



**TOWN OF SUDBURY**

**OTHER POSTEMPLOYMENT BENEFITS PROGRAM**

**ACTUARIAL VALUATION**

**July 1, 2015**

Prepared by:

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November 28, 2016

Ms. Maryanne Bilodeau  
Assistant Town Manager/Human Resources Director  
Town of Sudbury  
278 Old Sudbury Road  
Sudbury, MA 01776

Dear Maryanne:

Enclosed is our report summarizing the results of an actuarial valuation of the Town of Sudbury's Other Postemployment Benefits (OPEB) as of July 1, 2015. 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.

Our best estimate health care cost trend assumptions are based on recent experience and anticipated future cost increases under the Town of Sudbury medical plans. Section 5 illustrates the sensitivity of actuarial accrued liability and annual required contribution 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% 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. Section 5 illustrates the sensitivity of actuarial accrued liability and annual required contribution to a one percentage increase and decrease in the discount rate.

We also provide 30-year forecasts of the OPEB liability under a pay-as-you-go funding 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.

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Ms. Maryanne Bilodeau  
November 28, 2016  
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Our calculations were based on participant census data and other information provided by the Town of Sudbury 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 GIC in the file "fy2017townofsudbury.docx".

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.

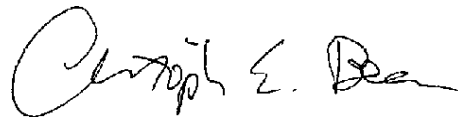
We appreciate this opportunity to be of service to the Town of Sudbury. We are available to answer any questions with respect to our valuation.

Respectfully submitted,



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Linda L. Bournival, FSA, EA, MAAA  
Member, American Academy of Actuaries  
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## ACTUARIAL CERTIFICATION

This report presents the results of the Actuarial Valuation for the Town of Sudbury Postemployment Benefits Other Than Pensions as of July 1, 2015. 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 and retiree 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 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 Sudbury 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,



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Linda L. Bournival, FSA, EA, MAAA  
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Town of Sudbury Postemployment Benefits Other Than Pensions  
Actuarial Valuation as of July 1, 2015

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## SECTION 1 - SUMMARY

### BACKGROUND

The Town of Sudbury 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, 2015, there are 553 active employees who may be eligible for benefits in the future and 459 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.

## 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 benefits 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 Sudbury, the payment of future benefits is determined using the current schedule of premiums under the plans provided by the GIC 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

A summary of the principal results for the current and prior valuations follows:

Valuation Date	<u>July 1, 2015</u>	<u>July 1, 2013</u>
<b>Summary of Member Data</b>		
Active Members	553	529
Average Age	44.6	45.1
Average Service	9.1	9.5
Retired Employees, Spouses and Survivors	459	440
Average Age	72.3	71.1
<b>Discount rate</b>	5.00%	3.50%
<b>Actuarial Accrued Liability</b>	\$47,390,251	\$36,004,783
<b>Normal Cost</b>	\$1,545,729	\$1,354,526
<b>Assets</b>	\$4,844,357	\$0
<b>Unfunded Actuarial Accrued Liability</b>	\$42,545,894	\$36,004,783
<b>Annual Required Contribution</b>	\$3,328,099	\$3,359,128
<b>Expected Benefit Payments</b>	\$1,300,449	\$1,002,644

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## 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 Sudbury, we selected a 5% discount rate to reflect the partial pre-funding of future payments. The development of the discount rate is shown in Section 7 - Actuarial Assumptions and Methods.

### CHANGES

Some assumptions used in this valuation have changed from those used in the July 1, 2013 valuation and are detailed in Section 7. The major assumption changes are summarized below:

- ◆ the pre-retirement decrements for Teachers were updated to reflect those recently used by the Massachusetts Teachers Retirement System actuaries.
- ◆ the pre- and post-retirement mortality rates were updated to utilize a more recent mortality table adjusted for mortality improvement.
- ◆ Actuarial Standards of Practice (ASOPs) now require that the payment of future benefits be determined using the current schedule of premiums under the plans provided by the Town, modified to reflect the fact that actual healthcare expenses are higher as individuals age. In the previous valuation, the GIC plans were considered to be "community rated" and therefore did not value an "implicit subsidy" nor adjust the schedule of premiums as described above.
- ◆ the excise tax under the Patient Protection and Affordable Care Act (PPACA) was updated to reflect the tax on benefits in excess of the mandated thresholds starting in 2020 (previously, 2018).
- ◆ to reflect the impact of partially prefunding the Annual Required Contribution (ARC), the discount rate was increased from 3.5% to 5%.
- ◆ the method used to develop the amortization of the unfunded actuarial accrued liability component of the ARC was changed from a level dollar amount to a level percentage of pay, with annual payments increasing 4% per year.

### RESULTS

We have provided results based on a discount rate of 5%. As shown in Table 4.3 of Section 4, the Annual OPEB Cost for the fiscal year ending June 30, 2016 under GASB 45 is \$3,077,674 and the estimated Annual OPEB Cost for the fiscal year ending June 30, 2017 under GASB 45 is \$3,700,798.

The accumulated Net OPEB Obligation as of June 30, 2016 is \$14,310,240 and the estimated Net OPEB Obligation as of June 30, 2017 is \$16,183,605.



## SECTION 1 - SUMMARY

The Unfunded Actuarial Accrued Liability (UAAL) as of July 1, 2015 is \$42,545,894. The UAAL is shown below:

Actuarial Accrued Liability (AAL)	
Actives	\$24,693,661
Retirees, Beneficiaries and Surviving Spouses	22,696,590
Total Actuarial Accrued Liability	\$47,390,251
Actuarial Value of Assets	\$4,844,357
Unfunded Actuarial Accrued Liability (UAAL)	\$42,545,894

### ACTUARIAL GAIN/LOSS ANALYSIS

In performing the actuarial valuation, various assumptions are made regarding future premium rates, mortality, retirement, disability and turnover 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 estimated Actuarial Gain or Loss for the current period:

Unfunded Actuarial Accrued Liability, July 1, 2013	\$36,004,783
Expected Unfunded Actuarial Accrued Liability, July 1, 2015*	39,357,002
Actual Unfunded Actuarial Accrued Liability, July 1, 2015	42,545,894
(Gain)/Loss during the current period	\$3,188,892

\* from July 1, 2013 valuation

The actuarial loss of \$3,188,892 was mostly comprised of the following:

◆ gain as a result of favorable demographic experience from the prior valuation	(4,581,505)
◆ gain as a result of update to premium rates as of July 1, 2016	(2,251,137)
◆ loss as a result of use of age-adjusted medical costs and valuation of implicit subsidy	18,135,963
◆ loss as a result of update to pre-retirement decrements for Teachers	1,384,818
◆ loss as a result of update to pre- and post-retirement mortality rates	9,496,876
◆ gain as a result of update to the PPACA excise tax effective date from 2018 to 2020	(707,302)
◆ gain as a result of decrease to the spouse coverage rate from 55% to 50%	(1,222,833)
◆ gain as a result of increase to the discount rate from 3.5% to 5%	(17,065,988)
◆ Total (Gain)/Loss	3,188,892

Town of Sudbury Postemployment Benefits Other Than Pensions  
Actuarial Valuation as of July 1, 2015

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## SECTION 1 - SUMMARY

### 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 Sudbury'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 Sudbury nor have we taken into account any service rendered by former Town of Sudbury employees currently working at or retired from other Massachusetts entities that may notify the Town of Sudbury of reimbursement due for former Town of Sudbury employees.

Note that as a result of the Municipal Modernization Act passed in August, 2016, effective November, 2016, Section 9A1/2 of Section 32B is repealed.

## SECTION 2 - PRINCIPAL VALUATION RESULTS

The Town of Sudbury has established an OPEB trust for the purpose of prefunding OPEB liabilities. Plan assets segregated and restricted in the 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**

<b>Market Value of Assets</b>		
<b>Fiscal Year Ending</b>	<b><u>6/30/2015</u></b>	<b><u>6/30/2014</u></b>
Assets as of July 1	\$0	\$0
Paid Premiums <sup>1</sup>	906,156	933,581
OPEB Trust Contributions <sup>2</sup>	4,844,357	0
Benefits Paid	(906,156)	(933,581)
Expenses	0	0
Investment Earnings	0	0
Assets as of June 30	\$4,844,357	\$0
Estimated rate of return	0.00%	0.00%

<sup>1</sup> Information relating to the asset activity and paid premiums was provided by the Town.

<sup>2</sup> FY2015 OPEB Trust contribution is a transfer of funds from a revocable trust to an irrevocable trust as of June 30, 2015.

## 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%, 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**

	Funding	Full Pre-Funding
Discount Rate	5%	7.5%
<b>Current Active Employees</b>		
Pre-Medicare Gross Benefit	\$12,318,155	\$8,769,319
Pre-Medicare Participant Contributions	4,260,047	3,064,774
Net Pre-Medicare Benefit	\$8,058,108	\$5,704,545
Post - Medicare Gross Benefit	\$28,385,899	\$14,647,835
Post - Medicare Participant Contributions	11,750,346	6,386,816
Net Post - Medicare Benefit	\$16,635,553	\$8,261,019
<b>Total Current Active Employees</b>	<b>\$24,693,661</b>	<b>\$13,965,564</b>
<b>Current Retirees</b>		
Pre-Medicare Gross Benefit	\$3,809,102	\$3,494,530
Pre-Medicare Participant Contributions	1,379,459	1,268,697
Net Pre-Medicare Benefit	\$2,429,643	\$2,225,833
Post - Medicare Gross Benefit	\$34,237,789	\$25,733,407
Post - Medicare Participant Contributions	13,970,842	10,759,748
Net Post - Medicare Benefit	\$20,266,947	\$14,973,659
<b>Total Current Retirees</b>	<b>\$22,696,590</b>	<b>\$17,199,492</b>
<b>Total Actuarial Accrued Liability (AAL)</b>	<b>\$47,390,251</b>	<b>\$31,165,056</b>

## 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%, 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**

Discount Rate	Funding	Full Pre-Funding
	5%	7.5%
<b>Current Active Employees</b>		
Pre-Medicare Gross Benefit	\$689,897	\$437,740
Pre-Medicare Participant Contributions	226,131	144,914
Net Pre-Medicare Benefit	\$463,766	\$292,826
Post - Medicare Gross Benefit	\$1,823,364	\$817,113
Post - Medicare Participant Contributions	741,401	351,662
Net Post - Medicare Benefit	\$1,081,963	\$465,451
<b>Total Current Active Employees</b>	<b>\$1,545,729</b>	<b>\$758,277</b>
<b>Current Retirees</b>		
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
<b>Total Current Retirees</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Normal Cost (NC)</b>	<b>\$1,545,729</b>	<b>\$758,277</b>

## 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 increasing dollar amortization over the maximum acceptable amortization period of 30 years. For the period beginning July 1, 2015, the ARC, calculated under the parameters of this actuarial valuation, would be:

**TABLE 2.4 - ANNUAL REQUIRED CONTRIBUTION and ANNUAL OPEB COST**

	Funding	Full Pre-Funding
Discount Rate	5%	7.5%
1. Normal Cost	\$1,545,729	\$758,277
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$47,390,251	\$31,165,056
b. Actuarial Value of Plan Assets	\$4,844,357	\$4,844,357
c. Unfunded Actuarial Accrued Liability	\$42,545,894	\$26,320,699
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$42,545,894	\$26,320,699
b. Amortization Period in years	30	30
c. Percent of Covered Payroll	4.0%	4.0%
d. Amortization Factor	26.20	19.34
e. Amortization Amount (3.a. / 3.d.)	\$1,623,889	\$1,360,946
4. Interest on 1. and 3.e.	\$158,481	\$158,942
5. Annual Required Contribution (1. + 3.e. + 4.)	\$3,328,099	\$2,278,165
6. Net OPEB Obligation, beginning of year	\$12,923,592	Not Applicable
7. Interest on Net OPEB Obligation at 3.5%	\$452,326	Not Applicable
8. Adjustment to Annual Required Contribution at 3.5%	(\$702,751)	Not Applicable
9. Annual OPEB Cost (5. + 7. + 8.)	\$3,077,674	Not Applicable

## 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, a summary of the Substantive Plan Provisions and information about the Actuarial Methods and Assumptions used in the valuation are disclosed, which are provided in Section 6 and Section 7, respectively.

<b>Annual OPEB Cost and Net OPEB Obligation<sup>1</sup></b>			
Fiscal Year Ending	<u>6/30/2016</u>	<u>6/30/2015</u>	<u>6/30/2014</u>
Discount rate	5.00%	3.50%	3.50%
Annual Required Contribution	\$3,328,099	\$3,504,465	\$3,359,128
Interest on Net OPEB Obligation	452,326	546,467	473,159
Adjustment to annual required contribution	(702,751)	(849,013)	(735,119)
Annual OPEB Cost	\$3,077,674	\$3,201,919	\$3,097,168
Expected Benefit Payments	(1,300,449)	(1,047,324)	(1,002,644)
Employer contributions to OPEB Trust <sup>2</sup>	(390,577)	(4,844,357)	-
Total employer contributions	(1,691,026)	(5,891,681)	(1,002,644)
Change in Net OPEB Obligation	\$1,386,648	(\$2,689,762)	\$2,094,524
Net OPEB Obligation - beginning of year	\$12,923,592	\$15,613,354	\$13,518,830
Net OPEB Obligation - end of year	\$14,310,240	\$12,923,592	\$15,613,354

<sup>1</sup> Entries for FY2015 and FY2014 are based on information provided in the Town's audited financial statements.

<sup>2</sup> FY2015 OPEB Trust contribution is a transfer of funds from a revocable trust to an irrevocable trust.

<b>Plan History</b>				
Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation	
6/30/2016	3,077,674	54.9%	14,310,240	
6/30/2015	3,201,919	184.0%	12,923,592	
6/30/2014	3,097,168	32.4%	15,613,354	

<b>Schedule of Funding Progress</b>						
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)
7/1/2015	4,844,357	47,390,251	42,545,894	10.22%	35,566,273	119.6%
7/1/2013	0	36,004,783	36,004,783	0.00%	34,868,355	103.3%
7/1/2011	0	34,275,241	34,275,241	0.00%	31,225,800	109.8%

Town of Sudbury Postemployment Benefits Other Than Pensions  
Actuarial Valuation as of July 1, 2015

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## 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 pay-as-you-go 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%.
- ◆ 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 annually funding the Normal Cost. Actual benefit payments will be paid from the OPEB trust.

- ◆ The assumed discount rate is 5%.
- ◆ Amortization Amount is the amount necessary to amortize the Unfunded Actuarial Accrued Liability over 30 years at a discount rate of 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.

**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 Sudbury Postemployment Benefits Other Than Pensions  
Actuarial Valuation as of July 1, 2015



## SECTION 4 - FORECASTS

**TABLE 4.1 - Funding the Normal Cost**

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) - (4)	(6) Amortization Amount	(7) Interest	(8) ARC (1) + (6) + (7)	(9) OPEB Trust Contributions
2016	1,545,729	47,390,251	1,300,449	4,844,357	42,545,894	1,623,889	158,481	3,328,099	390,577
2017	1,607,558	50,050,215	1,417,777	5,238,714	44,811,501	1,760,766	168,416	3,536,740	409,656
2018	1,671,860	52,787,873	1,538,899	5,910,306	46,877,567	1,899,415	178,564	3,749,839	562,175
2019	1,738,734	55,605,817	1,603,383	6,767,996	48,837,821	2,042,569	189,065	3,970,368	582,550
2020	1,808,283	58,568,800	1,662,398	7,688,946	50,879,854	2,199,734	200,401	4,208,418	609,544
2021	1,880,614	61,692,486	1,776,344	8,682,937	53,009,549	2,372,854	212,673	4,466,141	599,710
2022	1,955,839	64,931,544	1,835,331	9,716,794	55,214,750	2,562,169	225,900	4,743,908	632,400
2023	2,034,073	68,351,098	1,944,067	10,835,034	57,516,064	2,773,195	240,363	5,047,631	632,225
2024	2,115,436	71,912,354	2,065,698	12,009,011	59,903,343	3,005,687	256,056	5,377,179	625,881
2025	2,200,053	75,612,469	2,265,123	13,235,343	62,377,126	3,262,402	273,123	5,735,578	566,695
2026	2,288,055	79,382,088	2,403,368	14,463,805	64,918,283	3,549,387	291,872	6,129,314	555,010
2027	2,379,577	83,290,931	2,599,490	15,742,005	67,548,926	3,868,782	312,418	6,560,777	505,110
2028	2,474,760	87,290,349	2,765,966	17,034,215	70,256,134	4,229,749	335,225	7,039,734	480,249
2029	2,573,750	91,419,093	2,954,927	18,366,175	73,052,918	4,635,337	360,454	7,569,541	442,981
2030	2,676,700	95,664,586	3,165,070	19,727,465	75,937,121	5,093,033	388,487	8,158,220	394,399
2031	2,783,768	100,015,119	3,372,366	21,108,237	78,906,882	5,620,148	420,196	8,824,112	351,988
2032	2,895,119	104,483,185	3,558,525	22,515,637	81,967,548	6,223,808	455,946	9,574,873	329,102
2033	3,010,924	109,100,816	3,715,008	23,970,521	85,130,295	6,932,434	497,168	10,440,526	332,068
2034	3,131,361	113,910,577	3,854,468	25,501,115	88,409,462	7,762,025	544,669	11,438,055	351,942
2035	3,256,615	118,944,381	3,930,752	27,128,113	91,816,268	8,752,742	600,468	12,609,825	422,188
2036	3,386,880	124,283,224	3,992,302	28,906,707	95,376,517	9,955,795	667,134	14,009,809	508,070
2037	3,522,355	129,962,717	4,012,108	30,860,112	99,102,605	11,443,719	748,304	15,714,378	629,263
2038	3,663,249	136,048,138	4,146,514	33,032,381	103,015,757	13,309,529	848,639	17,821,417	673,238
2039	3,809,779	142,448,044	4,225,859	35,357,238	107,090,806	15,748,648	977,921	20,536,348	762,554
2040	3,962,170	149,240,497	4,264,310	37,887,654	111,352,843	19,002,192	1,148,218	24,112,580	887,218
2041	4,120,657	156,493,183	4,404,063	40,669,255	115,823,928	23,589,395	1,385,503	29,095,555	944,930
2042	4,285,483	164,131,710	4,529,674	43,647,648	120,484,062	30,579,711	1,743,260	36,608,454	1,019,180
2043	4,456,902	172,196,518	4,634,233	46,849,210	125,347,308	42,204,481	2,333,069	48,994,452	1,115,202
2044	4,635,178	180,737,415	4,710,794	50,306,873	130,430,542	65,542,986	3,508,908	73,687,072	1,238,271
2045	4,820,585	189,814,095	4,841,894	54,060,488	135,753,607	135,753,607	7,028,710	147,602,902	1,329,143
2046	5,013,408	199,404,948	4,959,575	58,092,655	141,312,293	-	250,670	5,264,078	1,437,107

Town of Sudbury Postemployment Benefits Other Than Pensions  
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30 years closed, 5% discount rate.

## SECTION 4 - FORECASTS

**TABLE 4.2 - Funding the Annual Required Contribution (ARC)**

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) - (4)	(6) Amortization Amount	(7) Interest	(8) ARC (1) + (6) + (7)	(9) OPEB Trust Contributions
2016	758,277	31,165,056	1,300,449	4,844,357	26,320,699	1,360,946	158,942	2,278,165	390,577
2017	788,608	32,969,249	1,417,777	5,238,714	27,730,535	1,463,353	168,897	2,420,858	1,003,081
2018	820,152	34,819,714	1,538,899	6,582,493	28,237,221	1,521,402	175,617	2,517,171	978,272
2019	852,958	36,717,292	1,603,383	7,997,787	28,719,505	1,582,342	182,648	2,617,948	1,014,565
2020	887,076	38,725,596	1,662,398	9,553,146	29,172,450	1,646,301	190,003	2,723,380	1,060,982
2021	922,559	40,860,011	1,776,344	11,269,401	29,590,610	1,711,429	197,549	2,831,537	1,055,193
2022	959,461	43,074,510	1,835,331	13,104,390	29,970,120	1,779,698	205,437	2,944,596	1,109,265
2023	997,839	45,433,607	1,944,067	15,128,904	30,304,703	1,851,234	213,680	3,062,753	1,118,686
2024	1,037,753	47,898,153	2,065,698	17,310,673	30,587,480	1,924,952	222,203	3,184,908	1,119,210
2025	1,079,263	50,464,338	2,265,123	19,652,120	30,812,218	2,002,093	231,102	3,312,458	1,047,335
2026	1,122,434	53,060,842	2,403,368	22,089,957	30,970,885	2,082,776	240,391	3,445,601	1,042,233
2027	1,167,331	55,755,157	2,599,490	24,700,440	31,054,717	2,165,601	249,970	3,582,902	983,412
2028	1,214,024	58,496,466	2,765,966	27,440,666	31,055,800	2,252,052	259,956	3,726,032	960,066
2029	1,262,585	61,320,962	2,954,927	30,356,933	30,964,029	2,342,211	270,360	3,875,156	920,229
2030	1,313,088	64,213,580	3,165,070	33,445,125	30,768,455	2,436,141	281,192	4,030,421	865,351
2031	1,365,612	67,159,554	3,372,366	36,702,316	30,457,238	2,533,880	292,462	4,191,954	819,588
2032	1,420,236	70,168,010	3,558,525	40,150,400	30,017,610	2,635,435	304,175	4,359,846	801,321
2033	1,477,045	73,267,807	3,715,008	43,831,969	29,435,838	2,740,767	316,336	4,534,148	819,140
2034	1,536,127	76,498,914	3,854,468	47,801,712	28,697,202	2,849,772	328,942	4,714,841	860,373
2035	1,597,572	79,891,272	3,930,752	52,105,284	27,785,988	2,965,420	342,224	4,905,216	974,464
2036	1,661,475	83,525,017	3,992,302	56,842,906	26,682,111	3,081,075	355,691	5,098,241	1,105,939
2037	1,727,934	87,436,172	4,012,108	62,065,058	25,371,114	3,207,473	370,156	5,305,563	1,293,455
2038	1,797,051	91,691,572	4,146,514	67,865,658	23,825,914	3,332,296	384,701	5,514,048	1,367,534
2039	1,868,933	96,201,073	4,225,859	74,170,433	22,030,640	3,469,392	400,374	5,738,699	1,512,840
2040	1,943,690	101,043,793	4,264,310	81,090,451	19,953,342	3,608,199	416,392	5,968,281	1,703,971
2041	2,021,438	106,290,214	4,404,063	88,719,185	17,571,029	3,754,493	433,195	6,209,126	1,805,063
2042	2,102,296	111,868,796	4,529,674	97,016,020	14,852,776	3,898,366	450,050	6,450,712	1,921,038
2043	2,186,388	117,822,458	4,634,233	106,046,468	11,775,990	4,060,686	468,531	6,715,605	2,081,372
2044	2,273,844	124,204,634	4,710,794	115,910,683	8,293,951	4,210,127	486,298	6,970,269	2,259,475
2045	2,364,798	131,080,109	4,841,894	126,689,998	4,390,111	4,390,111	506,618	7,261,527	2,419,633
2046	2,459,390	138,433,092	4,959,575	138,433,092	-	-	184,454	2,643,844	-

Town of Sudbury Postemployment Benefits Other Than Pensions  
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30 years closed, 7.5% discount rate.

## 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
								12,923,592
2016	3,328,099	452,326	(702,751)	18.39	3,077,674	1,691,026	1,386,648	14,310,240
2017	3,536,740	715,512	(551,454)	25.95	3,700,798	1,827,433	1,873,365	16,183,605
2018	3,749,839	809,180	(642,207)	25.20	3,916,812	2,101,074	1,815,738	17,999,343
2019	3,970,368	899,967	(736,169)	24.45	4,134,166	2,185,933	1,948,233	19,947,576
2020	4,208,418	997,379	(842,381)	23.68	4,363,416	2,271,942	2,091,474	22,039,050
2021	4,466,141	1,101,953	(961,984)	22.91	4,606,110	2,376,054	2,230,056	24,269,106
2022	4,743,908	1,213,455	(1,096,661)	22.13	4,860,702	2,467,731	2,392,971	26,662,077
2023	5,047,631	1,333,104	(1,249,394)	21.34	5,131,341	2,576,292	2,555,049	29,217,126
2024	5,377,179	1,460,856	(1,421,758)	20.55	5,416,277	2,691,579	2,724,698	31,941,824
2025	5,735,578	1,597,091	(1,618,127)	19.74	5,714,542	2,831,818	2,882,724	34,824,548

Notes:

1. ARC and Employer Contributions are from 30-Year Forecast of Annual Required Contributions (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 plus ARC Adjustment.
5. Change in Net OPEB Obligation is the difference between the OPEB Cost and Employer Contributions.
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 3.5%.
8. Subsequent years' Interest on Net OPEB Obligation and ARC Adjustment computed at current discount rate of 5%.

## SECTION 5 - SENSITIVITY ANALYSIS

Below we illustrate the sensitivity of the Actuarial Accrued Liability and the Annual Required Contribution to a one percentage increase and decrease in the discount rate:

**TABLE 5.1 - DISCOUNT RATE ASSUMPTION**

	<u>Discount Rate -1%</u>	<u>Assumed Discount Rate</u>	<u>Discount Rate +1%</u>
<b>Discount Rate</b>	<b>4%</b>	<b>5%</b>	<b>6%</b>
<b>Actuarial Accrued Liability</b>			
Current Active Employees	\$32,120,112	\$24,693,661	\$19,384,218
Current Retirees	25,743,251	22,696,590	20,190,526
Total Actuarial Accrued Liability	\$57,863,363	\$47,390,251	\$39,574,744
<b>Change %</b>	<b>22.10%</b>		<b>-16.49%</b>
<b>Annual Required Contribution</b>			
Normal Cost	\$2,134,555	\$1,545,729	\$1,144,759
Actuarial Accrued Liability	\$57,863,363	\$47,390,251	\$39,574,744
Actuarial Value of Assets	4,844,357	4,844,357	4,844,357
Unfunded Actuarial Accrued Liability	\$53,019,006	\$42,545,894	\$34,730,387
Amortization Payment	1,767,300	1,623,889	1,505,435
Interest	156,074	158,481	159,012
Annual Required Contribution	\$4,057,929	\$3,328,099	\$2,809,206
<b>Change %</b>	<b>21.93%</b>		<b>-15.59%</b>

## SECTION 5 - SENSITIVITY ANALYSIS

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

**TABLE 5.2 - HEALTH CARE COST TREND ASSUMPTION**

	Trend -1% 6% in year 1 decreasing to 4%	Assumed Trend 7% in year 1 decreasing to 5%	Trend +1% 8% in year 1 decreasing to 6%
<b>Discount Rate</b>	<b>5%</b>	<b>5%</b>	<b>5%</b>
<b>Actuarial Accrued Liability</b>			
Current Active Employees	\$18,616,721	\$24,693,661	\$34,176,931
Current Retirees	20,200,748	22,696,590	26,095,370
Total Actuarial Accrued Liability	\$38,817,469	\$47,390,251	\$60,272,301
<b>Change %</b>	<b>-18.09%</b>		<b>27.18%</b>
<b>Annual Required Contribution</b>			
Normal Cost	\$1,078,767	\$1,545,729	\$2,303,666
Actuarial Accrued Liability	\$38,817,469	\$47,390,251	\$60,272,301
Actuarial Value of Assets	4,844,357	4,844,357	4,844,357
Unfunded Actuarial Accrued Liability	\$33,973,112	\$42,545,894	\$55,427,944
Amortization Payment	1,296,684	1,623,889	2,115,570
Interest	118,773	158,481	220,962
Annual Required Contribution	\$2,494,224	\$3,328,099	\$4,640,198
<b>Change %</b>	<b>-25.06%</b>		<b>39.42%</b>

## SECTION 6 - PLAN PROVISIONS

**Retirement 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

**Ordinary Disability Eligibility:** Any member who is unable to perform his or her duties due to a non-occupational disability and has ten or more years of creditable service.

**Accidental Disability Eligibility:** Any member who is unable to perform his or her duties due to a job-related disability.

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

<u>Non-Medicare Plans - July 1, 2016</u>	<u>Individual</u>	<u>Family</u>
Fallon Direct	\$520	\$1,247
Fallon Select	\$691	\$1,658
HP Independence	\$816	\$1,992
HP Primary Choice	\$610	\$1,489
Health New England	\$535	\$1,326
NHP Prime	\$512	\$1,357
Tufts Health Navigator	\$686	\$1,675
Tufts Health Spirit	\$515	\$1,241
UniCare Basic with CIC	\$1,002	\$2,346
UniCare Basic without CIC	\$959	\$2,246
UniCare Community Choice	\$488	\$1,170
UniCare PLUS	\$655	\$1,566
<u>Medicare Plans - July 1, 2016</u>		
Fallon Senior	\$312	
HP Medicare Enhance	\$439	
Health New England MedPlus	\$411	
Tufts Medicare Complement	\$398	
Tufts Medicare Preferred	\$276	
UniCare OME with CIC	\$375	
UniCare OME without CIC	\$364	

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## SECTION 6 - PLAN PROVISIONS

<b>Participant Contributions:</b>	Retired employees contribute 50% of the total medical premium rates.
<b>Continuation of Coverage to Spouse After Death of Retiree:</b>	Surviving spouse may continue coverage for lifetime by paying the required medical premium rate.
<b>Life Insurance Benefit:</b>	Retirees are eligible for a \$1,000 life insurance benefit.
<b>Life Insurance Premium:</b>	The total monthly cost is \$1.50.
<b>Life Insurance</b>	Retired employees contribute \$.75 of the monthly life insurance premium.
<b>PPACA Excise Tax:</b>	The Patient Protection and Affordable Care Act (PPACA) applies a 40% excise tax, commonly referred to as the "Cadillac Tax", to the cost of plan benefits in excess of statutory thresholds beginning in 2020. The 2020 thresholds are assumed to be \$10,820 for individual and \$29,175 for family coverage and increase by the Consumer Price Index (CPI) in future years. The annual limits are increased by \$1,750 for individual and \$3,660 for family coverage for retirees not eligible for Medicare benefits.

## SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

**Valuation Date:** July 1, 2015

**Discount Rate:** 5% per annum, compounded annually.

Investment returns:

Plan assets (long-term rate of return): 7.50%

Employer assets (short-term rate of return): 3.50%

The development of the discount rate used in the valuation is based on the percentage of the Annual Required Contribution (ARC) funded and is shown below:

1. ARC under fully funded plan	2,278,165
2. Pay-as-you-go (PAYG)	1,300,449
3. GAP between ARC and PAYG (1. - 2.)	977,716
4. OPEB Trust contribution	390,577
5. Percent of GAP funded	40%
6. Multiplied by long-term rate	3.00%
7. Percent of GAP not funded	60%
8. Multiplied by short-term rate	2.10%
9. Discount rate (6. + 8.)	5.10%

Based on the methodology above, the Town has selected a discount rate of 5%.

**Amortization Method:** Increasing at 4% per year over 30 years on a closed amortization period for partial pre-funding. Previously, level dollar amount.

Increasing at 4% per year over 30 years on a closed amortization period for full pre-funding. Previously, level dollar amount.

**Health Care Cost Trend Rates:**

Year	Trend
1	7.00%
2	6.50%
3	6.00%
4	5.50%
Ultimate	5.00%

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



## SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

**Medical Plan Participation:** 70% of eligible retirees will elect medical coverage upon retirement.

**Life Insurance Participation:** 65% 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. Previously, 55%.

For current retirees, the actual census information provided is used.

**Medical Per Capita Costs:** Annual per capita costs for the fiscal year beginning July 1, 2015 are as follows:

<u>Age</u>	<u>Male</u>	<u>Female</u>
Under 20	\$2,898	\$3,402
20-24	\$2,283	\$3,622
25-29	\$2,376	\$5,343
30-34	\$2,985	\$6,751
35-39	\$3,744	\$6,954
40-44	\$4,665	\$7,122
45-49	\$5,888	\$7,818
50-54	\$7,760	\$9,197
55-59	\$10,084	\$10,634
60-64	\$12,941	\$12,657
65-69	\$3,491	\$3,400
70-74	\$4,184	\$4,010
75-79	\$4,940	\$4,653
80-84	\$5,678	\$5,337
85-89	\$6,325	\$5,965
90-94	\$6,886	\$6,366
95+	\$7,319	\$6,157

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## SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

**Retiree Contributions:** Annual average per capita participant contributions for the fiscal year beginning July 1, 2015 are as follows:

<u>Plan</u>	<u>Contribution</u>
Pre-Medicare	\$4,431
Medicare	\$2,104

**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 2020, a 40% excise tax is applied on the excess of the plan costs over the thresholds, which increase annually by CPI.

**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

**Pre-Retirement Mortality:** Pre-retirement mortality rates for General and Public Safety employees are based on the RP-2000 Employees Mortality Table, base year 2000, projected with full generational mortality using Scale BB.

**Post-Retirement Mortality:** Post-retirement mortality rates for General and Public Safety employees are based on the RP-2000 Healthy Annuitant Mortality Table, base year 2000, projected with full generational mortality using Scale BB.

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

<u>Service</u>	<u>Group 1</u>	<u>Group 4</u>
0	15.0%	1.5%
5	7.6%	1.5%
10	5.4%	1.5%
15	3.3%	1.5%
20	2.0%	1.5%
30	0.0%	0.0%

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

<u>Age</u>	<u>Group 1</u>	<u>Group 4</u>
20	0.02%	0.20%
30	0.03%	0.30%
40	0.10%	0.30%
50	0.19%	1.25%

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

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

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

<u>Age</u>	<u>Group 1</u>		<u>Group 4</u>	
	<u>Male</u>	<u>Female</u>	<u>Age</u>	<u>All</u>
55-59	2.0%	5.5%	45-49	1.0%
60-61	12.0%	5.0%	50-54	2.0%
62-64	30.0%	15.0%	55-59	15.0%
65-68	40.0%	15.0%	60-61	20.0%
69	50.0%	20.0%	62-64	25.0%
70	100.0%	100.0%	65	100.0%

## SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

**Pre-Retirement Mortality:** Pre-retirement mortality rates for Teachers are based on the RP-2014 Employees Mortality Table, base year 2014, projected with full generational mortality using Scale BB.

**Post-Retirement Mortality:** Post-retirement mortality rates for Teachers are based on the RP-2014 Healthy Annuitant Mortality Table, base year 2014, projected with full generational mortality using Scale BB.

**Turnover Rates:** Turnover rates for Teachers are as follows:

<u>Age</u>	<u>Service</u>					
	0		5		10+	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
20	13.0%	10.0%	5.5%	7.0%	1.5%	5.0%
30	15.0%	15.0%	5.4%	8.8%	1.5%	4.5%
40	13.3%	10.5%	5.2%	5.0%	1.7%	2.2%
50	16.2%	9.8%	7.0%	5.0%	2.3%	2.0%

**Disability Rates:** Disability rates for Teachers are as follows:

<u>Age</u>	<u>Rate</u>
20	0.004%
30	0.006%
40	0.010%
50	0.050%
60	0.070%

35% of the disabilities are job-related.

**Retirement Rates:** Retirement rates for Teachers are as follows:

<u>Age</u>	<u>Years of Service</u>					
	Less than 20		20-30		30+	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
45	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
50	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
55	5.0%	3.0%	3.0%	3.0%	6.0%	5.0%
60	10.0%	10.0%	25.0%	20.0%	40.0%	35.0%
62	20.0%	12.0%	35.0%	30.0%	35.0%	35.0%
65	25.0%	20.0%	40.0%	30.0%	35.0%	35.0%
69	30.0%	30.0%	30.0%	30.0%	40.0%	30.0%
70	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

## SECTION 8 - PLAN MEMBER INFORMATION

**TABLE 8.1 - ACTIVE EMPLOYEES BY AGE and YEARS OF SERVICE AS OF JULY 1, 2015**

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	20	0	0	0	0	0	0	0	0	20	4%
25 to 29	57	1	0	0	0	0	0	0	0	58	10%
30 to 34	39	17	3	0	0	0	0	0	0	59	11%
35 to 39	33	11	16	2	0	0	0	0	0	62	11%
40 to 44	26	12	22	10	4	0	0	0	0	74	13%
45 to 49	32	8	17	18	5	3	1	0	0	84	16%
50 to 54	19	15	16	3	5	7	4	0	0	69	12%
55 to 59	17	13	24	9	4	4	4	0	0	75	14%
60 to 64	2	10	4	10	6	2	2	1	3	40	7%
65 to 69	1	1	1	1	2	1	1	0	0	8	1%
70 & up	0	0	0	1	2	0	0	0	1	4	1%
Total	246	88	103	54	28	17	12	1	4	553	
Percent	44%	16%	19%	10%	5%	3%	2%	0%	1%		100%
	Average Age:		44.6	Average Service:			9.1				

## SECTION 8 - PLAN MEMBER INFORMATION

**TABLE 8.2 - RETIRED EMPLOYEES, COVERED SPOUSES and SURVIVORS AS OF JULY 1, 2015**

Non-Medicare Plans

Age	Fallon Direct	Fallon Select	HP Independence	HP Primary Choice	Health New England	NHP Prime	Tufts Health Navigator	Tufts Health Spirit	UniCare Basic with CIC	UniCare Community Choice	UniCare PLUS	Total
Under 40	0	0	0	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0	0	0	0	0
50 to 54	0	1	0	0	0	1	0	0	1	0	0	3
55 to 59	0	2	1	2	1	0	1	1	2	0	1	11
60 to 64	1	2	2	4	0	0	9	0	5	1	3	27
65 to 69	0	0	2	2	0	0	0	0	0	1	0	5
70 to 74	1	0	0	0	0	0	0	0	1	0	1	3
75 to 79	0	0	0	0	0	0	2	0	1	0	0	3
80 to 84	0	0	0	0	0	0	1	0	0	0	0	1
85 to 89	0	0	0	0	0	0	0	0	0	0	0	0
90+	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>5</b>	<b>5</b>	<b>8</b>	<b>1</b>	<b>1</b>	<b>13</b>	<b>1</b>	<b>10</b>	<b>2</b>	<b>5</b>	<b>53</b>
<b>Covered Spouses</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>22</b>

## SECTION 8 - PLAN MEMBER INFORMATION

**TABLE 8.2 - RETIRED EMPLOYEES, COVERED SPOUSES and SURVIVORS AS OF JULY 1, 2015**

Medicare Plans:

Age	Fallon Senior	HP Medicare Enhance	Tufts Medicare Complement	Tufts Medicare Preferred	UniCare OME with CIC	Life Only	Total
Under 40	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	0
55 to 59	0	0	0	0	0	3	3
60 to 64	0	2	1	2	3	5	13
65 to 69	0	18	4	10	27	11	70
70 to 74	2	17	3	17	33	11	83
75 to 79	0	6	0	4	18	6	34
80 to 84	0	7	1	3	15	12	38
85 to 89	0	2	0	5	7	4	18
90+	0	1	1	0	3	2	7
<b>Total</b>	<b>2</b>	<b>53</b>	<b>10</b>	<b>41</b>	<b>106</b>	<b>54</b>	<b>266</b>
<b>Covered Spouses</b>	<b>2</b>	<b>29</b>	<b>8</b>	<b>19</b>	<b>60</b>		<b>118</b>

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## 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.

**Expected Benefit Payments** – Those OPEB amounts that are expected to be paid by the employer at various future times under a particular set of Actuarial Assumptions, taking into account such times as the advancement in age and past and future service credits.

**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.



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## SECTION 9 - GASB 45 GLOSSARY OF TERMS

**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.

**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

Subgroup	<u>Town</u>	<u>School</u>	<u>Pool</u>	<u>Transfer</u>	<u>Field Maintenance</u>	<u>Total</u>
<b>Summary of Member Data</b>						
Active Members	156	392	3	2	0	553
Average Age	45.5	44.2	44.9	53.1	0.0	44.6
Average Service	11.2	8.2	14.4	12.5	0.0	9.1
Retired Members and Survivors	110	208	0	0	1	319
Average Age	70.8	73.0	0.0	0.0	73.9	72.3
<b>Actuarial Accrued Liability - July 1, 2015</b>						
Active Employees	8,567,427	15,741,306	224,895	160,033	0	24,693,661
Retired Employees, Spouses and Survivors	8,186,024	14,464,672	0	0	45,894	22,696,590
Total	16,753,451	30,205,978	224,895	160,033	45,894	47,390,251
<b>Actuarial Value of Plan Assets - July 1, 2015</b>	1,712,582	3,087,736	22,989	16,359	4,691	4,844,357
<b>Unfunded Actuarial Accrued Liability</b>	15,040,869	27,118,242	201,906	143,674	41,203	42,545,894
<b>Annual Required Contribution (ARC) for FYE 2016</b>						
Normal Cost	390,872	1,136,969	13,668	4,220	0	1,545,729
Amortization of UAL	574,079	1,035,047	7,706	5,484	1,573	1,623,889
Interest	48,248	108,600	1,069	485	79	158,481
<b>Total</b>	<b>1,013,199</b>	<b>2,280,616</b>	<b>22,443</b>	<b>10,189</b>	<b>1,652</b>	<b>3,328,099</b>
<b>Annual OPEB Cost for FYE 2016</b>						
Annual Required Contribution	1,013,199	2,280,616	22,443	10,189	1,652	3,328,099
Interest on Net OPEB Obligation	168,350	277,525	3,225	2,344	882	452,326
Adjustment to annual required contribution	(261,555)	(431,173)	(5,010)	(3,642)	(1,371)	(702,751)
Annual OPEB cost	919,994	2,126,968	20,658	8,891	1,163	3,077,674
Expected Benefit Payments	(462,772)	(835,454)	(7)	(133)	(2,083)	(1,300,449)
OPEB Trust contributions	(118,906)	(267,647)	(2,634)	(1,196)	(194)	(390,577)
Employer contributions	(581,678)	(1,103,101)	(2,641)	(1,329)	(2,277)	(1,691,026)
Change in Net OPEB Obligation	338,316	1,023,867	18,017	7,562	(1,114)	1,386,648
Net OPEB Obligation (NOO), beginning of year	6,613,018	10,901,508	126,677	92,091	34,655	17,767,949
OPEB Trust transfer allocated to NOO	1,803,012	2,972,250	34,538	25,108	9,449	4,844,357
Net OPEB Obligation, beginning of year, adjusted	4,810,006	7,929,258	92,139	66,983	25,206	12,923,592
Net OPEB Obligation, end of year	5,148,322	8,953,125	110,156	74,545	24,092	14,310,240

Town of Sudbury Postemployment Benefits Other Than Pensions  
Actuarial Valuation as of July 1, 2015

## SECTION 10 - RESULTS BY SUBGROUP

Subgroup	<u>Town</u>	<u>School</u>	<u>Pool</u>	<u>Transfer</u>	<u>Field Maintenance</u>	<u>Total</u>
<b>Actuarial Accrued Liability - July 1, 2016</b>						
Total	17,527,339	32,054,009	250,484	172,329	46,054	50,050,215
<b>Actuarial Value of Plan Assets - July 1, 2016</b>	1,834,572	3,355,066	26,218	18,038	4,820	5,238,714
<b>Unfunded Actuarial Accrued Liability</b>	15,692,767	28,698,943	224,266	154,291	41,234	44,811,501
<b>Annual Required Contribution (ARC) for FYE 2017</b>						
Normal Cost	406,507	1,182,447	14,215	4,389	0	1,607,558
Amortization of UAL	616,612	1,127,659	8,812	6,063	1,620	1,760,766
Interest	51,156	115,505	1,151	523	81	168,416
<b>Total</b>	<b>1,074,275</b>	<b>2,425,611</b>	<b>24,178</b>	<b>10,975</b>	<b>1,701</b>	<b>3,536,740</b>
<b>Annual OPEB Cost for FYE 2017</b>						
Annual Required Contribution	1,074,275	2,425,611	24,178	10,975	1,701	3,536,740
Interest on Net OPEB Obligation	257,416	447,656	5,508	3,727	1,205	715,512
Adjustment to annual required contribution	(198,394)	(345,014)	(4,245)	(2,873)	(928)	(551,454)
Annual OPEB cost	1,133,297	2,528,253	25,441	11,829	1,978	3,700,798
Expected Employer premiums	(521,882)	(892,655)	(16)	(280)	(2,944)	(1,417,777)
OPEB Trust contributions	(124,432)	(280,955)	(2,801)	(1,271)	(197)	(409,656)
Employer contributions	(646,314)	(1,173,610)	(2,817)	(1,551)	(3,141)	(1,827,433)
Change in Net OPEB Obligation	486,983	1,354,643	22,624	10,278	(1,163)	1,873,365
Net OPEB Obligation, beginning of year	5,148,322	8,953,125	110,156	74,545	24,092	14,310,240
Net OPEB Obligation, end of year	5,635,305	10,307,768	132,780	84,823	22,929	16,183,605

Town of Sudbury Postemployment Benefits Other Than Pensions  
Actuarial Valuation as of July 1, 2015