

October 6, 2010

# Willis

Ms. Maryanne Bilodeau Asst. Town Manager/HR Director Town of Sudbury 278 Old Sudbury Road Sudbury, MA 01776

Dear Maryanne:

We are pleased to present the enclosed report summarizing the results of our actuarial valuation of the Town of Sudbury postemployment health insurance benefit program as of July 1, 2009.

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).

The principal results of our valuation are summarized in Section I. The Substantive Plan Provisions and Actuarial Methods and Assumptions are shown in Sections VI and VII, respectively. Section VIII summarizes the demographic profile of active employees and retirees.

The required disclosures under GASB 45 are presented in Section II.

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 V 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 4.00% compounded annually. To illustrate the impact on cost of prefunding the Town's benefit liabilities, our report also includes valuation results based on an alternative 8.00% discount rate.

We also provide a 10-year forecast of both the Annual Required Contribution (ARC) and the Net OPEB Obligation in Sections III and IV, respectively.

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 files "ratechrt.xls" and "Insurance Rates.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.

Ms. Maryanne Bilodeau October 6, 2010 Page 2

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,

inda Bournul

Linda L. Bournival, FSA Member, American Academy of Actuaries 781-444-7121

Stuart Tr. Ruberstein

Stuart F. Rubinstein, FSA Member, American Academy of Actuaries 617-351-7510





# TOWN OF SUDBURY POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS ACTUARIAL VALUATION

July 1, 2009

Reported Submitted October 6, 2010





# Table of Contents

Section								
Section	Executive Summary	1						
Ι	Principal Valuation Results	5						
	Exhibit A - Actuarial Present Value of Future Benefits							
	Exhibit B - Actuarial Accrued Liability	6						
	Exhibit C - Normal Cost	7						
	Exhibit D - Annual Required Contribution	8						
II	GASB 45 Accounting Disclosures	9						
III	10-Year Forecast of Annual Required Contributions	10						
IV	10-Year Forecast of Annual Net OPEB Obligation							
V	Sensitivity Analysis	12						
	Exhibit E - Sensitivity to Assumed Health Care Cost Trend Rate of Actuarial Accrued Liability	12						
	Exhibit F - Sensitivity to Assumed Health Care Cost Trend Rate of Normal Cost	13						
VI	Substantive Plan Provisions	14						
VII	Actuarial Methods and Assumptions	15						
VIII	Demographic Information	18						
IX	Glossary of Terms	20						
Х	Unit Allocations	22						





#### Background

The Town of Sudbury provides postemployment medical, dental and life insurance benefits to Town retirees and their covered dependents. The Town provides benefits for any employee who retires at age 55 with 10 years of creditable service or any age with 20 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. The GASB has issued GASB Statement Number 45 (GASB 45) that dramatically changes the way the Town accounts for the cost of its postemployment insurance benefits.

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 current 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 less than \$10 million. As a result, the Town was required to comply with GASB 45 for the fiscal year beginning July 1, 2009.

#### Actuarial Valuation

As of July 1, 2009, there are 469 active employees who may be eligible for benefits in the future and 297 retired employees and survivors who are currently receiving benefits. There are 104 retired employees currently not covered under any medical plan or life insurance. 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, the payment of future benefits is determined using the current schedule of premiums 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 annual healthcare cost trend rate assumptions. The age-adjusted per capita costs utilized in this valuation are detailed in Section VII, Actuarial Methods and Assumptions.





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. So in reality the plan premium represents less than 100% of the actual cost that is required to be recognized under the GASB standard.

#### **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 4%, 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 4% discount rate to reflect no pre-funding of future payments. We show the sensitivity to the selection of the discount rate in the principal results of the July 1, 2009 valuation:

	Pay-as-you-go	Pre-funded
Discount Rate	4%	81/0
Present Value of Future Benefits		
Pre-Medicare Gross Benefit	\$20,916,960	\$13,030,310
Pre-Medicare Participant Contributions	5,535,014	3,454,257
Net Pre-Medicare Benefit	\$15,381,946	\$9,576,053
Post - Medicare Gross Benefit	\$60,086,148	<b>\$27,795,24</b> 0
Post - Medicare Participant Contributions	27,433,023	12,931,519
Net Post - Medicare Benefit	\$32,653,125	\$14,863,721
Total Present Value of Future Benefits	\$48,035,071	\$24,439,774
Actuarial Accrued Liability		
Pre-Medicare Gross Benefit	\$14,782,841	\$10,471,973
Pre-Medicare Participant Contributions	3,904,960	2,771,801
Net Pre-Medicare Benefit	\$10,877,881	\$7,700,172
Post - Medicare Gross Benefit	\$46,837,976	\$24,320,272
Post - Medicare Participant Contributions	21,304,465	11,274,803
Net Post - Medicare Benefit	\$25,533,511	\$13,045,469
Total Actuarial Accrued Liability	\$36,411,392	\$20,745,641





Normal Cost		
Pre-Medicare Gross Benefit	\$661,070	\$327,167
Pre-Medicare Participant Contributions	174,918	86,802
Net Pre-Medicare Benefit	\$486,152	\$240,365
Post - Medicare Gross Benefit	\$1,613,018	\$512,024
Post - Medicare Participant Contributions	744,180	243,236
Net Post - Medicare Benefit	\$868,838	\$268,788
Total Normal Cost	\$1,354,990	\$509,153

The annual expense under GASB 45 equals the Normal Cost plus the 30-year amortization of the unfunded actuarial accrued liability plus interest to the end of the fiscal year.

	Pay-as-you-go	Pre-funded	
Discount Rate	4%	8%	
Normal Cost	\$1,354,990	\$509,153	
Unfunded Actuarial Accrued Liability	36,411,392	20,745,641	
30-Year Amortization of Unfunded Actuarial Accrued Liabi	2,025,105	1,706,056	
Interest	135,204	177,217	
Annual Required Contribution	\$3,515,299	\$2,392,426	

#### Changes

As this is the first actuarial valuation under GASB 45 for the Town of Sudbury, there are no changes to report.

#### Results

The Annual Required Contribution for the fiscal year ending June 30, 2010 of \$3,515,299, using a discount rate of 4%, is greater than the cash pay-as-you-go expense of \$783,399. When the Annual Required Contribution exceeds employer contributions, a Net OPEB Obligation is created. The Net OPEB Obligation is recorded as a liability on the employer's balance sheet.





#### 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, 2009. 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 Contribution 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,

Linda Bourniel

Linda L. Bournival, FSA Member, American Academy of Actuaries 781-444-7121

Stuart Tr. Ruberstein

Stuart F. Rubinstein, FSA Member, American Academy of Actuaries 617-351-7510





The Actuarial Present Value of Future Benefits is 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. Below is the Actuarial Present Value of Future Benefits assuming a discount rate of 4%, the rate of return on cash, and 8%, the rate of return on a dedicated trust if the Town were to pre-fund benefits:

	Pay-as-you-go	Pre-funded	
Discount Rate	4%	8%	
Current Active Employees			
Pre-Medicare Gross Benefit	\$15,338,874	\$8,114,621	
Pre-Medicare Participant Contributions	4,060,295	2,153,573	
Net Pre-Medicare Benefit	\$11,278,579	\$5,961,048	
Post - Medicare Gross Benefit	\$35,396,404	\$12,001,804	
Post - Medicare Participant Contributions	16,352,307	5,710,867	
Net Post - Medicare Benefit	\$19,044,097	\$6,290,937	
Total Current Active Employees	\$30,322,676	\$12,251,985	
Current Retirees			
Pre-Medicare Gross Benefit	\$5,578,086	\$4,915,689	
Pre-Medicare Participant Contributions	1,474,719	1,300,684	
Net Pre-Medicare Benefit	\$4,103,367	\$3,615,005	
Post - Medicare Gross Benefit	\$24,689,744	\$15,793,436	
Post - Medicare Participant Contributions	11,080,716	7,220,652	
Net Post - Medicare Benefit	\$13,609,028	\$8,572,784	
Total Current Retirees	\$17,712,395	\$12,187,789	
Total Present Value of Future Benefits (PVFB)	\$48,035,071	\$24,439,774	

## Exhibit A - Actuarial Present Value of Future Benefits





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 4%, the rate of return on cash, and 8%, the rate of return on a dedicated trust if the Town were to pre-fund benefits:

## Exhibit B - Actuarial Accrued Liability

	Pay-as-you-go	Pre-funded
Discount Rate	4%	8%
Current Active Employees		
Pre-Medicare Gross Benefit	\$9,204,755	\$5,556,284
Pre-Medicare Participant Contributions	2,430,241	1,471,117
Net Pre-Medicare Benefit	\$6,774,514	\$4,085,167
Post - Medicare Gross Benefit	\$22,148,232	\$8,526,836
Post - Medicare Participant Contributions	10,223,749	4,054,151
Net Post - Medicare Benefit	\$11,924,483	\$4,472,685
Total Current Active Employees	\$18,698,997	\$8,557,852
Current Retirees		
Pre-Medicare Gross Benefit	\$5,578,086	\$4,915,689
Pre-Medicare Participant Contributions	1,474,719	1,300,684
Net Pre-Medicare Benefit	\$4,103,367	\$3,615,005
Post - Medicare Gross Benefit	\$24,689,744	\$15,793,436
Post - Medicare Participant Contributions	11,080,716	7,220,652
Net Post - Medicare Benefit	\$13,609,028	\$8,572,784
Total Current Retirees	\$17,712,395	\$12,187,789
Total Actuarial Accrued Liability (AAL)	\$36,411,392	\$20,745,641





The Normal Cost is the portion of the Actuarial Present Value of Future Benefits which is allocated to a valuation year. Below is the Normal Cost assuming a discount rate of 4%, the rate of return on cash, and 8%, the rate of return on a dedicated trust if the Town were to pre-fund benefits:

# Exhibit C - Normal Cost

	Pay-as-you-go	Pre-funded
Discount Rate	4%	8%
Current Active Employees		
Pre-Medicare Gross Benefit	\$661,070	\$327,167
Pre-Medicare Participant Contributions	174,918	86,802
Net Pre-Medicare Benefit	\$486,152	\$240,365
Post - Medicare Gross Benefit	\$1,613,018	\$512,024
Post - Medicare Participant Contributions	744,180	243,236
Net Post - Medicare Benefit	\$868,838	\$268,788
Total Current Active Employees	\$1,354,990	\$509,153
Current Retirees		
Pre-Medicare Gross Benefit	\$0	\$0
Pre-Medicare Participant Contributions	0	0
Net Pre-Medicare Benefit	\$0	<b>\$</b> 0
Post - Medicare Gross Benefit	\$0	<b>\$</b> 0
Post - Medicare Participant Contributions	0	0
Net Post - Medicare Benefit	\$0	\$0
Total Current Retirees	\$0	\$0
Total Normal Cost (NC)	\$1,354,990	\$509,153





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, 2009, the ARC, calculated under the parameters of this actuarial valuation, would be:

# Exhibit D - Annual Required Contribution

		Pay-as-you-go	Pre-funded
	Discount Rate	4%	8%
1.	Normal Cost	\$1,354,990	\$509,153
2.	Unfunded Actuarial Accrued Liability		
	<ul><li>a. Actuarial Accrued Liability</li><li>b. Actuarial Value of Plan Assets</li><li>c. Unfunded Actuarial Accrued Liability</li></ul>	\$36,411,392 \$0 \$36,411,392	\$20,745,641 \$0 \$20,745,641
3.	Amortization of Unfunded Actuarial Accrued Liability		
	<ul> <li>a. Unfunded Actuarial Accrued Liability</li> <li>b. Amortization Period</li> <li>c. Factor Increasing Rate</li> <li>d. Amortization Factor</li> <li>e. Amortization Amount (3.a. / 3.d.)</li> </ul>	\$36,411,392 30 0.0% 17.98 \$2,025,105	\$20,745,641 30 0.0% 12.16 \$1,706,056
4.	Interest	\$135,204	\$177,217
5.	Annual Required Contribution (1. + 3.e. + 4.)	\$3,515,299	\$2,392,426



# Section II - GASB 45 Accounting Disclosures

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 Sections VII and VI, respectively.

#### Annual OPEB Cost and Net OPEB Obligation

1. Annual Required Contribution	\$3,515,299
2. Interest on Net OPEB Obligation	0
3. Adjustment to annual required contribution	0
4. Annual OPEB cost/(expense)	\$3,515,299
5. Employer contributions made*	783,399
6. Change in Net OPEB Obligation	\$2,731,900
7. Net OPEB Obligation - beginning of year	\$O
8. Net OPEB Obligation - end of year	\$2,731,900

\* Information received from the Town of Sudbury.

#### **Plan History**

Fiscal Year Ended	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Increase in Net OPEB Obligation
6/30/2010	3,515,299	22%	2,731,900

#### **Schedule of Funding Progress**

Actuarial Valuation Date	ation Assets Liability AAL (UAAL)		AAL (UAAL)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a) / c)
7/1/2009	0	36,411,392	36,411,392	0.00%	26,874,811	135.5%



Willis

### Section III - 10-Year Forecast of Annual Required Contributions

					Unfunded Actuarial						
	Fiscal		Actuarial		Accrued	Expected					
	Year,		Accrued		Liability	Benefit	Interest on		Amortization		
,	July 1	Normal Cost	Liability	Assets	(UAAL)	Payments	UAAL	Contributions	Amount	Interest	ARC
	2009	1,354,990	36,411,392	-	36,411,392	1,324,130	1,484,173	783,399	2,025,105	135,204	3,515,299
	2010	1,409,190	37,926,425	-	37,926,425	1,407,299	1,545,279	832,604	2,109,367	140,742	3,659,299
	2011	1,465,558	39,473,595	-	39,473,595	1,466,663	1,608,233	867,726	2,195,417	146,439	3,807,414
	2012	1,524,180	41,080,724	-	41,080,724	1,477,346	1,674,649	874,047	2,284,801	152,359	3,961,340
	2013	1,585,147	42,802,206	-	42,802,206	1,531,579	1,744,863	906,133	2,380,545	158,628	4,124,320
	2014	1,648,553	44,600,637	-	44,600,637	1,517,592	1,819,616	897,857	2,480,569	165,165	4,294,287
	2015	1,714,495	46,551,214	-	46,551,214	1,557,148	1,899,485	921,260	2,589,055	172,142	4,475,692
	2016	1,783,075	48,608,046	-	48,608,046	1,655,139	1,982,542	979,235	2,703,451	179,461	4,665,987
	2017	1,854,398	50,718,523	-	50,718,523	1,697,586	2,068,965	1,004,348	2,820,830	187,009	4,862,237
	2018	1,928,574	52,944,301	-	52,944,301	1,725,752	2,160,400	1,021,012	2,944,622	194,928	5,068,124

Notes:

- 1. Normal Cost is assumed to increase annually by the discount rate of 4.00%.
- 2. Unfunded Actuarial Accrued Liability, end of year, equals Unfunded Actuarial Accrued Liability, beginning of year, plus Normal Cost and Interest, less Expected Benefit Payments.
- 3. Interest on UAAL is computed on the Unfunded Actuarial Accrued Liability, Normal Cost and 1/2 Expected Benefit Payments.
- 4. Amortization Amount is the amount necessary to amortize the Unfunded Actuarial Accrued Liability over 30 years at a discount rate of 4.00%.
- 5. Interest is computed on the Normal Cost and the Amortization Amount.
- 6. The ARC (Annual Required Contribution) is the Normal Cost plus the Amortization Amount plus Interest.



# Town of Sudbury Postemployment Benefits Other Than Pensions Actuarial Valuation as of July 1, 2009

Willis

Fiscal Year, July 1	ARC	Interest on Net OPEB Obligation	ARC Adjustment	Amortization Factor	OPEB Cost	Contributions	Change in Net OPEB Obligation	Net OPEB Obligation Balance
2009	3,515,299	0	0	17.29	3,515,299	783,399	2,731,900	2,731,900
2010	3,659,299	109,276	158,005	17.29	3,610,570	832,604	2,777,966	5,509,866
2011	3,807,414	220,395	318,674	17.29	3,709,135	867,726	2,841,409	8,351,275
2012	3,961,340	334,051	483,012	17.29	3,812,379	874,047	2,938,332	11,289,607
2013	4,124,320	451,584	652,956	17.29	3,922,948	906,133	3,016,815	14,306,422
2014	4,294,287	572,257	827,439	17.29	4,039,105	897,857	3,141,248	17,447,670
2015	4,475,692	697,907	1,009,119	17.29	4,164,480	921,260	3,243,220	20,690,890
2016	4,665,987	827,636	1,196,697	17.29	4,296,926	979,235	3,317,691	24,008,581
2017	4,862,237	960,343	1,388,582	17.29	4,433,998	1,004,348	3,429,650	27,438,231
2018	5,068,124	1,097,529	1,586,942	17.29	4,578,711	1,021,012	3,557,699	30,995,930

#### Section IV - 10-Year Forecast of Net OPEB Obligation

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 at the discount rate of 4.00%.
- 3. ARC Adjustment is the prior year Net OPEB Obligation Balance amortized over 30 years at the discount rate of 4.00%.
- 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.



# Section V - Sensitivity Analysis

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:

#### Exhibit E - Sensitivity Analysis of Actuarial Accrued Liability

	Assumed		
—	Trend	Trend +1%	Trend -1%
Discount Rate	4%	4%	4%
Current Active Employees			
Pre-Medicare Gross Benefit	\$9,204,755	\$10,536,767	\$8,079,963
Pre-Medicare Participant Contributions	2,430,241	2,779,797	2,134,861
Net Pre-Medicare Benefit	\$6,774,514	\$7,756,970	\$5,945,102
Post - Medicare Gross Benefit	\$22,148,232	\$28,850,489	\$17,188,872
Post - Medicare Participant Contribution	10,223,749	13,219,495	7,991,987
Net Post - Medicare Benefit	\$11,924,483	\$15,630,994	\$9,196,885
Total Current Active Employees	\$18,698,997	\$23,387,964	\$15,141,987
Current Retirees			
Pre-Medicare Gross Benefit	\$5,578,086	\$5,737,325	\$5,426,147
Pre-Medicare Participant Contributions	1,474,719	1,516,494	1,434,853
Net Pre-Medicare Benefit	\$4,103,367	\$4,220,831	\$3,991,294
Post - Medicare Gross Benefit	\$24,689,744	\$27,884,993	\$21,988,791
Post - Medicare Participant Contribution	11,080,716	12,459,166	9,910,494
Net Post - Medicare Benefit	\$13,609,028	\$15,425,827	\$12,078,297
Total Current Retirees	\$17,712,395	\$19,646,658	\$16,069,591
Total Actuarial Accrued Liability (AAL)	\$36,411,392	\$43,034,622	\$31,211,578





# Section V - Sensitivity Analysis

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:

# Exhibit F - Sensitivity Analysis of Normal Cost

	Assumed		
_	Trend	Trend +1%	Trend -1%
Discount Rate	4%	4%	4%
Current Active Employees			
Pre-Medicare Gross Benefit	\$661,070	\$798,439	\$550,543
Pre-Medicare Participant Contributions	174,918	211,105	145,778
Net Pre-Medicare Benefit	\$486,152	\$587,334	\$404,765
Post - Medicare Gross Benefit	\$1,613,018	\$2,214,470	\$1,189,207
Post - Medicare Participant Contribution	744,180	1,014,162	552,604
Net Post - Medicare Benefit	\$868,838	\$1,200,308	\$636,603
Total Current Active Employees	\$1,354,990	\$1,787,642	\$1,041,368
Current Retirees			
Pre-Medicare Gross Benefit	\$0	\$0	\$0
Pre-Medicare Participant Contributions	0	<sup>"</sup> 0	" 0
Net Pre-Medicare Benefit	\$0	<b>\$</b> O	<b>\$</b> 0
Post - Medicare Gross Benefit	\$0	<b>\$</b> 0	<b>\$</b> 0
Post - Medicare Participant Contribution	0	0	0
Net Post - Medicare Benefit	<b>\$</b> 0	<b>\$</b> 0	<b>\$</b> 0
Total Current Retirees	\$0	\$0	\$0
Total Normal Cost	\$1,354,990	\$1,787,642	\$1,041,368





# Section VI - Substantive Plan Provisions

Eligibility:	Retirement at age 55 with 10 years of creditable service or any age with 20 years of creditable service.						
Medical Premium Rates:	The total annual cost for the year beginning July 1, 2009 by plan are shown						
	Non-Medicare Plans	Individual	<u>Family</u>				
	Network Blue RS	\$6,339	\$16,496				
	Blue Choice RS	\$7,397	\$18,841				
	Medicare Plans						
	Medex II	\$4,008					
	Tufts Preferred	\$2,368					
Participant Contributions:	Eligible retirees and their spouses contribute 50% of premium rates.						
Continuation of Coverage to Spouse After Death of Retiree:	o Surviving spouse may continue coverage for lifetime by paying the required percentage of the medical plan premium rate.						
Life Insurance:	Retired employees are eligible for a \$2,000 life insurance benefit.						
Life Insurance Contributions:	Retired employees electing life insurance contribute \$3.12 annually for the benefit.						





Section VII - Actuarial Methods and Assumptions					
Valuation Date:	July 1, 2009				
Discount Rates:	4.00% pay-as-you-go 8.00% pre-funded				
Amortization Method:	Level dollar amount over thirty (30) years on an open amortization period.				

# Health Care Cost Trend Rates:

		Current			
	Year	Valuation			
	2009	10.00%			
	2010	9.00%			
	2011	8.00%			
	2012	7.00%			
	2013	6.00%			
	Ultimate	5.00%			
Mortality Table:	RP-2000 Mortality Tabl	e, projected to 2009.			
Turnover Rates:	Illustrative turnover rates are shown below:				

Years of Service	Turnover Rate
0	15.0%
1	12.0%
2	10.0%
3	9.0%
4	8.0%
5	7.6%
10	5.4%
15	3.3%
20	2.0%
25	1.0%
30	0.0%

#### **Disability Rates:**

None



# Section VII - Actuarial Methods and Assumptions

**Retirement Rates:** 

	<u>Age</u>	<u>Male</u>	<u>Female</u>			
	45	0.0%	0.0%			
	50	1.0%	1.5%			
	55	2.0%	5.5%			
	60	12.0%	5.0%			
	62	30.0%	15.0%			
	65	40.0%	15.0%			
	69 70	50.0%	20.0%			
	70	100.0%	100.0%			
Medical Plan Participation:	70% of eligible retire	es will elect	to participate.			
Life Insurance Participation:	40% 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 retired employees are assumed to retire with a covered spouse.					
Medical Per Capita Costs:	Annual per capita o follows:	costs for the	e fiscal year beginning July 1, 2009 are as			
	Age		Incurred Medical Costs			
	Under 50		\$10,272			
	50-54		\$10,272			
	55-59		\$12,188			
	60-64		\$14,800			
	65-69		\$3,146			
	70-74		\$3,594			
	75-79		\$4,008			
	80-84		\$4,296			
	85-89		\$4,448			
	90+		\$4,493			

Illustrative retirement rates are shown below:





Section VII - Actuarial Methods and Assumptions

Participant Contributions:	Annual per capita participant contributions for the fiscal year beginning July 1, 2009 are as follows:				
	ContributionsNon-Medicare\$3,749Medicare\$1,814				
Section 18 of Chapter 32B:	We understand that the Town has adopted Section 18 of Chapter 32B of the Massachusetts General Laws, which requires all Medicare-eligible retirees to enroll in a Medicare supplemental plan.				
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, including the following:				
	Four employees hired after the end of the fiscal year (June 30, 2010) were excluded from the valuation.				
	Four retirees with missing birth dates enrolled in a Medicare supplemental plan were assumed to be 65 years of age.				
	One retiree with a missing birth date enrolled in a non-Medicare supplemental plan was assumed to be 62.5 years of age.				
	Employees with a hire date after the valuation date (July 1, 2009) were assumed to be hired on the valuation date.				





# Section VIII - Demographic Information

	Years of Service										
Age	<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>	Total	Percent
Under 25	18	0	0	0	0	0	0	0	0	18	4%
25 to 29	29	3	0	0	0	0	0	0	0	32	7%
30 to 34	31	19	1	0	0	0	0	0	0	51	11%
35 to 39	20	25	12	4	1	0	0	0	0	62	13%
40 to 44	20	21	9	3	6	0	0	0	0	59	12%
45 to 49	19	17	7	6	7	3	0	0	0	59	12%
50 to 54	23	26	16	4	6	3	3	2	0	83	18%
55 to 59	14	9	15	11	6	5	1	1	1	63	13%
60 to 64	5	4	3	3	7	0	2	2	0	26	6%
65 to 69	1	4	3	2	0	1	1	0	1	13	3%
70 <b>&amp;</b> up	0	1	1	0	0	0	1	0	0	3	1%
Total	180	129	67	33	33	12	8	5	2	469	
Percent	38%	28%	14%	7%	7%	3%	2%	1%	0%		100%

#### Active Employees by Age and Years of Service as of July 1, 2009



# Section VIII - Demographic Information

Age	Network Blue RS	Blue Choice RS	Medex II	Tufts Preferred	Life only	Total
Under 40	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0
45 to 49	1	0	0	0	0	1
50 to 54	2	0	0	0	0	2
55 to 59	10	2	0	0	0	12
60 to 64	33	9	7	0	0	49
65 to 69	5	3	54	24	0	86
70 to 74	4	0	37	8	0	49
75 to 79	1	1	32	6	0	40
80 to 84	0	0	20	9	0	29
85 to 89	0	0	14	5	0	19
90+	1	0	9	0	0	10
Total	57	15	173	52	0	297

#### Retired Plan Participants and Survivors as of July 1, 2009

These counts include 90 spouses covered under a Medicare-supplement plan. Not included in these counts are 24 covered spouses in a non-Medicare plan.





#### Section IX - 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.

**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.



#### Section IX - Glossary of Terms

**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.





# Town of Sudbury Postemployment Benefits Other Than Pensions Actuarial Valuation as of July 1, 2009

# Section X - Unit Allocation

Unit	Town	School	Atkinson Pool	Transfer/Landfill	Field Maintenance	Total
Summary of Member Data						
Active Members	153	310	4	2	0	469
Average Age	46	45	38	51	0	45
Average Service	12	8	8	13	0	10
Retired Members and Survivors	104	193	0	0	0	297
Average Age	69	72	0	0	0	71
Actuarial Accrued Liability - 4%						
Active Employees	7,536,505	10,877,586	142,633	142,273	0	18,698,997
Retired Employees	7,536,284	10,176,111	0	0	0	17,712,395
Total	15,072,789	21,053,697	142,633	142,273	0	36,411,392
Actuarial Value of Plan Assets	0	0	0	0	0	0
Unfunded Actuarial Accrued Liability	15,072,789	21,053,697	142,633	142,273	0	36,411,392
Annual Required Contribution (ARC) - 4%						
Normal Cost	414,945	915,618	17,693	6,735	0	1,354,990
Amortization of UAL	838,309	1,170,950	7,933	7,913	0	2,025,105
Interest	50,130	83,463	1,025	586	0	135,204
Total	1,303,384	2,170,031	26,651	15,234	0	3,515,299
Actuarial Accrued Liability - 8%						
Active Employees	3,470,993	4,978,690	39,446	68,723	0	8,557,852
Retired Employees	5,166,076	7,021,713	0	0	0	12,187,789
Total	8,637,069	12,000,403	39,446	68,723	0	20,745,641
Actuarial Value of Plan Assets	0	0	0	0	0	0
Unfunded Actuarial Accrued Liability	8,637,069	12,000,403	39,446	68,723	0	20,745,641
Annual Required Contribution (ARC) - 8%						
Normal Cost	154,269	346,314	5,335	3,235	0	509,153
Amortization of UAL	710,285	986,875	3,244	5,652	0	1,706,056
Interest	69,164	106,656	686	711	0	177,217
Total	933,718	1,439,845	9,265	9,598	0	2,392,426
Riccia onsultants, Incorporated		Page	22			Willis

