



**TOWN OF SUDBURY**

**OTHER POSTEMPLOYMENT BENEFITS PROGRAM**

**ACTUARIAL VALUATION**

**July 1, 2011**

Prepared by:

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October 2, 2012

Ms. Maryanne Bilodeau  
Asst. Town Manager/HR 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, 2011. 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 are 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 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 3.5% 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 8% discount rate.

We also provide a 30-year forecast of the Annual Required Contributions (ARC) and a 10-year forecast of the Annual OPEB Cost and the Net OPEB Obligation in Section 4.

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

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Ms. Maryanne Bilodeau

October 2, 2012

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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 your medical plans as described in your benefit summaries. Our valuation is also based on medical plan rates provided in the file "GIC Rates 7-1-2012.pdf".

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.

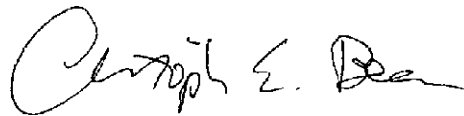
We appreciate this opportunity to be of service to the Town of Sudbury. We are available to answer any questions with respect to our valuation.

Respectfully submitted,



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



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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, 2011. 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's actuaries for the Retirement System pension valuations.

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  
Member, American Academy of Actuaries  
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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 for any employee who retires after attaining age 55 with 10 or more years of service or any age with 20 or more years of creditable service. 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, 2011, there are 537 active employees who may be eligible for benefits in the future and 330 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.

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 Sudbury, the payment of future benefits is determined using the current schedule of premiums under the Group Insurance Commission plans. We have used a single unadjusted premium rate applicable to both active employees and non-Medicare-eligible retirees because the Group Insurance Commission would offer the same premium rates if only non-Medicare-eligible retirees from the Town of Sudbury were covered. These premiums are increased in the future under the annual healthcare cost trend rate assumptions. The per capita costs utilized in this valuation are detailed in Section 7, Actuarial Assumptions and Methods.

## SECTION 1 - SUMMARY

A summary of principal valuation results from the current valuation and the prior valuation follows.

Valuation Date	<u>July 1, 2011</u>	<u>July 1, 2009</u> *
<b>Summary of Member Data</b>		
Active Members**	537	469
Average Age	45.6	N/A
Average Service	9.3	N/A
Retired Members and Survivors	220	207
Average Age	70.9	N/A
Covered Spouses of Retired Members	110	114
<b>Discount rate</b>	3.50%	4.00%
<b>Actuarial Accrued Liability</b>	\$34,275,241	\$36,411,392
<b>Normal Cost</b>	\$1,746,332	\$1,354,990
<b>Assets</b>	\$127,749	\$0
<b>Unfunded Actuarial Accrued Liability</b>	\$34,147,492	\$36,411,392
<b>Annual Required Contribution</b>	\$3,663,686	\$3,515,299
<b>Net OPEB Obligation/(Asset) - EOY</b>	\$10,777,405	\$2,731,900

\* From the July 1, 2009 valuation report prepared by Ricci Consultants.

\*\* For 2009, there were 469 covered employees. For 2011, there were 537 total employees, of which approximately 465 have elected either medical coverage, life insurance coverage or both.

### 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 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 3.5% discount rate to reflect a pay-as-you-go system with an expected return close to the rate of return on cash.

Town of Sudbury Postemployment Benefits Other Than Pensions  
Actuarial Valuation as of July 1, 2011

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## SECTION 1 - SUMMARY

### CHANGES

Many assumptions used in this valuation have changed from those used in the June 30, 2009 valuation and are detailed in Section 7. The major assumption changes are summarized below:

- ◆ the mortality table was changed from the RP-2000 Mortality projected to 2009 using Scale AA to the RP-2000 Mortality Table projected to 2011 using Scale AA.
- ◆ the discount rate for pay-as-you-go was changed from 4% to 3.5%.
- ◆ the turnover and retirement rates for Teachers have been updated to reflect the rates used by the Massachusetts Teachers Retirement System actuaries.
- ◆ the turnover and retirement rates for Public Safety employees have been updated to reflect the rates used by the Middlesex County Retirement System actuaries.
- ◆ life insurance participation rate was changed from 40% to 65%.

### RESULTS

We have provided results based on a discount rate of 3.5%. As shown in Table 4.2 of Section 4, the Annual OPEB Cost for the fiscal year ending June 30, 2012 under GASB 45 is \$3,519,173 and the estimated Annual OPEB Cost for the fiscal year ending June 30, 2013 under GASB 45 is \$3,643,706.

The accumulated Net OPEB Obligation as of June 30, 2012 is \$10,777,405 and the estimated Net OPEB Obligation as of June 30, 2013 is \$13,512,015.

The Actuarial Accrued Liability (AAL) as of July 1, 2011 is \$34,275,241. The AAL by status breakdown is shown below:

Actives:	\$20,105,392
Retirees, Beneficiaries and Surviving Spouses:	14,169,849
Total:	\$34,275,241



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## SECTION 1 - SUMMARY

In performing the actuarial valuation, various assumptions are made regarding future premium rates, mortality, retirement 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:

	Year 1	Year 2
Actuarial Accrued Liability, prior valuation	\$36,411,392	\$37,926,425
Normal Cost, prior valuation	1,354,990	1,409,190
Expected Benefit Payments	1,324,130	1,407,299
Interest	1,484,173	1,545,279
Expected Actuarial Accrued Liability	\$37,926,425	\$39,473,594
Actual Actuarial Accrued Liability		\$34,275,241
Gain/(Loss)		\$5,198,353

The actuarial gain of \$5,198,353 was comprised of the following:

- ◆ an actuarial experience loss increased the Accrued Liability by \$7,771,000 as a result of demographic changes and changes in the premium rates from the prior valuation.
- ◆ offering coverage through the Group Insurance Commission (GIC) decreased the Accrued Liability by \$15,959,000. This is in part due to lower than expected GIC premium rates for Medicare-eligible retirees and the use of a single, unadjusted premium rate applicable to both active employees and non-Medicare-eligible retirees.
- ◆ decreasing the discount rate from 4% to 3.5% increased the Accrued Liability by \$2,990,000.

## SECTION 2 - PRINCIPAL VALUATION RESULTS

The Actuarial Value of Plan Assets is equal to the market value. The asset activity during the prior and current fiscal year is as follows:

**TABLE 2.1 - OPEB TRUST ASSETS**

<b>Market Value of Assets</b>	
<b>Fiscal Year Ending</b>	<b><u>June 30, 2012</u></b>
Assets as of July 1, 2011	\$0
Contribution Receivable	\$127,749
Adjusted Assets, July 1	\$127,749
Employer Contributions	
Paid Premiums	\$893,648
OPEB Trust Deposits	0
Total Employer Contributions	\$893,648
Benefits Paid	(893,648)
Expenses	0
Investment Earnings	951
Assets as of June 30, 2012	\$128,700

Based on information provided in the Munis report for FY 2012.

## 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 3.5%, the rate of return on cash, and 8%, the rate of return on a dedicated trust if the Town were to fully pre-fund benefits:

**TABLE 2.2 - ACTUARIAL ACCRUED LIABILITY**

	Pay-As-You-Go	Full Pre-Funding
<b>Discount Rate</b>	<b>3.5%</b>	<b>8.0%</b>
<b>Current Active Employees</b>		
Pre-Medicare Gross Benefit	\$9,424,886	\$5,310,401
Pre-Medicare Participant Contributions	4,713,057	2,655,547
Net Pre-Medicare Benefit	\$4,711,829	\$2,654,854
Post - Medicare Gross Benefit	\$30,787,127	\$11,002,491
Post - Medicare Participant Contributions	15,393,564	5,501,246
Net Post - Medicare Benefit	\$15,393,563	\$5,501,245
<b>Total Current Active Employees</b>	<b>\$20,105,392</b>	<b>\$8,156,099</b>
 <b>Current Retirees</b>		
Pre-Medicare Gross Benefit	\$3,041,875	\$2,406,299
Pre-Medicare Participant Contributions	1,521,136	1,203,306
Net Pre-Medicare Benefit	\$1,520,739	\$1,202,993
Post - Medicare Gross Benefit	\$25,298,220	\$15,629,265
Post - Medicare Participant Contributions	12,649,110	7,814,632
Net Post - Medicare Benefit	\$12,649,110	\$7,814,633
<b>Total Current Retirees</b>	<b>\$14,169,849</b>	<b>\$9,017,626</b>
<b>Total Actuarial Accrued Liability (AAL)</b>	<b>\$34,275,241</b>	<b>\$17,173,725</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 3.5%, the rate of return on cash, and 8%, the rate of return on a dedicated trust if the Town were to fully pre-fund benefits:

**TABLE 2.3 - NORMAL COST**

	Pay-As-You-Go	Full Pre-Funding
<b>Discount Rate</b>	<b>3.5%</b>	<b>8.0%</b>
<b>Current Active Employees</b>		
Pre-Medicare Gross Benefit	\$826,265	\$358,452
Pre-Medicare Participant Contributions	413,186	179,249
Net Pre-Medicare Benefit	\$413,079	\$179,203
Post - Medicare Gross Benefit	\$2,666,507	\$757,714
Post - Medicare Participant Contributions	1,333,254	378,857
Net Post - Medicare Benefit	\$1,333,253	\$378,857
<b>Total Current Active Employees</b>	<b>\$1,746,332</b>	<b>\$558,060</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>\$1,746,332</b>	<b>\$558,060</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 level dollar amortization over the maximum acceptable amortization period of 30 years. For the period beginning July 1, 2011, the ARC, calculated under the parameters of this actuarial valuation, would be:

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

	Pay-As-You-Go	Full Pre-Funding
<b>Discount Rate</b>	<b>3.5%</b>	<b>8.0%</b>
1. Normal Cost	\$1,746,332	\$558,060
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$34,275,241	\$17,173,725
b. Actuarial Value of Plan Assets	\$127,749	\$127,749
c. Unfunded Actuarial Accrued Liability	\$34,147,492	\$17,045,976
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$34,147,492	\$17,045,976
b. Amortization Period in years	30	30
c. Factor Increasing Rate	0.0%	0.0%
d. Amortization Factor	19.04	12.16
e. Amortization Amount (3.a. / 3.d.)	\$1,793,461	\$1,401,807
4. Interest	\$123,893	\$156,789
5. Annual Required Contribution (1. + 3.e. + 4.)	\$3,663,686	\$2,116,656
6. Net OPEB Obligation / (Asset) beginning of year	\$8,101,940	Not Applicable
7. Interest on Net OPEB Obligation at 4.00%	\$324,078	Not Applicable
8. Adjustment to Annual Required Contribution at 4.00%	\$468,591	Not Applicable
9. Annual OPEB Cost (5. + 7. - 8.)	\$3,519,173	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, 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			
Fiscal Year Ending	<u>6/30/2012</u>	<u>6/30/2011</u>	<u>6/30/2010</u>
Discount rate	3.5%	4.0%	4.0%
1. Annual Required Contribution	\$3,663,686	\$3,659,299	\$3,515,299
2. Interest on Net OPEB Obligation	324,078	140,742	135,204
3. Adjustment to annual required contribution	468,591	197,970	91,755
4. Annual OPEB cost/(expense)	\$3,519,173	\$3,602,071	\$3,558,748
5. Employer contributions (including subsidy)	843,708	845,333	782,694
6. Change in Net OPEB Obligation	\$2,675,465	\$2,756,738	\$2,776,054
7. Net OPEB Obligation (Asset) - beginning of year	\$8,101,940	\$5,345,202	\$2,569,148
8. Net OPEB Obligation (Asset) - end of year	\$10,777,405	\$8,101,940	\$5,345,202

Plan History				
Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation	
6/30/2012	3,519,173	24.0%	10,777,405	
6/30/2011	3,602,071	23.5%	8,101,940	
6/30/2010	3,558,748	22.0%	5,345,202	
6/30/2009	3,341,000	23.1%	2,569,148	

Schedule of Funding Progress						
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)
7/1/2011	127,749	34,275,241	34,147,492	0.37%	31,225,800	109.4%
7/1/2009	0	36,411,392	36,411,392	0.00%	26,874,811	135.5%

## SECTION 4 - FORECASTS

**TABLE 4.1 - ANNUAL REQUIRED CONTRIBUTIONS**

FYE June 30	(1) Normal Cost	(2) Actuarial Accrued Liability	(3) Assets, BOY	(4) Unfunded Actuarial Accrued Liability (2) - (3)	(5) Expected Benefit Payments	(6) Contributions	(7) Amortization Amount	(8) Interest	(9) ARC (1) + (7) + (8)
2012	1,746,332	34,275,241	127,749	34,147,492	843,708	843,708	1,793,461	123,893	3,663,686
2013	1,816,185	36,423,982	132,220	36,291,762	909,096	909,096	1,906,080	130,279	3,852,544
2014	1,888,832	38,653,704	136,848	38,516,856	982,774	982,774	2,022,944	136,912	4,048,688
2015	1,964,385	40,961,700	141,638	40,820,062	1,053,002	1,053,002	2,143,911	143,790	4,252,086
2016	2,042,960	43,357,227	146,595	43,210,632	1,119,448	1,119,448	2,269,466	150,935	4,463,361
2017	2,124,678	45,850,324	151,726	45,698,598	1,190,320	1,190,320	2,400,136	158,368	4,683,182
2018	2,209,665	48,443,156	157,036	48,286,120	1,256,105	1,256,105	2,536,036	166,100	4,911,801
2019	2,298,052	51,147,772	162,532	50,985,240	1,312,513	1,312,513	2,677,796	174,155	5,150,003
2020	2,389,974	53,981,143	168,221	53,812,922	1,374,881	1,374,881	2,826,309	182,570	5,398,853
2021	2,485,573	56,945,372	174,109	56,771,263	1,431,736	1,431,736	2,981,684	191,354	5,658,611
2022	2,584,996	60,054,453	180,203	59,874,250	1,480,405	1,480,405	3,144,656	200,538	5,930,190
2023	2,688,396	63,325,740	186,510	63,139,230	1,524,448	1,524,448	3,316,136	210,159	6,214,691
2024	2,795,932	66,773,734	193,038	66,580,696	1,563,426	1,563,426	3,496,885	220,249	6,513,066
2025	2,907,769	70,414,054	199,794	70,214,260	1,624,286	1,624,286	3,687,724	230,842	6,826,335
2026	3,024,080	74,235,620	206,787	74,028,833	1,664,572	1,664,572	3,888,069	241,925	7,154,074
2027	3,145,043	78,270,338	214,025	78,056,313	1,714,441	1,714,441	4,099,596	253,562	7,498,201
2028	3,270,845	82,520,734	221,516	82,299,218	1,752,439	1,752,439	4,322,438	265,765	7,859,048
2029	3,401,679	87,011,441	229,269	86,782,172	1,792,390	1,792,390	4,557,887	278,585	8,238,151
2030	3,537,746	91,754,092	237,293	91,516,799	1,829,031	1,829,031	4,806,555	292,051	8,636,352
2031	3,679,256	96,766,289	245,598	96,520,691	1,866,488	1,866,488	5,069,364	306,202	9,054,822
2032	3,826,426	102,062,269	254,194	101,808,075	1,888,111	1,888,111	5,347,063	321,072	9,494,561
2033	3,979,483	107,673,931	263,091	107,410,840	1,905,594	1,905,594	5,641,326	336,728	9,957,537
2034	4,138,662	113,622,628	272,299	113,350,329	1,912,405	1,912,405	5,953,274	353,218	10,445,154
2035	4,304,208	119,937,351	281,829	119,655,522	1,888,149	1,888,149	6,284,429	370,602	10,959,239
2036	4,476,376	126,669,106	291,693	126,377,413	1,874,010	1,874,010	6,637,469	388,985	11,502,830
2037	4,655,431	133,829,051	301,902	133,527,149	1,846,791	1,846,791	7,012,981	408,394	12,076,806
2038	4,841,648	141,452,607	312,469	141,140,138	1,816,437	1,816,437	7,412,822	428,906	12,683,376
2039	5,035,314	149,566,602	323,405	149,243,197	1,782,823	1,782,823	7,838,403	450,580	13,324,297
2040	5,236,727	158,199,229	334,724	157,864,505	1,737,102	1,737,102	8,291,203	473,478	14,001,408
2041	5,446,196	167,388,974	346,439	167,042,535	1,697,643	1,697,643	8,773,242	497,680	14,717,118

Town of Sudbury Postemployment Benefits Other Than Pensions  
Actuarial Valuation as of July 1, 2011

30 years open, 3.5% discount rate.

## SECTION 4 - FORECASTS

**TABLE 4.2 - ANNUAL OPEB COST and NET OPEB OBLIGATION**

FYE June 30	ARC	Interest on Net OPEB Obligation	ARC Adjustment	Amortization Factor	Annual OPEB Cost	Contributions	Change in Net OPEB Obligation	Net OPEB Obligation Balance
								8,101,940
2012	3,663,686	324,078	468,591	17.29	3,519,173	843,708	2,675,465	10,777,405
2013	3,852,544	377,209	586,047	18.39	3,643,706	909,096	2,734,610	13,512,015
2014	4,048,688	472,921	734,748	18.39	3,786,861	982,774	2,804,087	16,316,102
2015	4,252,086	571,064	887,227	18.39	3,935,923	1,053,002	2,882,921	19,199,023
2016	4,463,361	671,966	1,043,993	18.39	4,091,334	1,119,448	2,971,886	22,170,909
2017	4,683,182	775,982	1,205,596	18.39	4,253,568	1,190,320	3,063,248	25,234,157
2018	4,911,801	883,196	1,372,167	18.39	4,422,830	1,256,105	3,166,725	28,400,882
2019	5,150,003	994,031	1,544,366	18.39	4,599,668	1,312,513	3,287,155	31,688,037
2020	5,398,853	1,109,081	1,723,112	18.39	4,784,822	1,374,881	3,409,941	35,097,978
2021	5,658,611	1,228,429	1,908,536	18.39	4,978,504	1,431,736	3,546,768	38,644,747

Notes:

1. ARC and Contributions are from 10-Year Forecast of Annual Required Contribution.
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 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 4.00%.
8. Subsequent years' Interest on Net OPEB Obligation and ARC Adjustment computed at current discount rate of 3.50%.



## 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>
<b>Discount Rate</b>	<b>3.5%</b>	<b>3.5%</b>	<b>3.5%</b>
<b>Current Active Employees</b>			
Pre-Medicare Gross Benefit	\$9,424,886	\$10,827,145	\$8,245,832
Pre-Medicare Participant Contributions	4,713,057	5,414,279	4,123,454
Net Pre-Medicare Benefit	\$4,711,829	\$5,412,866	\$4,122,378
Post - Medicare Gross Benefit	\$30,787,127	\$39,891,576	\$24,034,678
Post - Medicare Participant Contributions	15,393,564	19,945,788	12,017,339
Net Post - Medicare Benefit	\$15,393,563	\$19,945,788	\$12,017,339
<b>Total Current Active Employees</b>	<b>\$20,105,392</b>	<b>\$25,358,654</b>	<b>\$16,139,717</b>
<b>Current Retirees</b>			
Pre-Medicare Gross Benefit	\$3,041,875	\$3,245,859	\$2,872,547
Pre-Medicare Participant Contributions	1,521,136	1,623,141	1,436,461
Net Pre-Medicare Benefit	\$1,520,739	\$1,622,718	\$1,436,086
Post - Medicare Gross Benefit	\$25,298,220	\$28,548,072	\$22,570,005
Post - Medicare Participant Contributions	12,649,110	14,274,036	11,285,002
Net Post - Medicare Benefit	\$12,649,110	\$14,274,036	\$11,285,003
<b>Total Current Retirees</b>	<b>\$14,169,849</b>	<b>\$15,896,754</b>	<b>\$12,721,089</b>
<b>Total Actuarial Accrued Liability (AAL)</b>	<b>\$34,275,241</b>	<b>\$41,255,408</b>	<b>\$28,860,806</b>

## 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>
<b>Discount Rate</b>	<b>3.5%</b>	<b>3.5%</b>	<b>3.5%</b>
<b>Current Active Employees</b>			
Pre-Medicare Gross Benefit	\$826,265	\$1,009,893	\$679,979
Pre-Medicare Participant Contributions	413,186	505,012	340,034
Net Pre-Medicare Benefit	\$413,079	\$504,881	\$339,945
Post - Medicare Gross Benefit	\$2,666,507	\$3,653,464	\$1,971,274
Post - Medicare Participant Contributions	1,333,254	1,826,732	985,637
Net Post - Medicare Benefit	\$1,333,253	\$1,826,732	\$985,637
<b>Total Current Active Employees</b>	<b>\$1,746,332</b>	<b>\$2,331,613</b>	<b>\$1,325,582</b>
<b>Current Retirees</b>			
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
<b>Total Current Retirees</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Total Normal Cost</b>	<b>\$1,746,332</b>	<b>\$2,331,613</b>	<b>\$1,325,582</b>

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## SECTION 6 - PLAN PROVISIONS

**Eligibility:** Retirement after attaining age 55 with 10 or more years of service or any age with 20 or more years of creditable service.

**Medical Premium Rates:** The total monthly cost by plan as of July 1, 2012 are shown below:

<u>Non-Medicare Plans</u>	<u>Individual</u>	<u>Family</u>
Fallon Direct Care	\$454.50	\$1,090.80
Fallon Select Care	\$573.38	\$1,376.10
Harvard Pilgrim Independence Plan	\$654.56	\$1,597.12
Harvard Pilgrim Choice Plan	\$523.64	\$1,277.70
Health New England	\$445.14	\$1,103.62
NHP Care	\$475.84	\$1,260.92
Tufts Health Plan Navigator	\$600.36	\$1,463.98
Tufts Health Plan Spirit	\$478.40	\$1,166.62
UniCare Indemnity with CIC	\$892.92	\$2,085.14
UniCare Indemnity without CIC	\$852.08	\$1,990.42
UniCare Indemnity Plan/Community Choice	\$423.66	\$1,016.78
UniCare Indemnity Plan/PLUS	\$577.78	\$1,379.14
 <u>Medicare Plans</u>		
Fallon Senior Plan	\$264.54	
Harvard Pilgrim Medicare Enhance	\$387.44	
Health New England MedPlus	\$359.58	
Tufts Health Plan Medicare Complement	\$390.94	
Tufts Health Plan Medicare Preferred	\$243.20	
UniCare Indemnity Plan (OME)	\$373.52	

**Participant Contributions:** Retired employees contribute 50% of the total premium.

**Continuation of Coverage to Spouse After Death of Retiree:** Surviving spouse may continue coverage for lifetime by paying the required percentage of the medical premium rates.

**Life Insurance Benefit:** Retirees are eligible for a \$1,000 life insurance benefit.

**Life Insurance Premium:** The total monthly cost is \$.52.

**Life Insurance Contributions:** Retired employees with life insurance coverage contribute \$.26 per month for life insurance.

## SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

**Valuation Date:** July 1, 2011

**Discount Rates:** 3.50% pay-as-you-go.  
8.00% full pre-funding.

**Amortization Method:** Level dollar amount over thirty (30) years on an open amortization period for pay-as-you-go.  
Level dollar amount over thirty (30) years on a closed amortization period for full pre-funding.

**Health Care Cost Trend Rates:**

Year	Trend
1	9.00%
2	8.00%
3	7.00%
4	6.00%
5	5.00%
Ultimate	5.00%

**Mortality Table:** RP-2000 Mortality Table, projected to 2011, using Scale AA.

**Turnover Rates:** *Non-Teachers:*

Groups 1 and 2		Group 4	
Service	Rate	Service	Rate
0	15.00%	0	1.50%
1	12.00%	1	1.50%
2	10.00%	2	1.50%
3	9.00%	3	1.50%
4	8.00%	4	1.50%
5-9	7.60%	5	1.50%
10-14	5.40%	6	1.50%
15-19	3.30%	7	1.50%
20-24	2.00%	8	1.50%
25-29	1.00%	9	1.50%
30+	0.00%	10	1.50%
		11+	0.00%

## SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

**Turnover Rates:**

*Teachers:*

<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	12.0%	10.0%	4.5%	9.0%	1.0%	5.0%
30	11.4%	12.0%	4.5%	9.0%	1.0%	5.0%
40	9.7%	11.0%	5.4%	6.5%	1.7%	2.9%
50	10.0%	8.2%	4.8%	4.2%	2.2%	2.1%

**Disability Rates:**

None.

**Retirement Rates:**

*Non-Teachers:*

<u>Age</u>	<u>Groups 1 and 2</u>		<u>Group 4</u>
	<u>Male</u>	<u>Female</u>	<u>All</u>
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%	

*Teachers:*

<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%	1.5%	2.0%	2.0%
55	3.0%	2.0%	3.0%	3.0%	6.0%	6.0%
60	15.0%	20.0%	20.0%	16.0%	50.0%	35.0%
62	20.0%	25.0%	30.0%	30.0%	40.0%	40.0%
65	40.0%	30.0%	40.0%	30.0%	50.0%	35.0%
69	40.0%	30.0%	30.0%	30.0%	50.0%	30.0%
70	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

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## SECTION 7 - ACTUARIAL ASSUMPTIONS AND METHODS

**Medical Plan Participation:** 70% of eligible retirees will elect to participate.

**Life Insurance Participation:** 65% of eligible retirees will elect to participate.

**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.

55% of employees are assumed to retire with a covered spouse.

**Medical Per Capita Costs:** Annual per capita costs for the fiscal year beginning July 1, 2011 are as follows:

<u>Age</u>	<u>Cost</u>
Under 65	\$7,667
65 and Older	\$3,876

**Retiree Contributions:** Annual per capita participant contributions for the fiscal year beginning July 1, 2011 are as follows:

Non-Medicare	\$3,834
Medicare	\$1,938

**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.

51 employees hired after the valuation date of July 1, 2011 were assumed hired on the valuation date.

## SECTION 8 - PLAN MEMBER INFORMATION

**TABLE 8.1 - ACTIVE EMPLOYEES BY AGE and YEARS OF SERVICE AS OF JULY 1, 2011**

Age	Years of Service									Total	Percent
	<u>0 to 4</u>	<u>5 to 9</u>	<u>10 to 14</u>	<u>15 to 19</u>	<u>20 to 24</u>	<u>25 to 29</u>	<u>30 to 34</u>	<u>35 to 39</u>	<u>40 &amp; up</u>		
Under 25	15	0	0	0	0	0	0	0	0	15	3%
25 to 29	49	2	0	0	0	0	0	0	0	51	9%
30 to 34	29	20	2	0	0	0	0	0	0	51	9%
35 to 39	22	21	13	2	0	0	0	0	0	58	11%
40 to 44	17	19	23	11	2	1	0	0	0	73	14%
45 to 49	25	22	8	10	7	2	0	0	0	74	14%
50 to 54	21	24	17	3	4	8	0	1	0	78	15%
55 to 59	10	16	19	17	7	6	4	2	0	81	15%
60 to 64	7	6	9	9	4	2	0	1	1	39	7%
65 to 69	1	3	2	2	1	0	2	0	1	12	2%
70 & up	0	2	3	0	0	0	0	0	0	5	1%
Total	196	135	96	54	25	19	6	4	2	537	
Percent	36%	25%	18%	10%	5%	4%	1%	1%	0%		100%
Average Age:			45.6	Average Service:			9.3				

## SECTION 8 - PLAN MEMBER INFORMATION

**TABLE 8.2 - RETIRED PLAN PARTICIPANTS and SURVIVORS AS OF JULY 1, 2011**

Non-Medicare Plans:

Age	FCHP Direct	FCHP Select	HP Ind.	HP Primary Choice	HNE	NHP Care	THP Navigator	UniCare State Basic	UniCare State Choice	UniCare State PLUS	Total
Under 40	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
45 to 49	0	0	0	0	0	1	0	0	0	0	1
50 to 54	0	0	0	1	0	0	0	1	0	0	2
55 to 59	0	0	0	0	0	0	3	2	0	1	6
60 to 64	1	3	10	2	1	0	8	2	3	1	31
65 to 69	0	0	0	0	0	0	2	0	0	2	4
70 to 74	1	0	0	0	0	0	0	2	0	2	5
75 to 79	0	0	0	0	0	0	2	0	0	0	2
80 to 84	0	0	0	0	0	0	0	0	0	0	0
85 to 89	0	0	0	0	0	0	0	0	0	0	0
90+	0	0	0	0	0	0	0	0	1	0	1
<b>Total</b>	<b>2</b>	<b>3</b>	<b>10</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>15</b>	<b>7</b>	<b>4</b>	<b>6</b>	<b>52</b>
Covered Spouses	1	2	5	1	1	0	9	5	2	3	29

\* In addition, there are 49 retirees with life insurance coverage only.



## SECTION 8 - PLAN MEMBER INFORMATION

**TABLE 8.2 - RETIRED PLAN PARTICIPANTS and SURVIVORS AS OF JULY 1, 2011**

Medicare Plans:

Age	Fallon Senior Plan	HP Medicare Enhance	Health NE MedPlus	THP Medicare Complement	THP Medicare Preferred	UniCare State Indemnity	Total
Under 40	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	0
55 to 59	0	0	0	0	0	0	0
60 to 64	0	2	0	2	2	4	10
65 to 69	0	17	0	2	13	28	60
70 to 74	0	7	0	2	6	23	38
75 to 79	0	5	0	0	6	11	22
80 to 84	1	3	0	2	5	14	25
85 to 89	0	1	0	0	3	4	8
90+	0	0	0	2	0	3	5
<b>Total</b>	<b>1</b>	<b>35</b>	<b>0</b>	<b>10</b>	<b>35</b>	<b>87</b>	<b>168</b>
Covered Spouses	0	21	0	4	19	37	81

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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.

**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.

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## 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 DEPARTMENT

Unit	<u>Town</u>	<u>Public Safety</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	102	61	366	6	2	0	537
Average Age	49.8	41.0	45.4	32.7	49.1	0.0	45.6
Average Service	11.0	12.3	8.4	7.8	8.5	0.0	9.3
Retired Members and Survivors	105	0	203	0	0	0	308
Average Age	68.9	0.0	72.0	0.0	0.0	0.0	70.9
<b>Actuarial Accrued Liability - July 1, 2011 (4.5%)</b>							
Active Employees	3,427,479	3,216,258	13,241,136	152,941	67,578	0	20,105,392
Retired Employees and Survivors	5,962,804	0	8,207,045	0	0	0	14,169,849
Total	9,390,283	3,216,258	21,448,181	152,941	67,578	0	34,275,241
<b>Actuarial Value of Plan Assets - July 1, 2011</b>	34,999	11,987	79,941	570	252	0	127,749
<b>Unfunded Actuarial Accrued Liability</b>	9,355,284	3,204,271	21,368,240	152,371	67,326	0	34,147,492
<b>Annual Required Contribution (ARC) for FYE 2012 (3.5%)</b>							
Normal Cost	196,636	257,583	1,265,294	18,098	8,721	0	1,746,332
Amortization of UAL	491,349	168,292	1,122,281	8,003	3,536	0	1,793,461
Interest	24,079	14,906	83,565	914	429	0	123,893
<b>Total</b>	<b>712,064</b>	<b>440,781</b>	<b>2,471,140</b>	<b>27,015</b>	<b>12,686</b>	<b>0</b>	<b>3,663,686</b>

1. Public Safety retirees are included in the Town results
2. Assets are allocated based on Actuarial Accrued Liability.