ACTUARIAL VALUATION OF OTHER THAN PENSION POST-EMPLOYMENT BENEFITS (OPEB) FOR FISCAL YEAR ENDING JUNE 30, 2015

SEPTEMBER 30, 2015



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INTRODUCTION

Financial Risk Analysts, LLC has been retained by the City of Newton (the City) to provide an actuarial valuation of the City's retiree medical and life insurance post-retirement benefits program for the fiscal year ending June 30, 2015. The City initially complied with GASB-45 for the fiscal year July 1, 2007 to June 30, 2008, so this is the eighth year of GASB-45 compliance.

Medical and life insurance are the two most common types of other (than pension) postretirement employee benefits (OPEB) provided by an employer to retirees and their beneficiaries.

The City presently provides life and health insurance benefits for active and retired employees and their covered dependents. The City has reported to us 2,592 active employees, 353 pre-Medicare retirees, 2,221 Medicare retirees and 189 over age 65 non-Medicare retirees who have elected health insurance.

Harvard Pilgrim, Tufts EPO, Tufts POS and Tufts Medicare Complement Plan are self insured. Both the Legacy and Advantage plans are self insured. Tufts Medicare Preferred and Medicare HMO Blue are fully insured.

Life insurance benefits provided by the City are fully insured. For health insurance, actives have a choice among the Harvard, Tufts-EPO and Tufts-POS Preferred Advantage plans while retirees not on Medicare can access these 3 "Legacy" plans as well as the "Advantage" plans. Most retirees on Medicare are in the Tufts Medicare Complement Plan. For life insurance, the only option is a flat \$5,000 benefit which does not reduce at retirement. Per City policy, retirees not on Medicare have the same benefit options as active employees.

A detailed description of the City's census, benefit, and premium information is presented on Exhibits 7, 8, and 9.

CONDITIONS AND LIMITATIONS

DATA

Within this report we used data and other information provided to us by the City. This data consisted of the following:

- Census Information the demographics of the active, pre-Medicare retiree and Medicare retiree population covered for medical and life insurance benefits as of the date of the most recent pension valuation. For active employees, date of hire was also included.
- Benefit Information a description of the different health and life insurance plans available to participants.
- Funding Information a description of how the life and health insurance plans are funded including the contributions required from employees and retirees.
- Premium Rates the premium rates for the various plans and the percentage of each premium rate that the City pays.
- Life Insurance In-Force Information a summary of the life insurance schedules for actives and retirees and the participant contributions required.
- Requirements for Retirement the age/service requirements for retirement with an unreduced pension benefit and the amount of benefit reduction for early retirement.
- Probabilities of Retirement the probability that a general or uniformed employee eligible to retire will actually retire.
- Retirement Election Rates The percentage of active participants who opt to continue their life and health insurance benefits (and pay the associated premiums) at retirement.

Although the data supplied were reviewed for purposes of reasonability, we have not independently audited or verified this information and we assume it to be accurate and complete. The results of our analysis will be contingent upon the reliability of the information supplied to us and such reliability is the responsibility of the City. Should the City become aware of any significant discrepancies in the data reported to us, we should be notified of such discrepancies and this report will be amended, if necessary.

UNCERTAINTY

Actuarial projections, by their nature, are estimates of future contingent events, which cannot be known with certainty. The City's ultimate liability for medical and life insurance benefits will be subject to events that have yet to occur such as the future employee attrition rate, retirements, and particularly interest rates and medical cost inflation.

While we believe the results presented in this report are reasonable and reflect the use of accepted actuarial principles and standards of practice, it is possible that the actual future OPEB liability of the City will differ, perhaps materially, from what we have projected herein. Nothing in this report should be construed as a warranty or guarantee as to the adequacy of the liability estimates contained herein.

DISTRIBUTION AND USE

This report is provided solely for the use of the City of Newton in evaluating its OPEB liability for its fiscal year ending June 30, 2015. A copy of this report may also be provided to the Town's auditors with the proviso that the report is copied in its entirety and that each party receiving a copy of this report agrees to not distribute the report to any other third party.

This report is neither intended nor necessarily appropriate for any other purpose. However, as a public entity, we understand that the City's documents are available to the public. We request that the distribution of this report to any third party be done under the following conditions:

- > this report is distributed unaltered and in its entirety; and
- each receiving party agrees not to discuss, reference or distribute this report to any other party.

Each and every party receiving a copy of this report should understand that the receipt of this report should not serve as a substitute for their own due diligence regarding this project. Each party further agrees that no reliance should be placed on this report or the data contained within this report that would create any duty or liability by Financial Risk Analysts, LLC to the party.

THE RECEIVING PARTY IS DEEMED TO HAVE ACCEPTED ALL AFOREMENTIONED TERMS AND CONDITIONS BY ACCEPTING AND RETAINING A COPY OF THIS REPORT.

REQUIRED DISCLOSURES

Required Information for the Fiscal Year ending June 30, 2015 and prior two years.

	City of Newton GASB-45 Required Disclosures							
		FY 2013-14	FY 2014-15					
A.	Discount Rate	2.00%	2.04%	2.04%				
B.	Expected Post Retirement Benefit Obligation	\$905,697,206	\$863,092,820	\$1,112,597,505				
	1. Impact of a 1% Change in Interest Assumption		20%	13%				
C.	Funded Status							
	1. Actuarial Accrued Liability (AAL)							
	Active Employees	\$233,792,635	\$233,385,414	\$284,421,167				
	Retirees	\$368,516,636	\$321,991,803	\$419,209,310				
	Total	\$602,309,271	\$555,377,217	\$703,630,477				
	2. Actuarial Value of Assets	\$538,537	\$1,119,811	\$2,118,738				
	3. Unfunded Actuarial Accrued Liability (1) - (2)	\$601,780,734	\$554,257,406	\$701,511,739				
	4. Funded Ratio (2) / (3)	0.05%	0.20%	0.30%				
	5. Annual Covered Payroll	\$182,530,249	\$191,588,714	\$200,956,483				
	6. Ratio of Unfunded AAL to Covered Payroll (3)/(5)	340%	290%	349%				
D.	Annual Required Contribution (ARC)							
	1. Normal Cost (Service Cost)	\$18,833,849	\$18,908,754	\$23,974,728				
	2. Amortization of Unfunded Accrued Liability	\$30,245,632	\$28,848,638	\$30,865,329				
	3. Annual Required Contribution (ARC) (1) + (2)	\$49,079,482	\$47,757,392	\$54,840,057				
E.	Annual OPEB Cost							
	1. ARC	\$49,079,482	\$47,757,392	\$54,840,057				
	2. Interest on Net OPEB Obligation	\$2,957,502	\$3,624,258	\$4,208,726				
	3. Adjustment to ARC	\$5,930,009	\$9,247,041	\$10,978,148				
	4. Annual OPEB Cost (1) + (2) - (3)	\$46,106,974	\$42,134,609	\$48,070,635				
F.	Net OPEB Obligation Estimates							
	1. Net OPEB Obligation - beginning of year	\$147,879,064	\$177,540,524	\$202,591,741				
	2. Annual OPEB Cost	\$46,106,975	\$42,134,609	\$48,070,635				
	3. Total Contributions Made	\$16,445,515	\$17,083,392	\$18,302,193				
	4. Net OPEB Obligation - end of year (1)+(2)-(3)	\$177,540,524	\$202,591,741	\$232,360,183				

	City of Newton GASB-45 Disclosures Under Fully Funded Scenario for FY 2014-15						
		FY 2012-13	FY 2013-14	FY 2014-15			
A.	Discount Rate	2.00%	2.04%	7.04%			
B.	Expected Post Retirement Benefit Obligation 1. Impact of a 1% Change in Interest Assumption	\$905,697,206	\$863,092,820 20%	\$401,903,548 13%			
C.	Funded Status						
	1. Actuarial Accrued Liability (AAL)						
	Active Employees	\$233,792,635	\$233,385,414	\$86,727,852			
	Retirees	\$368,516,636	\$321,991,803	\$234,505,654			
	Total	\$602,309,271	\$555,377,217	\$321,233,505			
	2. Actuarial Value of Assets	\$538,537	\$1,119,811	\$2,118,738			
	3. Unfunded Actuarial Accrued Liability (1) - (2)	\$601,780,734	\$554,257,406	\$319,114,767			
	4. Funded Ratio (2) / (3)	0.05%	0.20%	0.66%			
	5. Annual Covered Payroll	\$182,530,249	\$191,588,714	\$200,956,483			
	6. Ratio of Unfunded AAL to Covered Payroll (3)/(5)	340%	290%	159%			
D.	Annual Required Contribution (ARC)						
	1. Normal Cost (Service Cost)	\$18,833,849	\$18,908,754	\$6,125,544			
	2. Amortization of Unfunded Accrued Liability	\$30,245,632	\$28,848,638	\$14,040,510			
	3. Annual Required Contribution (ARC) $(1) + (2)$	\$49,079,482	\$47,757,392	\$20,166,054			
E.	Annual OPEB Cost						
	1. ARC	\$49,079,482	\$47,757,392	\$20,166,054			
	2. Interest on Net OPEB Obligation	\$2,957,502	\$3,624,258	\$14,524,229			
	3. Adjustment to ARC	\$5,930,009	\$9,247,041	\$10,978,148			
	4. Annual OPEB Cost (1) + (2) - (3)	\$46,106,974	\$42,134,609	\$23,712,135			
F.	Net OPEB Obligation Estimates						
	1. Net OPEB Obligation - beginning of year	\$147,879,064	\$177,540,524	\$202,591,741			
	2. Annual OPEB Cost	\$46,106,975	\$42,134,609	\$23,712,135			
	3. Total Contributions Made	\$16,445,515	\$17,083,392	\$18,302,193			
	4. Net OPEB Obligation - end of year (1)+(2)-(3)	\$177,540,524	\$202,591,741	\$208,001,683			

As displayed on Exhibit 1, the above tables present a summary of the results of our analysis. We present the 2013 and 2014 results along side of the 2015 results as required by GASB-45.

The 2.04% discount rate presented in the first table is a rate for a partially-funded plan that reflects the City's current funding level. It is based on discount rates of 2.00% for an unfunded plan and 7.04% for a fully-funded plan. We believe these are reasonable discount rates for unfunded and funded plans based on currently available yields and the investment options under the each situation. Since this table presents a discount rate that reflects the City's current funding level, we believe the 2.04% table disclosures are appropriate for the City.

We have also presented the disclosure items at 7.04%, in the second table, at the request of the City, so the City can view the impact of a higher discount rate. This table is presented for informational purposes only. We have kept the prior years' discount rates at the lower level to reflect actual funding during those years.

The data on page 6 is that required for disclosure in the City's audited financial statements per GASB-45 while the data on page 7 is presented solely to demonstrate the impact of different discount rates (funded vs. unfunded plans).

The following table shows the sources of the 26% increase in the Actuarial Accrued Liability (AAL).

<u>Item</u>	Impact on AAL
Medical Inflation (Trend) Assumption	22%
Cadillac Tax Assumption	1%
Population Change	6%
Savings From Advantage Plans	-3%
Total Change to AAL	26%

Attached to this report are exhibits showing summarized details of our calculations. We have presented exhibits only for the 2.04% calculations.

The following is an explanation of the terms used in the tables above:

Expected Post-Retirement Benefit Obligation (EPBO) – This is the present value of the future post-retirement life and health insurance benefits for all currently retired employees and active employees eligible for those benefits. For active employees, the EPBO includes the full present value of benefits even though some employees have not yet fully earned or vested in those benefits. The government needs to be aware of this liability but does not need to disclose or recognize it on any of its financial statements.

Actuarial Accrued Liability (AAL) – This is also known as the Accumulated Post-Retirement Benefit Obligation (APBO). This is that portion of the EPBO that has been accrued to date. For existing retirees and active employees who have fully earned their benefit, the AAL equals the EPBO. The AAL is the current liability that must be recognized on the government's balance sheet if the government chooses immediate recognition. Alternatively, the government can choose to amortize the current APBO.

Actuarial Value of Plan Assets – The amount of assets held in trust to fund the plan (if the plan is being funded).

Unfunded Actuarial Accrued Liability – The excess of the AAL over the plan assets.

Normal Cost – Also known as the Service Cost, this is the portion of the EPBO for active employees attributable to employee service during the year.

Amortization of Unfunded Accrued Liability – This is the annual amortization of the AAL if the Government chooses to amortize the AAL. Under GASB-45, the entity can choose to amortize the current AAL or not. GASB-45 permits amortization over a period of from 10 to 30 years. If the government chooses to amortize the AAL, the amortization cost should be booked as a current year expense. The City elected to amortize the AAL over 30 years, and we use the level dollar amortization method for this calculation. GASB allows amortization on an open,

closed or level % of payroll basis. We selected the open basis; i.e. the amortization period begins and stays at 30 years.

Annual Required Contribution (ARC) – This is the total amount that should be booked as a current year expense. The ARC is the sum of the Normal Cost (Service Cost) and Amortization of Actuarial Accrued Liability. GASB-45 recommends, but does not require, that the ARC actually be contributed (funded) each year.

Net OPEB Obligation – Beginning of Year – This is last year's End of Year Net OPEB Obligation Estimate.

Interest of Net OPEB Obligation – This is interest, at the assumed interest rate, on the Beginning of Year Net OPEB Obligation.

Adjustment to ARC – This is the Beginning of Year Net OPEB Obligation divided by the amortization factor. It is designed to approximate the amount included in the ARC for past contribution deficiencies. It is removed from the ARC so the ARC won't be overstated due to these contribution deficiencies.

Annual OPEB Cost – This is the ARC + Interest on Net OPEB Obligation - Adjustment to ARC **Expected Contributions During the Year** – This is the amount of OPEB payments the Government made for retiree OPEB during the just-completed fiscal year.

Net OPEB Obligation – End of Year Estimate – This is the Beginning of Year Net OPEB Obligation + Annual OPEB Cost - the Expected Contributions during the Year.

ANALYSIS

Assumptions

1. **Interest discount rate** – 2.00% per year, net of expenses for an unfunded plan, 7.04% for a fully funded plan and 2.04% for a partially-funded plan (actual situation). GASB-45 requires that the selection of an interest discount rate be based on the expected long term rate of return on the (General Fund) assets expected to be available to pay the benefits when due. The 2.04% rate is a blend of \$2,118,738 of funded assets invested at the full funding rate of 7.04% and the remaining amount of the 7/1/15 Net OPEB Obligation invested at 2.00% (the unfunded discount rate).

We note that a level 1% increase in assumed interest rate will decrease the City's liability by about 21%. We also note that, because the City is funding some its OPEB obligations, its EPBO is \$11,154,171 lower and its ARC is \$527,345 lower than they would have been absent any funding.

2. **Trend** – Medical Costs are assumed to increase each year according to the following schedule:

Year	Medical Trend
2015	8.39%
2016	7.81%
2017	7.23%
2018	6.66%
2019	6.08%
2020+	6.08%

The above trend rates were agreed upon with the City as representative of a conservative future trend. The 2015 trend rate reflects and is consistent with the City's actual rate increase effective July 1, 2015. The short-term (next 3 years) trend rates are actuarially selected rates to grade down to the assumed 6.08% rate in 2019 and afterwards. The 6.08% rate is a long term rate recommended by the Society of Actuaries based on industry modeling.

We note that a level decrease of 1% in the assumed trend values will decrease the City's liability by about 20%.

3. **Amortization Period** – Thirty years (open)/ 30 years is the maximum period permitted by GASB-45. GASB-45 permits amortization payments to increase at a rate not to exceed projected salary growth. We assumed level amortization payments, which we

think are more realistic for budgeting purposes. We used closed amortization in the past, but the City wanted us to switch to open amortization to facilitate its funding projections.

- 4. **Retirement Eligibility** As prescribed by the terms of the City's Retirement System.
- 5. **Marital Status** Active participants are assumed to keep their current marital status upon retirement.
- 6. **Turnover** Representative values of assumed annual turnover rates for general and uniformed employees are as follows.

	General	Uniformed
Age Group	Employees	Employees
<20	15.00%	1.50%
20-24	13.13%	1.50%
25-29	10.12%	1.50%
30-34	8.33%	1.46%
35-39	6.78%	1.22%
40-44	5.96%	0.28%
45-49	5.13%	0.03%
50-54	3.23%	0.03%
55-59	2.45%	0.00%
60-64	2.07%	0.00%
65-69	1.94%	0.00%
70-74	1.22%	0.00%
75+	0.00%	0.00%

- 7. **Mortality** Mortality assumptions are used to project the expected number of employees who will be receiving benefits each year in the future. We used the RP-2000 mortality table (combined healthy lives) with projected mortality. This is consistent with the pension valuation.
- 8. **Disability** Disability assumptions are used to project the number of people who will retire early due to disability. The possibility of disability was accounted for by assuming average retirement ages that were 1 year younger than were observed by the City (see (10) below)
- 9. **Requirements for Retirement**-The City has informed us that there is no mandatory retirement age for general employees to retire with an unreduced pension benefit. Uniformed employees still have the 65 mandatory retirement age. Early retirement is available with twenty years of service with a reduced benefit.
- 10. **Age at Retirement**-Representative assumed average retirement ages are shown below; e.g. a general employee currently age 45 is assumed to retire at age 63. These values are consistent with the requirements for retirement stated above, the input provided by the

City about average retirement ages (about 65 for General and 60 for Uniform) and the adjustment for disability retirements (see (8) and (9) above).

	General	Uniformed
<u>Age</u>	Employees	Employees
45	63	58
50	63	59
55	64	61
60	66	64
62	67	65
65	69	65
69	72	69
70	72	70

11. **Retirement Election Rates-**The City provided us data for each group showing total retirees and how many retirees have elected to continue post-retirement benefits and pay the associated premiums. That data showed that retirement election rates have been as follows.

	All Employees
Health Insurance	100%

- 12. **Plan Changes** the City informed us that two significant plan changes were implemented in 2011. These changes reduce the City's cost. The first change is that all active employees and new retirees must elect one of the (less expensive) "Advantage" plans. The second change is that many active employees must now contribute 25% or 30% instead of the previous 20%. The City noted which actives will contribute 20%, 25% or 30% when they retire in the census data they sent us.
- 13. **Expenses** We did not make an explicit assumption for expenses because our assumed interest discount rates are net of expenses.
- 14. Cadillac Tax We included a loading of 1% to account for the City's expected 2018 retired lives liability for the Cadillac tax. We note that most of the 2018 liability is associated with Legacy plans, which will disappear over time.

Methodology

We used the Projected Unit Credit actuarial cost method to perform our estimate of the OPEB liability. The following is a summary of the steps employed in our analysis.

- 1. Determine current annual subsidy for life and health insurance for the pre-Medicare retirees, Medicare retirees and retirees over age 65 not on Medicare. We used the most recently available census data, current premiums, participant contribution requirements and age-sex adjustment factors to make these calculations.
- **2.** Calculate the EPBO. This is the present value of future subsidies for life and health insurance for the actives, pre-Medicare retirees, retirees over 65 not on Medicare and Medicare retirees. Separate calculations were required for active general and active uniformed employees.
- 3. Calculate the AAL from the EPBO and the active employee age and service information from the census.
- 4. Calculate the other GASB-45 required disclosures.

FUNDING PROJECTION

The tables below present an estimate of future funding of the OPEB liability based on expected annual funding levels provided by the City.

The tables reflect the normal cost and amortization of the unfunded actuarial accrued liability calculated for the fiscal year beginning June 30, 2015, future normal costs increasing at 5.0% per year and future amortization payments at 2.04% increasing at the assumed future healthcare trend rates, along with the City's additional OPEB funding amounts. The first table is based on 30-years "open" amortization and the second table is based on 30-years "closed" amortization. The City's funding is the same under both tables, as it is not tied to the ARC (which is affected by the type of amortization) but to the sum of the "projected benefit payments" (column 2) and the "additional OPEB appropriation" (column 5).

It is important to note that the validity of either funding projection is contingent on the City's ability to make a legally-binding commitment to actually fund the substantial annual OPEB appropriations after 2029 as shown on the funding tables.I

CITY OF NEWTON GASB 45 Valuation

FUNDING PROJECTION (Schedule of Funding of the Actuarial Accrued Liability) 30 Years Open (2.04% discount rate increasing after 2029 as funding increases)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Fiscal Year	Projected				Additional		AAL	UAAL at
	Ended	Benefit	Normal	Amortization	ARC	OPEB	Assets at	at End of	End of Year
Year	June 30	Payments	Cost	of UAAL	(3) + (2)	Appropriation	End of Year	Year	(7) - (6)
							\$1,119,811		
1	2015	\$17.361.119	\$23.974.728	\$30.865.329	\$54,840,057	\$941.074	\$2,118,738	\$703,630,477	\$701,511,739
2	2016	\$17,301,119	\$25,974,728	\$33,454,819	\$58.628.283	\$1.400.000	\$3.716.339	\$762.662.523	\$758.946.184
3	2017	\$20,287,634	\$26,432,138	\$36,068,212	\$62,500,350	\$1,650,000	\$5,685,062	\$822,239,507	\$816,554,445
4	2018	\$21,755,198	\$27,753,745	\$38.677.308	\$66,431,052	\$1,900,000	\$8,051,033	\$881,718,524	\$873,667,491
5	2019	\$23,203,192	\$29,141,432	\$41,251,613	\$70,393,045	\$2,150,000	\$10,842,218	\$940,404,430	\$929,562,212
6	2020	\$24,613,465	\$30,598,503	\$43,758,857	\$74,357,360	\$2,400,000	\$14,088,554	\$997,561,529	\$983,472,976
7	2021	\$26,109,454	\$32,128,429	\$46,418,488	\$78,546,917	\$2,650,000	\$17,822,081	\$1,058,192,596	\$1,040,370,514
8	2022	\$27,696,368	\$33,734,850	\$49,239,770	\$82,974,620	\$2,900,000	\$22,077,100	\$1,122,508,774	\$1,100,431,674
9	2023	\$29,379,733	\$35,421,592	\$52,232,528	\$87,654,120	\$3,150,000	\$26,890,322	\$1,190,734,044	\$1,163,843,722
10	2024	\$31,165,412	\$37,192,672	\$55,407,183	\$92,599,855	\$3,400,000	\$32,301,045	\$1,263,105,996	\$1,230,804,950
11	2025	\$33,059,623	\$39,052,306	\$58,774,791	\$97,827,097	\$3,650,000	\$38,351,334	\$1,339,876,662	\$1,301,525,328
12	2026	\$35,068,963	\$41,004,921	\$62,347,080	\$103,352,001	\$3,900,000	\$45,086,213	\$1,421,313,394	\$1,376,227,180
13	2027	\$37,200,429	\$43,055,167	\$66,136,491	\$109,191,658	\$4,150,000	\$52,553,878	\$1,507,699,791	\$1,455,145,913
14	2028	\$39,461,444	\$45,207,925	\$70,156,219	\$115,364,144	\$4,400,000	\$60,805,918	\$1,599,336,691	\$1,538,530,774
15	2029	\$41,859,882	\$47,468,322	\$74,420,263	\$121,888,584	\$4,650,000	\$69,897,551	\$1,696,543,216	\$1,626,645,665
16	2030	\$44,404,095	\$49,841,738	\$67,014,768	\$116,856,505	\$59,442,504	\$136,317,634	\$1,580,808,148	\$1,444,490,514
17	2031	\$47,102,944	\$52,333,825	\$66,760,692	\$119,094,517	\$59,442,504	\$207,413,692	\$1,576,905,301	\$1,369,491,609
18	2032	\$49,965,827	\$54,950,516	\$63,317,298	\$118,267,814	\$59,442,504	\$283,514,912	\$1,515,273,457	\$1,231,758,545
19	2033	\$53,002,713	\$57,698,042	\$58,876,135	\$116,574,177	\$59,442,504	\$364,973,658	\$1,447,141,316	\$1,082,167,658
20	2034	\$56,224,180	\$60,582,944	\$53,309,425	\$113,892,369	\$59,442,504	\$452,167,100	\$1,373,663,447	\$921,496,347
21	2035	\$59,641,445	\$63,612,091	\$45,942,790	\$109,554,881	\$59,442,504	\$545,498,960	\$1,288,120,117	\$742,621,157
22	2036	\$63,266,408	\$66,792,695	\$37,326,636	\$104,119,332	\$59,442,504	\$645,401,383	\$1,205,216,006	\$559,814,623
23	2037	\$67,111,695	\$70,132,330	\$26,456,338	\$96,588,668	\$59,442,504	\$752,336,937	\$1,116,651,993	\$364,315,057
24	2038	\$71,190,695	\$73,638,947	\$17,160,599	\$90,799,545	\$59,442,504	\$866,800,753	\$1,093,825,851	\$227,025,098
25	2039	\$75,517,614	\$77,320,894	\$12,924,582	\$90,245,476	\$59,442,504	\$989,322,822	\$1,160,307,793	\$170,984,971
26	2040	\$80,107,520	\$81,186,939	\$8,342,002	\$89,528,941	\$59,442,504	\$1,120,470,445	\$1,230,830,459	\$110,360,014
27	2041	\$84,976,397	\$85,246,286	\$3,385,524	\$88,631,809	\$59,442,504	\$1,260,850,861	\$1,305,639,442	\$44,788,581
28	2042	\$90,141,200	\$89,508,600	\$0	\$89,508,600	\$59,442,504	\$1,411,114,058	\$1,384,995,261	(\$26,118,797)
29	2043	\$95,619,917	\$93,984,030	\$0	\$93,984,030	\$0	\$1,510,456,487	\$1,469,174,268	(\$41,282,219)
30	2044	\$101,431,626	\$98,683,231	\$0	\$98,683,231	\$0	\$1,616,792,624	\$1,558,469,615	(\$58,323,009)

Benefit payments calculated to increase with assumed trend

Normal costs projected to increase by 5% per year

For 2015-2029 AAL and amortization payments based on assumed future discount rate of 2.04%.

After 2029, AAL and amortization payments based on assumed future discount rates that depend on the total funded portion of the Net OPEB Obligation (up to 7.04% for full funding). Assets assumed to earn 7.04% per year with deposits in the middle of the year.

Additional OPEB Appropriation assumed to be \$1,400,000 in 2016, then an additional \$250,000 every year until 2029 and then \$59,442,504 per year diverted from the pension fund.

For higher discount rates to be used after 2029, there must be a binding commitment by the City to actually make the substantial post-2029 appropriations.

CITY OF NEWTON GASB 45 Valuation

FUNDING PROJECTION (Schedule of Funding of the Actuarial Accrued Liability) 30 Years Closed (2.04% discount rate increasing after 2029 as funding increases)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Fiscal Year	Projected				Additional		AAL	UAAL at
	Ended	Benefit	Normal	Amortization	ARC	OPEB	Assets at	at End of	End of Year
Year	June 30	Payments	Cost	of UAAL	(3) + (2)	Appropriation	End of Year	Year	(7) - (6)
							\$1,119,811		
1	2015	\$17,361,119	\$23,974,728	\$37,747,873	\$61,722,601	\$941,074	\$2,118,738	\$703,630,477	\$701,511,739
2	2016	\$18,817,654	\$25,173,464	\$42,297,959	\$67,471,423	\$1,400,000	\$3,716,339	\$762,662,523	\$758,946,184
3	2017	\$20,287,634	\$26,432,138	\$47,231,102	\$73,663,239	\$1,650,000	\$5,685,062	\$822,239,507	\$816,554,445
4	2018	\$21,755,198	\$27,753,745	\$52,564,785	\$80,318,530	\$1,900,000	\$8,051,033	\$881,718,524	\$873,667,491
5	2019	\$23,203,192	\$29,141,432	\$58,318,376	\$87,459,808	\$2,150,000	\$10,842,218	\$940,404,430	\$929,562,212
6	2020	\$24,613,465	\$30,598,503	\$64,514,551	\$95,113,055	\$2,400,000	\$14,088,554	\$997,561,529	\$983,472,976
7	2021	\$26,109,454	\$32,128,429	\$71,577,974	\$103,706,403	\$2,650,000	\$17,822,081	\$1,058,192,596	\$1,040,370,514
8	2022	\$27,696,368	\$33,734,850	\$79,678,519	\$113,413,368	\$2,900,000	\$22,077,100	\$1,122,508,774	\$1,100,431,674
9	2023	\$29,379,733	\$35,421,592	\$89,031,715	\$124,453,307	\$3,150,000	\$26,890,322	\$1,190,734,044	\$1,163,843,722
10	2024	\$31,165,412	\$37,192,672	\$99,915,074	\$137,107,746	\$3,400,000	\$32,301,045	\$1,263,105,996	\$1,230,804,950
11	2025	\$33,059,623	\$39,052,306	\$112,691,944	\$151,744,249	\$3,650,000	\$38,351,334	\$1,339,876,662	\$1,301,525,328
12	2026	\$35,068,963	\$41,004,921	\$127,847,300	\$168,852,220	\$3,900,000	\$45,086,213	\$1,421,313,394	\$1,376,227,180
13	2027	\$37,200,429	\$43,055,167	\$146,043,049	\$189,098,216	\$4,150,000	\$52,553,878	\$1,507,699,791	\$1,455,145,913
14	2028	\$39,461,444	\$45,207,925	\$168,206,532	\$213,414,457	\$4,400,000	\$60,805,918	\$1,599,336,691	\$1,538,530,774
15	2029	\$41,859,882	\$47,468,322	\$195,678,011	\$243,146,333	\$4,650,000	\$69,897,551	\$1,696,543,216	\$1,626,645,665
16	2030	\$44,404,095	\$49,841,738	\$193,578,203	\$243,419,940	\$59,442,504	\$136,317,634	\$1,580,808,148	\$1,444,490,514
17	2031	\$47,102,944	\$52,333,825	\$210,193,163	\$262,526,987	\$59,442,504	\$207,413,692	\$1,576,905,301	\$1,369,491,609
18	2032	\$49,965,827	\$54,950,516	\$220,055,360	\$275,005,876	\$59,442,504	\$283,514,912	\$1,515,273,457	\$1,231,758,545
19	2033	\$53,002,713	\$57,698,042	\$230,751,055	\$288,449,097	\$59,442,504	\$364,973,658	\$1,447,141,316	\$1,082,167,658
20	2034	\$56,224,180	\$60,582,944	\$243,420,214	\$304,003,158	\$59,442,504	\$452,167,100	\$1,373,663,447	\$921,496,347
21	2035	\$59,641,445	\$63,612,091	\$258,155,707	\$321,767,798	\$59,442,504	\$545,498,960	\$1,288,120,117	\$742,621,157
22	2036	\$63,266,408	\$66,792,695	\$286,704,622	\$353,497,318	\$59,442,504	\$645,401,383	\$1,205,216,006	\$559,814,623
23	2037	\$67,111,695	\$70,132,330	\$364,315,057	\$434,447,387	\$59,442,504	\$752,336,937	\$1,116,651,993	\$364,315,057
24	2038	\$71,190,695	\$73,638,947	\$227,025,098	\$300,664,045	\$59,442,504	\$866,800,753	\$1,093,825,851	\$227,025,098
25	2039	\$75,517,614	\$77,320,894	\$170,984,971	\$248,305,865	\$59,442,504	\$989,322,822	\$1,160,307,793	\$170,984,971
26	2040	\$80,107,520	\$81,186,939	\$110,360,014	\$191,546,953	\$59,442,504	\$1,120,470,445	\$1,230,830,459	\$110,360,014
27	2041	\$84,976,397	\$85,246,286	\$44,788,581	\$130,034,867	\$59,442,504	\$1,260,850,861	\$1,305,639,442	\$44,788,581
28	2042	\$90,141,200	\$89,508,600	\$0	\$89,508,600	\$59,442,504	\$1,411,114,058	\$1,384,995,261	(\$26,118,797)
29	2043	\$95,619,917	\$93,984,030	\$0	\$93,984,030	\$0	\$1,510,456,487	\$1,469,174,268	(\$41,282,219)
30	2044	\$101,431,626	\$98,683,231	\$0	\$98,683,231	\$0	\$1,616,792,624	\$1,558,469,615	(\$58,323,009)

Benefit payments calculated to increase with assumed trend

Normal costs projected to increase by 5% per year

For 2015-2029 AAL and amortization payments based on assumed future discount rate of 2.04%.

After 2029, AAL and amortization payments based on assumed future discount rates that depend on the total funded portion of the Net OPEB Obligation (up to 7.04% for full funding). Assets assumed to earn 7.04% per year with deposits in the middle of the year.

Additional OPEB Appropriation assumed to be \$1,400,000 in 2016, then an additional \$250,000 every year until 2029 and then \$59,442,504 per year diverted from the pension fund.

For higher discount rates to be used after 2029, there must be a binding commitment by the City to actually make the substantial post-2029 appropriations.

REQUIRED DISCLOSURES-SUMMARY 2.04% Discount Rate

		<u>Active</u>	Retired	<u>Total</u>
A.	Expected Post-Retirement Benefit Obligation	\$693,388,195	\$419,209,310	\$1,112,597,505
В.	Actuarial Accrued Liability (AAL)	\$284,421,167	\$419,209,310	\$703,630,477
C.	Plan Assets			\$2,118,738
D.	Unfunded Actuarial Accrued Liability			\$701,511,739
E.	Service Cost (Normal Cost)	\$23,974,728	\$0	\$23,974,728
F.	Amortization of unfunded accrued liability			\$30,865,329
G.	Annual Required Contribution (ARC)			\$54,840,057
Н.	Unamortized Portion of AAL			\$672,765,148
l.	Expected Benefit (Premium) Payments	n/a	\$17,361,119	\$17,361,119

A-B. Exhibit 2

C. Since plan is not funded, current assets = 0.

D. B-C

E-H. Exhibit 2

I. These are the City's share of the annual retiree life and health insurance premiums (from July 22, 2015 information)

REQUIRED DISCLOSURES-DETAIL 2.04% Discount Rate

			Active Employee	S		Retirees		<u>Total</u>
		General (1)	<u>Uniformed</u> (2)	<u>Total</u> (3)=(1)+(2)	Pre- <u>Medicare</u> (4)	Age 65+ Not on MC (5)	Medicare (6)	<u>Total</u> (7)=(3)+(4)+(5)+(6)
A.	Number of Members Generating a Liability (Medical)	2,162	296	2,458	353	189	2,221	5,221
B.	Expected Post Retirement Benefit Obligation Medical/Rx/Vision Dental Life Total	\$487,850,993 \$0 \$1,868,527 \$489,719,519	\$202,891,577 \$0 \$777,099 \$203,668,676	\$690,742,570 \$0 \$2,645,625 \$693,388,195	\$130,179,329 \$0 \$498,602 \$130,677,931	\$113,393,359 Incl in PMR \$434,310 \$113,827,669	\$174,037,127 Incl in PMR \$666,583 \$174,703,710	\$1,108,352,385 \$0 \$4,245,120 \$1,112,597,505
C.	Actuarial Accrued Liability	\$203,289,641	\$81,131,526	\$284,421,167	\$130,677,931	\$113,827,669	\$174,703,710	\$703,630,477
D.	Service Cost (Normal Cost)	\$17,581,940	\$6,392,788	\$23,974,728	\$0	\$0	\$0	\$23,974,728
E.	Plan Assets as of 7/1/15							\$2,118,736
F.	Unfunded Actuarial Accrued Liability							\$701,511,741
G.	Amortization Factor							22.73
Н.	Amortization of Actuarial Accrued Liability							\$30,865,329
I.	Annual Required Contribution							\$54,840,057
J.	Unamortized Portion of Actuarial Accrued Liability							\$672,765,148

A. Exhibit 9

B. Exhibit 4. Dental EPBO = \$0 because there is only 1 retiree dental plan and retirees pay the full cost. Life EPBO = ratio of Life premium to Medical premium x Medical EPBO

C. For retired lives AAL = EPBO. For active lives AAL = EPBO x C from Exhibit 3

D. For retired lives Service Cost = 0. For active lives Service Cost = EPBO X D from Exhibit 3

E. From the City of Newton

F. C-E

G. Present value at 2.04% of a 30-year annuity due (open amortization)

H. F/G

J. C-H

ACTIVE EMPLOYEE ACCRUED BENEFITS 2.04% Discount Rate

		Active Employees		
		General (1)	<u>Uniform</u> (2)	
Δ	A. Average Projected Service at Retirement = Attribution Period	28.0	31.1	
Е	B. Weighted Average Service to Date	11.6	12.4	
C	C. Weighted Average Percent of Retirement Benefits Accrued to Date	41.5%	39.8%	
	D. Percent of OPEB Accrued in Fiscal Year	3.6%	3.1%	

A. Calculated from the census data

B. Calculated from the census data

C. B/A

D. Calculated from the census data

EXPECTED POST-RETIREMENT BENEFIT OBLIGATION - MEDICAL/Rx 2.04% Discount Rate

		Active Employees (1) (2)		Retirees (5)			Total (6)
		<u>General</u>	<u>Uniformed</u>	Pre- <u>Medicare</u>	Age 65+ Not on MC	<u>Medicare</u>	
A.	Number of Contracts	2,162	296	353	189	2,221	5,221
В.	Annual Subsidy per Contract	n/a	n/a	\$18,786	\$27,475	\$4,763	
C.	PV of Future Subsidies for All Employees	\$492,874,409	\$204,980,758	\$131,519,790	\$112,691,196	\$177,587,484	\$1,119,653,637
D.	Percent Expected to Elect Medical at Retirement	100%	100%	100%	100%	100%	100%
E.	Expenses	0%	0%	0%	0%	0%	0%
F.	Adjustment to Account for Survivor Benefits	101%	101%	101%	101%	101%	101%
G.	PV of Medicare Part B Late Enrollment Penalties				\$735,294		\$735,294
Н.	Liability for "Cadillac tax"				1.00%		1.00%
I.	Interest Adjustment	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
J.	Expected Post-Retirement Benefit Obligation	\$487,850,993	\$202,891,577	\$130,179,329	\$113,393,359	\$174,037,127	\$1,108,352,385
K.	EPBO per Contract	\$225,648	\$685,445	\$368,780	\$599,965	\$78,360	\$212,287

- A. Exhibit 9
- B. Exhibit 5
- C. Calculated from B and the age and sex of each contractholder.
- D. Calculation only considered participants who actually elected medical.
- E. Expenses are 0% because the assumed interest rate is net of expenses.
- F. Survivors can continue coverage and pay the same % their deceased spouse paid.

 Also, retirees and survivors can resume coverage any time even if they decline it initially.
- G. Assumes an annual cost of \$15,000 per year.
- H. We estimate the Cadillac tax liability at 1.00%. For calculation purposes, we put it all into Column 4.
- I. This is interest discount from the "data date" back to 7/1/14, the calculation date. Data was as of 7/1/15.
- J. $C \times D \times (1+E) \times F \times H + G$
- K. I/C

CURRENT ANNUAL SUBSIDY - MEDICAL/Rx

		Current Actives During Pre-Med Retirement (1)	Current Actives During Med Retirement (2)	Current Pre-Med. <u>Retirees</u> (3)	Retirees >65 Not on <u>Medicare</u> (4)	Current Medicare Retirees 65+ (5)
A.	Average Annual Premium per Contract excluding Med Part B	\$13,711	\$4,797	\$14,451	\$11,843	\$4,797
В.	Actual Annual Cost per Contract excluding Med Part B	\$20,566	\$4,797	\$21,676	\$29,844	\$4,797
C.	Flat Annual City Contribution Toward the Medicare Part B Premium	n/a	\$925.44	n/a	\$0	\$925.44
D.	Blended Annual ASO/Stop Loss Premium paid by the City	\$0	\$0	\$0	\$0	\$0
E.	Total Actual Annual City Cost per Contract	\$20,566	\$5,722	\$21,676	\$29,844	\$5,722
F.	Annual Member Contributions per Contract	\$2,998	\$1,049	\$2,890	\$2,369	\$959
G.	Current Annual Subsidy per Contract	\$17,569	\$4,673	\$18,786	\$27,475	\$4,763

A. Exhibit 6

B. For PMR, equal to A times an age-sex factor to account for the "implicit subsidy". This factor is For retirees > 65 not on Medicare, equal to an age-sex factor to account for no Medicare. This is

150.00% 252.00%

- C. The City reimburses its retirees and their spouses \$925.44 a year for the Medicare Part B premium. This is a flat amount that does not increase when the Medicare Part B premium increases. Previously the City reimbursed 80% of the then-current Medicare Part B premium.
- D. Since the City's insurance contracts are fully insured, the stop loss costs are included in the premium rates.
- E. B+C+D
- F. Exhibit 6
- G. E-F

MEMBER CONTRIBUTIONS

	Medical/Rx	Life Insurance				
Current Pre-Medicare Retirees - < 65						
Average Monthly Premium per Contract	\$ 1,204.22	\$ 9.45				
Average Annual Premium per Contract	\$14,450.69	\$113.40				
Percent Paid By Members	20.00%	50.00%				
Current Annual Amount Members Pay	\$2,890.14	\$56.70				
Current Actives During Pre-Medicare Retirement						
Average Monthly Premium per Contract	\$ 1,142.56	\$9.45				
Average Annual Premium per Contract	\$13,710.78	\$113.40				
Average % Paid by Members	21.86%	50.00%				
Current Annual Amount Members Pay	\$2,997.51	\$56.70				
Retirees >65 Not on Medicare						
Average Monthly Premium per Contract	\$ 986.90	\$9.45				
Average Annual Premium per Contract	\$11,842.74	\$113.40				
Percent Paid By Members	20.00%	50.00%				
Current Annual Amount Members Pay	\$2,368.55	\$56.70				
Current Medicare Retirees						
Average Monthly Premium per Contract	\$ 399.72	\$9.45				
Average Annual Premium per Contract	\$4,796.61	\$113.40				
Percent Paid By Members	20.00%	50.00%				
Current Annual Amount Members Pay	\$959.32	\$56.70				
Current Actives During Medicare Retirement						
Average Monthly Premium per Contract	\$ 399.72	\$9.45				
Average Annual Premium per Contract	\$4,796.61	\$113.40				
Percent Paid By Members	21.86%	50.00%				
Current Annual Amount Members Pay	\$1,048.66	\$56.70				
Current Annual Amount Members Pay	\$1,048.66	\$56.70				

FINANCIAL RISK ANALYSTS

Monthly costs calculated from census and premium rates.

Percent paid by members from Exhibit 7

Our calculations consider the savings to the City from requiring post 8/31/11 hires to pay more.

Many more pre-Medicare retirees are now electing Advanrage contracts.

FUNDING INFORMATION

Actives

Medical Pre-8/31/11 hires pay 20% of blended cost of actives and retirees not on Medicare.

Employees hired on or after 8/31/11 currently pay between 25 or 30% of the cost

They will also pay this amount when they retire.

Harvard Pilgrim, Tufts EPO, Tufts POS and Tufts MCP are self insured

Both the Legacy Plans and Advantage plans are self insured.

Drugs Included with Medical

Dental Actives pay <100% of the cost of the coverage.

Life Insurance Fully insured.

Current 100% monthly premium rate is \$9.45 per month for \$5,000 of coverage.

Members pay 50% of the total premium - so they pay \$4.72 per month.

Retirees Not on Medicare

Medical Retirees hired before 8/31/11 and their spouses pay 20% of blended cost of actives and retirees not on Medicare.

Retirees hired on or after 8/31/11 will pay >20% (depending on their bargaining unit).

The City notes that - so far - no one hired after 8/31/11 has retired.

Drugs Same as for Actives

Dental For the only plan available, retirees have to pay 100% of the cost of the coverage.

Life Insurance Retirees pay 50% of the total premium - so they pay \$4.72 per month.

Retirees on Medicare

Medical Plans designed for these participants are fully insured. When eligible for Medicare,

retiree is transferred to a Medicare Supplement plan. Tufts Medicare Complement plan is self insured.

Tufts Medicare Preferred and Medicare HMO Blue are fully insured.

Pre-8/31/11 retirees and their spouses pay 20% of the cost.

Retirees hired on or after 8/31/11 will pay 20% or >20% (depending on their bargaining unit).

The City notes that - so far - no one hired after 8/31/11 has retired.

Drugs and Vision Since plan is fully insured, stop loss coverage is included in the insurance rates. Post - 8/31/11 retirees will pay more.

Drugs Same as for Actives

Dental For the only plan available, retirees have to pay 100% of the cost of the coverage.

Life Insurance Retirees pay 50% of the total premium - so they pay \$4.72 per month.

BENEFIT INFORMATION

Actives

Medical Choice of Harvard Pilgrim, Tufts EPO and Tufts POS Advantage plans. These plans are new effective 12/1/11.

Rates depend on choice of coverage

The City only offers Individual and Family plans.

Drugs and Vision Included if Medical Elected (Drug Copays per Medical Plan Elected Apply)

Dental Several plans are available.

Life Insurance All life insurance benefits are a flat \$5,000 with no reduction at retirement.

Retirees Not on Medicare

Medical Same Choices as for Actives plus Harvard Pilgrim, Tufts EPO and Tufts POS "Legacy" plans are available for those who retired before 8/31/11.

Those who retired after 8/31/11 can only chose among the Harvard Pilgrim, Tufts EPO and Tufts POS Advantage plans.

Survivors from family contracts can continue coverage until they die. They may also re-enter the plan after initially declining coverage.

Drugs and Vision Same Choices as for Actives

Dental Only 1 plan is available. It is not subsidized by the City, so the City has no GASB-45 liability for dental benefits.

Life Insurance Flat \$5,000

Retirees on Medicare

Medical Most participants have elected the Tufts Medicare Complement Plan (Medicare Supplement).

A minority have elected Tufts Medicare Preferred and a smaller minority have elected Medicare HMO Blue.

The City reimburses a flat \$925.44 per year toward the cost of the Medicare Part B premium for retirees and their spouses.

This flat amount does not increase when the Medicare Part B premium increases.

Surviving spouses can continue coverage on the same terms as the deceased retiree, per Massachusetts law.

They may also re-enter the plan after initially declining coverage.

The City has adopted Section 18 of MGL Chapter 32B. Effective July 1, 2010, the City is responsible to reimburse 100% of the penalties paid by retirees for enrolling late in Medicare B. The City estimates that this will cost \$15,000 per year.

Drugs and Vision Same Choices as for Actives

Drug Plan Not Eliminated When Medicare Part D Took Effect

Dental Only 1 plan is available. It is not subsidized by the City, so the City has no GASB-45 liability for dental benefits.

Life Insurance Flat \$5,000

Data provided by the City of Newton

CENSUS INFORMATION

	0	l lo if a cons a sl	Elected No	Takal	
	<u>General</u> (1)	<u>Uniformed</u> (2)	<u>Coverage</u> (3)	<u>Total</u> (4)	
Actives - Medical	(1)	(2)	(3)	(4)	
Number of Contracts	2.162	296	134	2,592	
Average Age	45	44		45	
Average Service Years	10	16			
Dro Modicara Batiraga Madical/Index 65					
Pre-Medicare Retirees - Medical/Under 65 Number of Contracts	353	Incl in Gen	Incl Above	353	
Average Age	60	morm den	IIICI Above	333	
, we age rige					
Retirees > 65 Not on Medicare					
Number of Contracts	189	Incl in Gen	Incl Above	189	
Average Age	74				
Medicare Retirees - Medical					
Number of Contracts	2,221	Incl in Gen	Incl Above	2,221	
Average Age	77			,	
<u>Life Insurance</u>	4 000	1. 1: 0.	4.504	0.500	
Number of Contracts - Actives Number of Contracts - Retirees	1,068 1,110	Incl in Gen Incl in Gen	1,524 not avail	2,592	
Number Electing Life Insurance - Total	2,178	Incl in Gen	not avail		
Trumber Electing Elic modifice Total	2,170	morm cen	not avair		
Percent of New Retirees Electing Medical					
Percent Under-65 Retirees Keeping Medical at Age 65					

Data provided by the City of Newton

The City has noted that the declination rate for retiree medical insurance is negligible.