Spouses of Retired Members	64	59
Discount rate	5.50%	4.50%
Actuarial Accrued Liability	\$31,316,268	\$34,050,406
Assets	\$3,461,975	\$1,344,743
Unfunded Actuarial Accrued Liability	\$27,854,293	\$32,705,663
Normal Cost	\$1,400,259	\$1,880,151
Annual Required Contribution	\$3,394,186	\$3,972,832
Expected Employer Premiums	\$943,376	\$963,935

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 1 - SUMMARY

ACTUARIAL ASSUMPTIONS

The most important assumption for GASB 45 is the discount rate, which is used to discount future benefits to current age. GASB 45 requires that the discount rate accurately reflects the rate of return on assets dedicated to paying the retiree medical benefits. This means that a traditional pay-as-you-go system, which pays benefits from the Town's annual budget and not a dedicated trust, must use a discount rate close to the rate of return on cash. Full pre-funding by use of a dedicated trust with a mixture of stocks and bonds can employ a higher discount rate that accurately reflects the expected return on trust assets dedicated to pay retiree medical benefits. For the Town of Littleton, we selected a 5.5% discount rate to reflect the partial pre-funding of future payments.

CHANGES

Some assumptions used in this valuation have changed from those used in the July 1, 2012 valuation and are detailed in Section 7. The major assumption changes are summarized below:

- ◆ the discount rate was increased from 4.5% to 5.5% to reflect the partial prefunding of OPEB benefits to an OPEB trust.
- ◆ trend rates were changed from 9% in year 1 declining 1% per year to an ultimate rate of 5% to 8% in year 1 declining 1% per year to an ultimate rate of 5%.
- ◆ the mortality tables were changed from the RP-2000 Mortality Table projected to 2012 to the mortality tables used by the Middlesex County Retirement System and Massachusetts Teachers Retirement System actuaries for the Retirement System pension valuations.

RESULTS

We have provided results based on a discount rate of 5.5%. As shown in Table 4.3 of Section 4, the Annual OPEB Cost for the fiscal year ending June 30, 2015 under GASB 45 is \$3,186,702 and the estimated Annual OPEB Cost for the fiscal year ending June 30, 2016 under GASB 45 is \$3,358,307.

The accumulated Net OPEB Obligation as of June 30, 2015 is \$14,189,052 and the estimated Net OPEB Obligation as of June 30, 2016 is \$15,692,436.

The Actuarial Accrued Liability (AAL) as of July 1, 2014 is \$31,316,268. The AAL by status breakdown is shown below:

Actives:	\$19,259,273
Retirees, Beneficiaries and Surviving Spouses:	12,056,995
 Total:	 \$31,316,268
 Actuarial Value of Assets:	 \$3,461,975
 Unfunded Actuarial Accrued Liability:	 \$27,854,293

SECTION 1 - SUMMARY

ACTUARIAL GAIN/LOSS ANALYSIS

In performing the actuarial valuation, various assumptions are made regarding future premium rates, mortality, retirement, disability and withdrawal rates as well as investment returns. A comparison of the results of the current valuation and the prior valuation is made to determine how closely actual experience relates to expected. Below is the development of the Actuarial (Gain)/Loss for the current period:

Unfunded Actuarial Accrued Liability, July 1, 2012	\$32,705,663
Expected Unfunded Actuarial Accrued Liability, July 1, 2014*	36,964,014
Actual Unfunded Actuarial Accrued Liability, July 1, 2014	27,854,293
(Gain)/Loss during the two-year period	(\$9,109,721)

The actuarial gain of \$9,109,721 was mostly comprised of the following:

◆ gain as a result of demographic and premium changes from the prior valuation	(4,337,679)
◆ gain as a result of market value of assets as of the valuation date greater than expected	(1,148,791)
◆ loss as a result of change in the mortality tables	1,503,121
◆ loss as a result of change in the trend rates	1,076,966
◆ gain as a result of change in the retiree and surviving spouse contribution rates	(218,681)
◆ gain as a result of increase in the discount rate from 4.5% to 5.5%	(5,984,658)
◆ Total (Gain)/Loss	(9,109,722)

* From the prior actuarial valuation as of July 1, 2012

REIMBURSEMENT FOR HEALTHCARE PREMIUM CONTRIBUTIONS

Whenever the service of a retired employee is attributable to service in more than one governmental unit and the retired employee receives a healthcare premium contribution, Section 9A1/2 of M.G.L. Section 32B provides for reimbursement by other governmental units for the portion of healthcare premium contributions that corresponds to the percentage of the retiree's creditable service that is attributable for each governmental unit. The other governmental units shall be charged based on the Town of Littleton's contribution rate or the contribution rate of the first employer, whichever is lower.

For purposes of this valuation, we have not taken into account any prior service rendered at other Massachusetts entities for current or future retirees for the Town of Littleton nor have we taken into account any service rendered by former Town of Littleton employees currently working at or retired from other Massachusetts entities that may notify the Town of Littleton of reimbursement due for former Town of Littleton employees.

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 2 - PRINCIPAL VALUATION RESULTS

The Town of Littleton has established an irrevocable OPEB trust for the purpose of prefunding 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.

The Actuarial Value of Plan Assets is equal to the market value. The asset activity during the 2-year period July 1, 2013 through June 30, 2015 follows:

TABLE 2.1 - OPEB TRUST ASSETS

Market Value of Assets		
Fiscal Year Ending	<u>6/30/2015</u>	<u>6/30/2014</u>
Assets, July 1	\$3,461,975	\$2,213,574
Contributions receivable	\$0	\$0
Assets, July 1, including receivable	\$3,461,975	\$2,213,574
Employer Contributions		
Paid premiums	\$623,851	\$590,587
OPEB trust deposits	715,500	863,998
Total Employer Contributions	\$1,339,351	\$1,454,585
Benefits paid	(623,851)	(\$590,587)
Expenses	0	0
Investment earnings	98,832	384,403
Assets, June 30	\$4,276,307	\$3,461,975
Estimated rate of return	2.59%	14.53%
Asset gain / (loss)	(73,056)	265,352

Information regarding the asset value held in the OPEB Trust was provided by the Town of Littleton.

SECTION 2 - PRINCIPAL VALUATION RESULTS

The Actuarial Accrued Liability is the portion of the Actuarial Present Value of Future Benefits which is allocated to all periods prior to a valuation year and therefore is not provided for by future Normal Costs. Below is the Actuarial Accrued Liability assuming a discount rate of 5.5%, a blended rate for partial prefunding, and 7.5%, the rate of return on a dedicated trust if the Town were to fully pre-fund benefits:

TABLE 2.2 - ACTUARIAL ACCRUED LIABILITY

	<u>Partial Pre-Funding</u>	<u>Full Pre-Funding</u>
Discount Rate	5.50%	7.50%
Current Active Employees		
Pre-Medicare Gross Benefit	\$9,366,036	\$7,045,560
Pre-Medicare Participant Contributions	1,480,632	1,122,217
Net Pre-Medicare Benefit	\$7,885,404	\$5,923,343
Post - Medicare Gross Benefit	\$15,010,285	\$9,467,313
Post - Medicare Participant Contributions	3,636,416	2,318,253
Net Post - Medicare Benefit	\$11,373,869	\$7,149,060
Total Current Active Employees	\$19,259,273	\$13,072,403
Current Retirees		
Pre-Medicare Gross Benefit	\$2,514,338	\$2,336,911
Pre-Medicare Participant Contributions	427,911	399,329
Net Pre-Medicare Benefit	\$2,086,427	\$1,937,582
Post - Medicare Gross Benefit	\$13,124,499	\$10,583,742
Post - Medicare Participant Contributions	3,153,931	2,547,022
Net Post - Medicare Benefit	\$9,970,568	\$8,036,720
Total Current Retirees	\$12,056,995	\$9,974,302
Total Actuarial Accrued Liability (AAL)	\$31,316,268	\$23,046,705

SECTION 2 - PRINCIPAL VALUATION RESULTS

The Normal Cost is the portion of the Actuarial Present Value of Future Benefits which is attributed to services rendered by active employees in the current year. Below is the Normal Cost assuming a discount rate of 5.5%, a blended rate for partial prefunding, and 7.5%, the rate of return on a dedicated trust if the Town were to fully pre-fund benefits:

TABLE 2.3 - NORMAL COST

	Partial Pre-Funding	Full Pre-Funding
Discount Rate	5.50%	7.50%
Current Active Employees		
Pre-Medicare Gross Benefit	\$658,760	\$468,749
Pre-Medicare Participant Contributions	98,563	70,524
Net Pre-Medicare Benefit	\$560,197	\$398,225
Post - Medicare Gross Benefit	\$1,106,778	\$639,032
Post - Medicare Participant Contributions	266,716	156,064
Net Post - Medicare Benefit	\$840,062	\$482,968
Total Current Active Employees	\$1,400,259	\$881,193
Current Retirees		
Pre-Medicare Gross Benefit	\$0	\$0
Pre-Medicare Participant Contributions	0	0
Net Pre-Medicare Benefit	\$0	\$0
Post - Medicare Gross Benefit	\$0	\$0
Post - Medicare Participant Contributions	0	0
Net Post - Medicare Benefit	\$0	\$0
Total Current Retirees	\$0	\$0
Total Normal Cost (NC)	\$1,400,259	\$881,193

SECTION 2 - PRINCIPAL VALUATION RESULTS

Under GASB 45, the Annual Required Contribution (ARC) of the employer equals the Normal Cost plus a provision for amortizing the Unfunded Actuarial Accrued Liability. We have assumed level dollar amortization over the maximum acceptable amortization period of 30 years. For the period beginning July 1, 2014, the ARC, calculated under the parameters of this actuarial valuation, would be:

TABLE 2.4 - ANNUAL REQUIRED CONTRIBUTION and ANNUAL OPEB COST

	<u>Partial Pre-Funding</u>	<u>Full Pre-Funding</u>
Discount Rate	5.50%	7.50%
1. Normal Cost	\$1,400,259	\$881,193
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$31,316,268	\$23,046,705
b. Actuarial Value of Plan Assets	\$3,461,975	\$3,461,975
c. Unfunded Actuarial Accrued Liability	\$27,854,293	\$19,584,730
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$27,854,293	\$19,584,730
b. Amortization Period in years	30	30
c. Factor Increasing Rate	0.0%	0.0%
d. Amortization Factor	15.33	12.70
e. Amortization Amount (3.a. / 3.d.)	\$1,816,979	\$1,542,105
4. Interest on 1. and 3.e.	\$176,948	\$181,747
5. Annual Required Contribution (1. + 3.e. + 4.)	\$3,394,186	\$2,605,045
6. Net OPEB Obligation, beginning of year	\$12,661,226	Not Applicable
7. Interest on Net OPEB Obligation at 4.50%	\$569,755	Not Applicable
8. Adjustment to Annual Required Contribution at 4.50%	\$777,239	Not Applicable
9. Annual OPEB Cost (5. + 7. - 8.)	\$3,186,702	Not Applicable

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 3 - GASB 45 ACCOUNTING DISCLOSURE

GASB 45 requires disclosure of the annual OPEB cost, the Net OPEB Obligation and the Schedule of Funding Progress. In addition, information about the Actuarial Methods and Assumptions used in the valuation and a summary of the Substantive Plan Provisions are disclosed, which are provided in Section 6 and Section 7, respectively.

Annual OPEB Cost and Net OPEB Obligation - Town and Water			
Fiscal Year Ending	6/30/2015	6/30/2014	6/30/2013
Discount rate	5.50%	4.50%	4.50%
Annual Required Contribution	\$3,394,186	\$4,157,199	\$3,972,832
Interest on Net OPEB Obligation	569,755	472,372	354,695
Adjustment to annual required contribution	(777,239)	(644,392)	(497,363)
Annual OPEB cost/(expense)	\$3,186,702	\$3,985,179	\$3,830,164
Employer contributions (including subsidy)	(1,658,876)	(1,821,100)	(1,678,770)
Change in Net OPEB Obligation	\$1,527,826	\$2,164,079	\$2,151,394
Net OPEB Obligation (Asset) - beginning of year	\$12,661,226	\$10,497,147	\$8,345,753
Net OPEB Obligation (Asset) - end of year	\$14,189,052	\$12,661,226	\$10,497,147

Plan History - Town and Water				
Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation	
6/30/2015	3,186,702	52.1%	14,189,052	
6/30/2014	3,985,179	45.7%	12,661,226	
6/30/2013	3,830,164	43.8%	10,497,147	

Schedule of Funding Progress - Town and Water						
Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) / c)
7/1/2014	3,461,975	31,316,268	27,854,293	11.05%	15,475,059	180.0%
7/1/2012	1,344,743	34,050,406	32,705,663	3.95%	18,546,453	176.3%
7/1/2010	772,731	28,635,144	27,862,413	2.70%	20,436,061	136.3%

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 3 - GASB 45 ACCOUNTING DISCLOSURE

GASB 45 requires disclosure of the annual OPEB cost, the Net OPEB Obligation and the Schedule of Funding Progress. In addition, information about the Actuarial Methods and Assumptions used in the valuation and a summary of the Substantive Plan Provisions are disclosed, which are provided in Section 6 and Section 7, respectively.

Annual OPEB Cost and Net OPEB Obligation - Municipal Electric Light Department

Fiscal Year Ending	<u>12/31/2014</u>	<u>12/31/2013</u>	<u>12/31/2012</u>
Discount rate	7.50%	7.50%	7.50%
Annual Required Contribution	\$327,630	\$376,887	\$374,593
Interest on Net OPEB Obligation	50,832	51,328	28,633
Adjustment to annual required contribution	(57,928)	(57,949)	(40,149)
Annual OPEB cost/(expense)	\$320,534	\$370,266	\$363,077
Employer contributions (including subsidy)	(495,233)	(376,887)	(352,407)
Change in Net OPEB Obligation	(\$174,699)	(\$6,621)	\$10,670
Net OPEB Obligation (Asset) - beginning of year	\$677,755	\$684,376	\$673,706
Net OPEB Obligation (Asset) - end of year	\$503,056	\$677,755	\$684,376

Plan History - Municipal Electric Light Department

Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
12/31/2014	320,534	154.5%	503,056
12/31/2013	370,266	101.8%	677,755
12/31/2012	363,077	97.1%	684,376

Schedule of Funding Progress - Municipal Electric Light Department

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) / c)
1/1/2014	886,735	4,187,388	3,300,653	21.18%	2,729,436	120.9%
1/1/2012	370,151	4,287,032	3,916,881	8.63%	2,428,897	161.3%
7/1/2010	127,268	5,181,596	5,054,328	2.46%	Not Available	Not Available

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 3 - GASB 45 ACCOUNTING DISCLOSURE

GASB 45 requires disclosure of the annual OPEB cost, the Net OPEB Obligation and the Schedule of Funding Progress. In addition, information about the Actuarial Methods and Assumptions used in the valuation and a summary of the Substantive Plan Provisions are disclosed, which are provided in Section 6 and Section 7, respectively.

Annual OPEB Cost and Net OPEB Obligation - Total Town			
Fiscal Year Ending	6/30/2015	6/30/2014	6/30/2013
Discount rate	5.50%	4.50%	4.50%
Annual Required Contribution	\$3,721,816	\$4,534,086	\$4,347,425
Interest on Net OPEB Obligation	620,587	523,700	383,328
Adjustment to annual required contribution	(835,167)	(702,341)	(537,512)
Annual OPEB cost/(expense)	\$3,507,236	\$4,355,445	\$4,193,241
Employer contributions (including subsidy)	(2,154,109)	(2,197,987)	(2,031,177)
Change in Net OPEB Obligation	\$1,353,127	\$2,157,458	\$2,162,064
Net OPEB Obligation (Asset) - beginning of year	\$13,338,981	\$11,181,523	\$9,019,459
Net OPEB Obligation (Asset) - end of year	\$14,692,108	\$13,338,981	\$11,181,523

Plan History - Total Town				
Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation	
6/30/2015	3,507,236	61.4%	14,692,108	
6/30/2014	4,355,445	50.5%	13,338,981	
6/30/2013	4,193,241	48.4%	11,181,523	

Schedule of Funding Progress - Total Town						
Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) / c)
7/1/2014	4,348,710	35,503,656	31,154,946	12.25%	18,204,495	171.1%
7/1/2012	1,714,894	38,337,438	36,622,544	4.47%	20,436,061	179.2%
7/1/2010	899,999	33,816,740	32,916,741	2.66%	19,110,423	172.2%

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 4 - FORECASTS

OVERVIEW

In Section 4, we have provided 30-year forecasts of the annual funding requirements, accrued liability, assets and unfunded actuarial accrued liability under a partially funded scenario and fully funded scenario. The entries in Tables 4.1 and 4.2 are based on the assumptions stated below:

- ◆ Expected Benefit Payments are developed in the actuarial valuation and are based on the assumptions detailed in Section 7.
- ◆ Normal Cost is assumed to increase annually by 4.25%.
- ◆ Assets are assumed to grow annually at the selected discount rate plus OPEB Trust Contributions made at the end of each fiscal year.
- ◆ Actuarial Accrued Liability (AAL), end of year, equals AAL, beginning of year, plus Normal Cost less Expected Benefit Payments plus interest on these items.
- ◆ Unfunded Actuarial Accrued Liability (UAAL) equals the AAL less Assets.
- ◆ The Annual Required Contribution (ARC) is the sum of the Normal Cost, the Amortization Amount and Interest.

Table 4.1 is based on funding the Expected Benefit Payments on a pay-as-you-go basis plus a contribution of \$851,200 for FY16, a contribution of \$808,500 for FY17, and increasing 10% per year thereafter made annually to the OPEB trust.

- ◆ The assumed discount rate is 5.5%.
- ◆ Amortization Amount is the amount necessary to amortize the Unfunded Actuarial Accrued Liability over 30 years at a discount rate of 5.5% on an open amortization basis. The open amortization period is 30 years, recalculated at each valuation.

Table 4.2 is based on fully funding the Annual Required Contribution (ARC) each year.

- ◆ The assumed discount rate is 7.5%.
- ◆ Amortization Amount is the amount necessary to amortize the Unfunded Actuarial Accrued Liability over 30 years at a discount rate of 7.5% on a closed amortization basis. The closed amortization period is 30 years at year one declining to zero after 30 years. This method fully funds the UAL at the end of 30 years.
- ◆ Assumes OPEB Trust Contributions equal to the excess of the ARC over the Expected Benefit Payments.

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 4 - FORECASTS

TABLE 4.1 - Funding Expected Benefit Payments Plus Future Anticipated OPEB Trust Contributions

FYE June 30	(1) Normal Cost	(2) Actuarial Accrued Liability	(3) Expected Benefit Payments	(4) Actuarial Value of Assets	(5) Unfunded Actuarial Accrued Liability (2) - (3)	(6) Amortization Amount	(7) Interest	(8) ARC (1) + (6) + (7)	(9) OPEB Trust Contributions
2015	1,400,259	31,316,268	943,376	3,461,975	27,854,293	1,816,979	176,948	3,394,186	715,500
2016	1,459,770	33,546,965	1,003,724	4,276,307	29,270,658	1,909,371	185,303	3,554,444	851,200
2017	1,521,810	35,901,149	1,031,578	4,354,842	31,546,307	2,057,815	196,879	3,776,504	808,500
2018	1,586,487	38,421,655	1,138,129	4,365,228	34,056,427	2,221,554	209,442	4,017,483	889,350
2019	1,653,913	41,039,581	1,284,932	4,349,787	36,689,794	2,393,333	222,599	4,269,845	978,285
2020	1,724,204	43,721,841	1,391,491	4,274,058	39,447,783	2,573,241	236,359	4,533,804	1,076,114
2021	1,797,483	46,516,332	1,477,496	4,185,197	42,331,135	2,761,326	250,734	4,809,543	1,183,725
2022	1,873,876	49,453,492	1,638,630	4,113,642	45,339,850	2,957,590	265,731	5,097,197	1,302,097
2023	1,953,516	52,467,284	1,764,026	3,994,229	48,473,055	3,161,974	281,352	5,396,842	1,432,307
2024	2,036,540	55,602,057	1,940,556	3,873,193	51,728,864	3,374,355	297,599	5,708,494	1,575,538
2025	2,123,093	58,815,513	2,091,757	3,711,297	55,104,216	3,594,535	314,470	6,032,098	1,733,092
2026	2,213,324	62,141,719	2,292,696	3,547,022	58,594,697	3,822,224	331,955	6,367,503	1,906,401
2027	2,307,390	65,539,669	2,429,311	3,345,332	62,194,337	4,057,034	350,043	6,714,467	2,097,041
2028	2,405,454	69,083,424	2,591,827	3,188,040	65,895,384	4,298,459	368,715	7,072,628	2,306,745
2029	2,507,686	72,758,618	2,789,054	3,070,566	69,688,052	4,545,861	387,945	7,441,492	2,537,419
2030	2,614,263	76,541,225	2,867,989	2,980,985	73,560,240	4,798,450	407,699	7,820,412	2,791,161
2031	2,725,369	80,563,236	2,929,701	3,066,027	77,497,209	5,055,265	427,935	8,208,569	3,070,277
2032	2,841,197	84,860,289	3,052,090	3,379,049	81,481,240	5,315,149	448,599	8,604,945	3,377,305
2033	2,961,948	89,390,168	3,155,765	3,898,935	85,491,233	5,576,728	469,627	9,008,303	3,715,036
2034	3,087,831	94,190,095	3,269,322	4,687,821	89,502,274	5,838,374	490,941	9,417,146	4,086,539
2035	3,219,064	99,270,187	3,419,311	5,785,041	93,485,146	6,098,183	512,449	9,829,696	4,495,193
2036	3,355,874	104,614,076	3,465,808	7,208,291	97,405,785	6,353,932	534,039	10,243,845	4,944,712
2037	3,498,499	110,348,455	3,625,105	9,123,777	101,224,678	6,603,045	555,585	10,657,129	5,439,184
2038	3,647,185	116,385,075	3,713,184	11,488,883	104,896,192	6,842,544	576,935	11,066,664	5,983,102
2039	3,802,190	122,820,105	3,702,485	14,452,277	108,367,828	7,069,004	597,916	11,469,110	6,581,412
2040	3,963,783	129,783,581	3,782,669	18,204,190	111,579,391	7,278,499	618,326	11,860,608	7,239,554
2041	4,132,244	137,218,169	3,761,927	22,756,097	114,462,072	7,466,541	637,933	12,236,718	7,963,509
2042	4,307,864	145,260,691	3,867,945	28,323,261	116,937,430	7,628,012	656,473	12,592,349	8,724,404
2043	4,490,948	153,821,936	3,978,386	34,869,265	118,952,671	7,759,470	673,773	12,924,191	8,945,805
2044	4,681,813	162,933,766	4,038,296	41,889,270	121,044,496	7,895,923	691,775	13,269,511	9,231,215
2045	4,880,790	172,686,573	3,971,802	49,526,993	123,159,580	8,033,893	710,308	13,624,991	9,653,189

30-years open, 5.5% discount rate.

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 4 - FORECASTS

TABLE 4.1 - Funding the Annual Required Contribution

FYE June 30	(1) Normal Cost	(2) Actuarial Accrued Liability	(3) Expected Benefit Payments	(4) Actuarial Value of Assets	(5) Unfunded Actuarial Accrued Liability (2) - (3)	(6) Amortization Amount	(7) Interest	(8) ARC (1) + (6) + (7)	(9) OPEB Trust Contributions
2015	881,193	23,046,705	943,376	3,461,975	19,584,730	1,542,105	181,747	2,605,045	1,661,669
2016	918,644	24,744,378	1,003,724	4,276,307	20,468,071	1,628,327	191,023	2,737,994	1,734,270
2017	957,686	26,547,066	1,031,578	6,294,341	20,252,725	1,628,033	193,929	2,779,648	1,748,070
2018	998,388	28,498,046	1,138,129	8,476,502	20,021,544	1,627,768	196,962	2,823,118	1,684,989
2019	1,040,819	30,528,629	1,284,932	10,755,320	19,773,309	1,627,433	200,119	2,868,371	1,583,439
2020	1,085,054	32,604,910	1,391,491	13,098,094	19,506,816	1,628,282	203,500	2,916,836	1,525,345
2021	1,131,169	34,773,982	1,477,496	15,554,558	19,219,424	1,627,386	206,892	2,965,447	1,487,951
2022	1,179,244	37,066,137	1,638,630	18,154,697	18,911,440	1,627,491	210,505	3,017,240	1,378,610
2023	1,229,362	39,414,817	1,764,026	20,834,572	18,580,245	1,628,418	214,334	3,072,114	1,308,088
2024	1,281,610	41,863,511	1,940,556	23,640,298	18,223,213	1,628,527	218,260	3,128,397	1,187,841
2025	1,336,078	44,368,994	2,091,757	26,529,706	17,839,288	1,627,672	222,281	3,186,031	1,094,274
2026	1,392,861	46,964,173	2,292,696	29,536,685	17,427,488	1,627,216	226,506	3,246,583	953,887
2027	1,452,058	49,606,694	2,429,311	32,621,402	16,985,292	1,628,504	231,042	3,311,604	882,293
2028	1,513,770	52,369,395	2,591,827	35,860,848	16,508,547	1,628,062	235,637	3,377,469	785,642
2029	1,578,105	55,237,139	2,789,054	39,240,618	15,996,521	1,627,316	240,407	3,445,828	656,774
2030	1,645,174	58,184,635	2,867,989	42,737,740	15,446,895	1,627,702	245,466	3,518,342	650,353
2031	1,715,094	61,343,450	2,929,701	46,487,818	14,855,632	1,627,123	250,666	3,592,883	663,182
2032	1,787,985	64,750,356	3,052,090	50,529,709	14,220,647	1,627,076	256,130	3,671,191	619,101
2033	1,863,974	68,364,242	3,155,765	54,826,153	13,538,089	1,627,174	261,836	3,752,984	597,219
2034	1,943,193	72,223,365	3,269,322	59,419,131	12,804,234	1,629,037	267,917	3,840,147	570,825
2035	2,025,779	76,339,345	3,419,311	64,326,008	12,013,337	1,627,823	274,020	3,927,622	508,311
2036	2,111,875	80,697,291	3,465,808	69,532,863	11,164,428	1,627,468	280,451	4,019,794	553,986
2037	2,201,630	85,426,427	3,625,105	75,174,195	10,252,232	1,627,338	287,173	4,116,141	491,036
2038	2,295,199	90,441,572	3,713,184	81,169,812	9,271,760	1,629,483	294,351	4,219,033	505,849
2039	2,392,745	95,842,118	3,702,485	87,626,670	8,215,448	1,626,821	301,467	4,321,033	618,548
2040	2,494,437	101,763,660	3,782,669	94,680,885	7,082,775	1,628,224	309,200	4,431,861	649,192
2041	2,600,451	108,155,500	3,761,927	102,291,858	5,863,642	1,628,789	317,193	4,546,433	784,506
2042	2,710,970	115,162,199	3,867,945	110,609,732	4,552,467	1,625,881	325,264	4,662,115	794,170
2043	2,826,186	122,703,286	3,978,386	119,557,207	3,146,079	1,630,093	334,221	4,790,500	812,114
2044	2,946,299	130,819,304	4,038,296	129,189,619	1,629,685	1,629,685	343,199	4,919,183	880,887
2045	3,071,517	139,611,029	3,971,802	139,611,029	-	-	230,364	3,301,881	-

30-years closed, 7.5% discount rate.

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 4 - FORECASTS

TABLE 4.3 - ANNUAL OPEB COST and NET OPEB OBLIGATION

FYE June 30	ARC	Interest on Net OPEB Obligation	ARC Adjustment	Amortization Factor	Annual OPEB Cost	Employer Contributions	Change in Net OPEB Obligation	Net OPEB Obligation Balance
								12,661,226
2015	3,394,186	569,755	777,239	16.29	3,186,702	1,658,876	1,527,826	14,189,052
2016	3,554,444	780,398	976,535	14.53	3,358,307	1,854,924	1,503,383	15,692,436
2017	3,776,504	863,084	1,080,002	14.53	3,559,586	1,840,078	1,719,508	17,411,944
2018	4,017,483	957,657	1,198,344	14.53	3,776,796	2,027,479	1,749,317	19,161,261
2019	4,269,845	1,053,869	1,318,738	14.53	4,004,976	2,263,217	1,741,759	20,903,020
2020	4,533,804	1,149,666	1,438,611	14.53	4,244,859	2,467,605	1,777,254	22,680,274
2021	4,809,543	1,247,415	1,560,927	14.53	4,496,031	2,661,220	1,834,811	24,515,085
2022	5,097,197	1,348,330	1,687,205	14.53	4,758,322	2,940,727	1,817,595	26,332,679
2023	5,396,842	1,448,297	1,812,297	14.53	5,032,842	3,196,333	1,836,509	28,169,188
2024	5,708,494	1,549,305	1,938,692	14.53	5,319,107	3,516,093	1,803,014	29,972,202

Notes:

1. ARC and Contributions are from 30-Year Forecast of Annual Required Contribution (Table 4.1).
2. Interest on Net OPEB Obligation is computed on the prior year Net OPEB Obligation Balance.
3. ARC Adjustment is the prior year Net OPEB Obligation Balance amortized over 30 years.
4. OPEB Cost is the ARC plus Interest on Net OPEB Obligation less ARC Adjustment.
5. Change in Net OPEB Obligation is the difference between the OPEB Cost and Employer Contribution.
6. Net OPEB Obligation is the prior year Net OPEB Obligation Balance plus Change in Net OPEB Obligation.
7. Year one Interest on Net OPEB Obligation and ARC Adjustment computed at prior discount rate of 4.50%.
8. Subsequent years' Interest on Net OPEB Obligation and ARC Adjustment computed at current discount rate of 5.50%.

SECTION 5 - SENSITIVITY TO HEALTH CARE COST TREND RATE

Below we illustrate the sensitivity of Actuarial Accrued Liability to a one percentage increase and decrease in health care cost trend assumption for each future year:

TABLE 5.1 - ACTUARIAL ACCRUED LIABILITY

	<u>Assumed Trend</u>	<u>Trend +1%</u>	<u>Trend -1%</u>
Discount Rate	5.50%	5.50%	5.50%
Current Active Employees			
Pre-Medicare Gross Benefit	\$9,366,036	\$11,126,344	\$7,898,115
Pre-Medicare Participant Contributions	1,480,632	1,709,963	1,288,773
Net Pre-Medicare Benefit	\$7,885,404	\$9,416,381	\$6,609,342
Post - Medicare Gross Benefit	\$15,010,285	\$19,877,968	\$11,800,502
Post - Medicare Participant Contributions	3,636,416	4,631,518	2,889,399
Net Post - Medicare Benefit	\$11,373,869	\$15,246,450	\$8,911,103
Total Current Active Employees	\$19,259,273	\$24,662,831	\$15,520,445
Current Retirees			
Pre-Medicare Gross Benefit	\$2,514,338	\$2,614,562	\$2,419,148
Pre-Medicare Participant Contributions	427,911	441,382	415,077
Net Pre-Medicare Benefit	\$2,086,427	\$2,173,180	\$2,004,071
Post - Medicare Gross Benefit	\$13,124,499	\$14,742,882	\$11,791,306
Post - Medicare Participant Contributions	3,153,931	3,527,425	2,835,837
Net Post - Medicare Benefit	\$9,970,568	\$11,215,457	\$8,955,469
Total Current Retirees	\$12,056,995	\$13,388,637	\$10,959,540
Total Actuarial Accrued Liability (AAL)	\$31,316,268	\$38,051,468	\$26,479,985

SECTION 5 - SENSITIVITY TO HEALTH CARE COST TREND RATE

Below we illustrate the sensitivity of Normal Cost to a one percentage increase and decrease in health care cost trend assumption for each future year:

TABLE 5.2 - NORMAL COST

	<u>Assumed Trend</u>	<u>Trend +1%</u>	<u>Trend -1%</u>
Discount Rate	5.50%	5.50%	5.50%
Current Active Employees			
Pre-Medicare Gross Benefit	\$658,760	\$807,130	\$537,595
Pre-Medicare Participant Contributions	98,563	117,229	83,303
Net Pre-Medicare Benefit	\$560,197	\$689,901	\$454,292
Post - Medicare Gross Benefit	\$1,106,778	\$1,550,636	\$828,680
Post - Medicare Participant Contributions	266,716	354,691	202,874
Net Post - Medicare Benefit	\$840,062	\$1,195,945	\$625,806
Total Current Active Employees	\$1,400,259	\$1,885,846	\$1,080,098
Current Retirees			
Pre-Medicare Gross Benefit	\$0	\$0	\$0
Pre-Medicare Participant Contributions	0	0	0
Net Pre-Medicare Benefit	\$0	\$0	\$0
Post - Medicare Gross Benefit	\$0	\$0	\$0
Post - Medicare Participant Contributions	0	0	0
Net Post - Medicare Benefit	\$0	\$0	\$0
Total Current Retirees	\$0	\$0	\$0
Total Normal Cost	\$1,400,259	\$1,885,846	\$1,080,098

SECTION 6 - PLAN PROVISIONS

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

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

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

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

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

<u>Non-Medicare Plans - July 1, 2014</u>	<u>Individual</u>	<u>Family</u>
HMO	\$619.96	\$1,626.00
PPO	\$750.10	\$1,967.29
 <u>Medicare Plans - July 1, 2014</u>		
Medex	\$258.29	

Participant Contributions: Retired employees contribute 30% of the total premium cost.

Continuation of Coverage to Spouse After Death of Retiree: Surviving spouse may continue coverage for lifetime by paying the required medical premium rates. For current surviving spouses, 30% of the total premium cost. For future surviving spouses, 50% of the total premium cost.

Life Insurance Benefit: Retirees are eligible for a \$5,000 life insurance benefit.

Life Insurance Premium: The total monthly cost is \$3.95.

Life Insurance Contributions: Retired employees contribute 30% of the total premium cost.

PPACA Excise Tax: The Patient Protection and Affordable Care Act (PPACA) applies a 40% excise tax to the cost of plan benefits in excess of statutory thresholds beginning in 2018. The 2018 thresholds are assumed to be \$10,200 for individual and \$27,500 for family coverage and increase by CPI in future years. The annual limits are increased by \$1,650 for individual and \$3,450 for family coverage for retirees not eligible for Medicare benefits.

SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

Valuation Date: July 1, 2014

Discount Rates: 5.50% partial pre-funding.
7.50% full pre-funding.

Amortization Method: Level dollar amount per year over 30 years on an open amortization period
Level dollar amount per year over 30 years on a closed amortization period

Health Care Cost Trend Rates:

<u>Year</u>	<u>Current</u>	<u>Prior</u>
1	8.00%	9.00%
2	7.00%	8.00%
3	6.00%	7.00%
4	5.00%	6.00%
5	5.00%	5.00%
Ultimate	5.00%	5.00%

Consumer Price Index (CPI): 3% per year.

Medical Plan Participation: 85% of eligible retirees will elect medical coverage upon retirement.

Life Insurance Participation: 80% of eligible retirees will elect life insurance coverage upon retirement.

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 provided is used.

SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

Medical Per Capita Costs: Annual per capita costs for the fiscal year beginning July 1, 2014 are as follows:

<u>Age</u>	<u>Claims Cost</u>
Under 25	\$4,064
25-29	\$5,240
30-34	\$6,608
35-39	\$7,316
40-44	\$8,125
45-49	\$9,502
50-54	\$11,813
55-59	\$14,016
60-64	\$17,020
65-69	\$3,568
70-74	\$4,076
75-79	\$4,544
80-84	\$4,871
85-89	\$5,044
90+	\$5,094

Retiree Contributions: Annual average per capita participant contributions for the fiscal year beginning July 1, 2014 are as follows:

<u>Plan</u>	<u>Retiree Contributions</u>
Non-Medicare Plans	\$2,837
Medicare Plans	\$1,025

Excise Tax: For purposes of estimating the excise tax, per capita plan costs are developed for individual and family coverage for both Medicare and non-Medicare members. These plan costs are compared to the thresholds stipulated in the Patient Protection and Affordable Care Act (PPACA). Beginning in 2018, a 40% excise tax is applied on the excess of the plan costs over the thresholds, which increase annually by CPI.

SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Cost Method:	Projected Unit Credit. The costs of each employee's postemployment benefits are allocated on a pro rata basis from the employee's date of hire to the date the employee is fully eligible for benefits.
Employee Data:	Employee and retiree data were submitted by the Town. We made reasonable adjustments for missing or invalid data.

SECTION 7 - 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, projected 17 years using Scale AA.

Pre-Retirement Mortality: Pre-retirement mortality rates for General and Public Safety employees are based on the RP-2000 Employee Mortality Table, projected 22 years using Scale AA.

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

General		Public Safety	
Service	Rate	Service	Rate
0	15.00%	0-10	1.5%
1	12.00%	11	0.0%
2	10.00%		
3	9.00%		
4	8.00%		
5-9	7.60%		
10-14	5.40%		
15-19	3.30%		
20-24	2.00%		
25-29	1.00%		
30+	0.00%		

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

General		Public Safety
Age	Rate	Rate
20	0.02%	0.20%
25	0.02%	0.20%
30	0.03%	0.30%
35	0.06%	0.30%
40	0.10%	0.30%
45	0.15%	1.00%
50	0.19%	1.25%
55	0.24%	1.20%
60	0.28%	0.85%

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

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

SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

Retirement Rates:

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

<u>Age</u>	<u>General</u>		<u>Public Safety</u>
	Male	Female	All
45-49	0.00%	0.00%	1.00%
50-54	0.00%	0.00%	2.00%
55-59	2.00%	5.50%	15.00%
60-61	12.00%	5.00%	20.00%
62-64	30.00%	15.00%	25.00%
65-68	40.00%	15.00%	100.00%
69	50.00%	20.00%	
70	100.00%	100.00%	

SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

Post-Retirement Mortality: Post-retirement mortality rates for Teachers are based on the RP-2000 Healthy Annuitant Mortality Table, adjusted for large annuity amounts, projected to 2016, using Scale AA.

Pre-Retirement Mortality: Pre-retirement mortality rates for Teachers are based on the RP-2000 Mortality Table, adjusted for 'white collar' employment, projected to 2021, using Scale AA.

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%	5.5%	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	0.100%

35% of the disabilities are job-related.

SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

Retirement Rates:

Retirement rates for Teachers are as follows:

<u>Age</u>	Years of Service			
	<u>Less than 20</u>		<u>20+</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
50	0.0%	0.0%	2.0%	1.0%
51	0.0%	0.0%	2.0%	1.0%
52	0.0%	0.0%	2.0%	1.5%
53	0.0%	0.0%	2.0%	2.0%
54	0.0%	0.0%	3.0%	2.0%
55	3.5%	3.5%	3.0%	4.0%
56	3.5%	3.5%	3.5%	4.0%
57	5.0%	3.5%	4.0%	4.0%
58	5.5%	5.0%	5.0%	6.0%
59	6.0%	6.5%	6.0%	8.0%
60	7.5%	8.5%	15.0%	15.0%
61	12.0%	10.0%	25.0%	20.0%
62	14.0%	12.0%	30.0%	25.0%
63	14.0%	12.0%	30.0%	25.0%
64	14.0%	20.0%	30.0%	30.0%
65	30.0%	30.0%	30.0%	40.0%
66	30.0%	30.0%	25.0%	30.0%
67	30.0%	30.0%	25.0%	30.0%
68	30.0%	30.0%	25.0%	30.0%
69	30.0%	30.0%	25.0%	30.0%
70	100.0%	100.0%	100.0%	100.0%

SECTION 8 - PLAN MEMBER INFORMATION

TABLE 8.1 - ACTIVE EMPLOYEES BY AGE and YEARS OF SERVICE AS OF JULY 1, 2014

Age	Years of Service									Total	Percent
	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 25	12	0	0	0	0	0	0	0	0	12	3%
25 to 29	31	8	0	0	0	0	0	0	0	39	11%
30 to 34	17	7	3	0	0	0	0	0	0	27	8%
35 to 39	10	11	12	1	0	0	0	0	0	34	10%
40 to 44	16	15	9	4	1	1	0	0	0	46	13%
45 to 49	20	25	9	2	2	2	0	0	0	60	17%
50 to 54	8	23	12	3	2	3	3	0	0	54	15%
55 to 59	11	11	12	4	0	2	0	0	0	40	11%
60 to 64	2	10	6	4	4	3	1	0	0	30	8%
65 to 69	0	2	2	2	0	3	1	0	1	11	3%
70 & up	0	1	0	1	0	0	0	0	0	2	1%
Total	127	113	65	21	9	14	5	0	1	355	
Percent	36%	32%	18%	6%	3%	4%	1%	0%	0%		100%
Average Age:			45.8		Average Service:			8.5			

SECTION 8 - PLAN MEMBER INFORMATION

TABLE 8.2 - RETIRED PLAN PARTICIPANTS and SURVIVORS AS OF JULY 1, 2014

Age	HMO	PPO	Medex	Life Only	Total
Under 40	0	0	0	0	0
40 to 44	0	0	0	0	0
45 to 49	0	0	0	0	0
50 to 54	2	0	0	0	2
55 to 59	4	0	0	2	6
60 to 64	9	2	4	1	16
65 to 69	7	1	25	5	38
70 to 74	3	0	25	5	33
75 to 79	0	0	10	1	11
80 to 84	0	0	11	2	13
85 to 89	1	0	6	3	10
90+	0	0	5	2	7
Total	26	3	86	21	136
Covered Spouses	16	1	47		64

SECTION 9 - GASB 45 GLOSSARY OF TERMS

Actuarial Accrued Liability – The portion of the Actuarial Present Value of future benefits which is allocated to all periods prior to a valuation year and therefore is not provided by future Normal Costs.

Actuarial Assumptions – Assumptions as to the occurrence of future events affecting OPEB costs, such as mortality, withdrawal, disablement and retirement; changes in compensation and Government provided pension 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 Present Value of Future Benefits – The present value of the cost to finance all benefits payable in the future, discounted to reflect the probability of payment and the time value of money.

Actuarial Valuation – the determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets and related Actuarial Present Values for an OPEB plan.

Actuarial Value of Assets – The value of plan assets used in an actuarial valuation. The Actuarial Value of Assets may reflect smoothing techniques intended to dampen year-to-year fluctuations in the market value of assets.

Annual OPEB Cost - The accrual basis annual cost for the OPEB plan sponsored by the employer. In the year of implementation of GASB 45, the Annual OPEB Cost equals the ARC. In subsequent years, if an employer has a Net OPEB Obligation, Annual OPEB Cost equals the ARC plus one year's interest on the Net OPEB Obligation plus an adjustment to the ARC.

Annual Required Contribution (ARC) – Includes the employer's Normal Cost and a provision for amortizing the Unfunded Actuarial Accrued Liability.

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.

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

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.

SECTION 9 - GASB 45 GLOSSARY OF TERMS

Net OPEB Obligation – The cumulative excess since adoption of GASB 45 of Annual OPEB Cost over the employer's contributions to the plan.

Normal Cost – The portion of the Actuarial Present Value of Future Benefits which is allocated to a valuation year.

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

Plan Assets – Investments segregated and restricted in a trust or similar arrangement under which:

- employer contributions to the trust are irrevocable,
- assets are dedicated to providing plan benefits, and
- assets are legally protected from creditors.

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.

Projected Unit Credit Actuarial Cost Method – A method under which the projected benefits of each individual included in an Actuarial Valuation are allocated by a consistent formula to valuation years. Projected Unit Credit is one of the actuarial cost methods allowed and most often used for developing liabilities under GASB 45.

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

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

SECTION 10 - RESULTS BY SUBGROUP

Unit	<u>Town</u>	<u>Public Safety</u>	<u>School</u>	<u>Dispatch</u>	<u>SubtotalTown</u>	<u>Water</u>	<u>Report Total</u>	<u>Light</u>	<u>Total Town</u>
Summary of Member Data									
Active Members	54	30	257	4	345	10	355	27	382
Average Age	50.6	38.8	45.7	38.1	45.8	44.8	45.8	45.2	45.8
Average Service	10.8	9.1	7.9	4.5	8.4	11.9	8.5	12.0	8.7
Retired Members and Survivors	21	10	102	0	133	3	136	22	158
Average Age	74.5	65.9	72.8	0.0	72.6	64.0	72.4	67.5	71.7
Actuarial Accrued Liability - July 1, 2014									
Active Employees	2,921,003	3,332,358	12,176,914	133,531	18,563,806	695,467	19,259,273	1,543,609	20,802,882
Retired Employees and Survivors	1,613,123	1,259,754	8,688,470	0	11,561,347	495,648	12,056,995	2,643,779	14,700,774
Total	4,534,126	4,592,112	20,865,384	133,531	30,125,153	1,191,115	31,316,268	4,187,388	35,503,656
Actuarial Value of Plan Assets - July 1, 2014					3,309,924	152,051	3,461,975	886,735	4,348,710
Unfunded Actuarial Accrued Liability					26,815,229	1,039,064	27,854,293	3,300,653	31,154,946
Annual Required Contribution (ARC) for FYE 2015									
Normal Cost					1,365,137	35,122	1,400,259	39,446	1,439,705
Amortization of UAL					1,749,199	67,780	1,816,979	265,326	2,082,305
Interest					171,288	5,660	176,948	22,858	199,806
Total					3,285,624	108,562	3,394,186	327,630	3,721,816
Net OPEB Obligation for FYE 2015									
Annual Required Contribution					3,285,624	108,562	3,394,186	327,630	3,721,816
Interest on Net OPEB Obligation					559,213	10,542	569,755	50,832	620,587
Adjustment to Annual Required Contribution					(762,858)	(14,381)	(777,239)	(57,928)	(835,167)
Annual OPEB cost/(expense)					3,081,979	104,723	3,186,702	320,534	3,507,236
Employer Benefit Payments					(602,775)	(21,077)	(623,852)	(153,559)	(777,411)
Implicit Subsidy					(309,596)	(9,928)	(319,524)	(91,674)	(411,198)
OPEB Trust contributions					(665,500)	(50,000)	(715,500)	(250,000)	(965,500)
Employer contributions					(1,577,871)	(81,005)	(1,658,876)	(495,233)	(2,154,109)
Change in Net OPEB Obligation					1,504,108	23,718	1,527,826	(174,699)	1,353,127
Net OPEB Obligation (Asset) - beginning of year					12,426,966	234,260	12,661,226	677,755	13,338,981
Net OPEB Obligation (Asset) - end of year					13,931,074	257,978	14,189,052	503,056	14,692,108

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014

SECTION 10 - RESULTS BY SUBGROUP

Unit	<u>Town</u>	<u>Public Safety</u>	<u>School</u>	<u>Dispatch</u>	<u>SubtotalTown</u>	<u>Water</u>	<u>Report Total</u>	<u>Light</u>	<u>Total Town</u>
Actuarial Accrued Liability - July 1, 2015					32,285,131	1,261,834	33,546,965	4,207,423	37,754,388
Actuarial Value of Plan Assets - July 1, 2015					4,053,530	222,777	4,276,307	559,528	4,835,835
Unfunded Actuarial Accrued Liability					28,231,601	1,039,057	29,270,658	3,647,895	32,918,553
Annual Required Contribution (ARC) for FYE 2016									
Normal Cost					1,423,155	36,615	1,459,770	41,122	1,500,892
Amortization of UAL					1,841,592	67,779	1,909,371	252,470	2,161,841
Interest					179,561	5,742	185,303	22,019	207,322
Total					3,444,308	110,136	3,554,444	315,611	3,870,055
Net OPEB Obligation for FYE 2016									
Annual Required Contribution					3,444,308	110,136	3,554,444	315,611	3,870,055
Interest on Net OPEB Obligation					765,959	14,439	780,398	37,729	818,127
Adjustment to Annual Required Contribution					(958,467)	(18,068)	(976,535)	(43,479)	(1,020,014)
Annual OPEB cost					3,251,800	106,507	3,358,307	309,861	3,668,168
Employer Contributions									
Expected Benefit Payments (including subsidy)					(968,010)	(35,714)	(1,003,724)	(281,893)	(1,285,617)
Employer Contributions to OPEB Trust					(851,200)	0	(851,200)	(250,000)	(1,101,200)
Total Employer Contributions					(1,819,210)	(35,714)	(1,854,924)	(531,893)	(2,386,817)
Change in Net OPEB Obligation					1,432,590	70,793	1,503,383	(222,032)	1,281,351
Net OPEB Obligation, beginning of year					13,931,074	257,978	14,189,052	503,056	14,692,108
Net OPEB Obligation, end of year					15,363,664	328,771	15,692,435	281,024	15,973,459

Notes:

1. Littleton Municipal Electric Light Department entries from January 1, 2014 GASB 45 valuation.
2. Actuarial value of assets as of June 30, 2014 and June 30, 2015 allocation provided by the Town of Littleton.
3. FY2015 Employer Contribution to OPEB trust allocation provided by the Town of Littleton.

Town of Littleton, Massachusetts Postemployment Benefits Other Than Pensions
Actuarial Valuation as of July 1, 2014