

**Town of Essex Other
Postemployment Benefits Plan**

GASB 45 Actuarial Valuation

as of

July 1, 2013

For the fiscal years ending

June 30, 2014

June 30, 2015

June 30, 2016

Delivered October 2013

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LETTER

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October 21, 2013

Personal and Confidential

Ms. Roxanne Tieri
Town Accountant
Town of Essex
30 Martin Street
Essex, MA 01929

Dear Ms. Tieri:

We have performed an actuarial valuation of the Town of Essex Other Postemployment Benefits Plan for the fiscal year ending June 30, 2014. The figures presented in this report reflect the adoption, by the Town of Essex, of Statement No. 45 of the Governmental Accounting Standards Board ("GASB 45") effective July 1, 2007.

The financial results of the actuarial valuation are summarized in the report. The Executive Summaries highlight the results of the valuation. Additional information summarizing census data, actuarial assumptions, claim rates and the methodology for developing them, as well as a glossary of selected terms used in this study, is also included in the report.

All costs, liabilities and other factors under the plan were determined in accordance with generally accepted actuarial principles and procedures. In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the plan and reasonable expectations and, in combination, represent our best estimate of the anticipated experience under the plan.

We refer you to Section I of this report for a detailed summary and commentary on the results of the valuation and a comparison with the prior valuation. Section II is a summary of the plan provisions, and Section III describes the actuarial cost method and assumptions. Details for cost calculations, supporting data, and disclosures are provided in Exhibits A through C.

We will be pleased to answer any questions that you may have regarding this actuarial valuation report.

Very truly yours,

Parker E. Elmore, A.S.A., E.A., M.A.A.A.
President & CEO

Enclosure

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

Town of Essex

Assuming Pay-as-you-go funding - 4.00% discount rate

Comparison of Plan Liabilities to Prior Valuation

	<u>July 1, 2013</u>	<u>July 1, 2010</u>
I. Present Value of Future Benefits		
A. Actives	3,877,476	3,232,975
B. Retirees/Disabled	<u>1,205,617</u>	<u>1,805,252</u>
C. Total	5,083,093	5,038,227
II. Present Value of Future Normal Cost	1,987,639	1,524,568
III. Actuarial Accrued Liability (Projected Unit Credit)		
A. Actives	1,889,837	1,708,407
B. Retirees/Disabled	<u>1,205,617</u>	<u>1,805,252</u>
C. Total	3,095,454	3,513,659
IV. Plan Assets	15,610	0
V. Unfunded Actuarial Accrued Liability ("UAAL")	3,079,844	3,513,659
VI. Funded Ratio	0.50%	0.00%
VII. Annual Covered Payroll	N/A	N/A
VIII. UAAL as % of Covered Payroll	N/A	N/A
IX. Net OPEB Obligation	842,409	278,990
X. Number of Covered Participants		
A. Actives	32	28
B. Retirees/Disabled	<u>22</u>	<u>25</u>
C. Total	54	53
For the Fiscal Year Ending:	<u>June 30, 2014</u>	<u>June 30, 2011</u>
XI. Normal Cost	156,517	126,083
XII. Amortization of UAAL - 30 year flat dollar	200,325	200,325
XIII. Annual Required Contribution ("ARC") [XI. + XII.]	356,842	326,408
XIV. Interest on Net OPEB Obligation	33,698	30,771
XV. Adjustment to Annual Required Contribution	(46,844)	(45,300)
XVI. Amortization of Actuarial (Gains) / Losses	(5,377)	0
XVII. Annual OPEB Cost [XIII. + XIV. + XV. + XVI.]	338,319	311,879
XVIII. Expected Employer Contribution	114,223	111,029
XIX. Percentage of Annual OPEB Cost Contributed	33.8%	35.6%
XX. Net OPEB Obligation at Beginning of Year (IX.)	842,409	278,990
XXI. Increase in Net OPEB Obligations (XVII. - XVIII.)	224,096	200,850
XXII. Net OPEB Obligation at End of Year (XX. + XXI.)	1,066,505	479,840
XXIII. Discount Rate	4.00%	4.00%

SECTION I
PRINCIPAL RESULTS OF THE VALUATION
(continued)

Town of Essex
Assuming Pay-as-you-go funding - 4.00% discount rate
Plan Liabilities as of July 1, 2013

	<u>Medical</u>	<u>Dental</u>	<u>Life</u>	<u>Total</u>
I. Present Value of Future Benefits				
A. Actives	3,871,685	0	5,791	3,877,476
B. Retirees/Disabled	1,195,567	0	10,050	1,205,617
C. Total	5,067,252	0	15,841	5,083,093
II. Present Value of Future Normal Cost	1,985,250	0	2,389	1,987,639
III. Actuarial Accrued Liability (Projected Unit Credit)				
A. Actives	1,886,435	0	3,402	1,889,837
B. Retirees/Disabled	1,195,567	0	10,050	1,205,617
C. Total	3,082,002	0	13,452	3,095,454
IV. Plan Assets	15,568	0	42	15,610
V. Unfunded Actuarial Accrued Liability ("UAAL")	3,066,434	0	13,410	3,079,844
VI. Annual Covered Payroll	N/A	N/A	N/A	N/A
VII. UAAL as % of Covered Payroll	N/A	N/A	N/A	N/A
VIII. Net OPEB Obligation	838,748	0	3,661	842,409
IX. Number of Covered Participants				
A. Actives	32	6	32	
B. Retirees/Disabled	22	0	15	
C. Total	54	6	47	

For Fiscal Year Ending June 30, 2014

X. Normal Cost	156,250	0	267	156,517
XI. Amortization of UAAL - 30 year flat dollar	199,454	0	871	200,325
XII. Annual Required Contribution ('ARC') [X. + XI.]	355,704	0	1,138	356,842
XIII. Interest on Net OPEB Obligation	33,552	0	146	33,698
XIV. Adjustment to Annual Required Contribution	(46,640)	0	(204)	(46,844)
XV. Amortization of Actuarial (Gains) / Losses	(5,354)	0	(23)	(5,377)
XVI. Annual OPEB Cost [XII. + XIII. + XIV. + XV.]	337,262	0	1,057	338,319
XVII. Expected Employer Contribution	98,378	0	845	99,223
XVIII. Contribution to Trust Fund over 30 Years	14,935	0	65	15,000
XIX. Total Employer Contribution	113,313	0	910	114,223
XX. Percentage of Annual OPEB Cost Contributed	33.6%	0.0%	86.1%	33.8%
XXI. Net OPEB Obligation at Beginning of Year (VIII.)	838,748	0	3,661	842,409
XXII. Increase in Net OPEB Obligations (XVI. - XVII.)	223,949	0	147	224,096
XXIII. Net OPEB Obligation at End of Year (XXI. + XXII.)	1,062,697	0	3,808	1,066,505

SECTION I
PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Essex

Plan Liabilities as of July 1, 2013

Assuming maintain pay-as-you-go funding method

	General Government Employees and Retirees	School Employees and Retirees	Police Employees and Retirees	Culture & Recreation Employees and Retirees	Health & Human Services Employees and Retirees	Sewer Employees and Retirees	Water Employees and Retirees	Government Activities	Business-Type Activities	Total
I. Present Value of Future Benefits										
A. Actives	445,477	0	1,834,445	69,430	165,307	1,013,159	349,658	2,514,659	1,362,817	3,877,476
B. Retirees/Disabled	<u>21,526</u>	<u>276,734</u>	<u>258,505</u>	<u>51,512</u>	<u>0</u>	<u>383,869</u>	<u>213,471</u>	<u>608,277</u>	<u>597,340</u>	<u>1,205,617</u>
C. Total	467,003	276,734	2,092,950	120,942	165,307	1,397,028	563,129	3,122,936	1,960,157	5,083,093
II. Present Value of Future Normal Cost	208,373	0	1,001,798	35,117	56,315	519,621	166,415	1,301,603	686,036	1,987,639
III. Actuarial Accrued Liability (Projected Unit Credit)										
A. Actives	237,104	0	832,647	34,313	108,992	493,538	183,243	1,213,056	676,781	1,889,837
B. Retirees/Disabled	<u>21,526</u>	<u>276,734</u>	<u>258,505</u>	<u>51,512</u>	<u>0</u>	<u>383,869</u>	<u>213,471</u>	<u>608,277</u>	<u>597,340</u>	<u>1,205,617</u>
C. Total	258,630	276,734	1,091,152	85,825	108,992	877,407	396,714	1,821,333	1,274,121	3,095,454
IV. Plan Assets	1,302	1,396	5,503	433	550	4,425	2,001	9,184	6,426	15,610
V. Unfunded Actuarial Accrued Liability ("UAAL")	257,328	275,338	1,085,649	85,392	108,442	872,982	394,713	1,812,149	1,267,695	3,079,844
VI. Annual Covered Payroll	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	N/A
VII. UAAL as % of Covered Payroll	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0%	0.0%	N/A
VIII. Net OPEB Obligation	96,714	101,882	403,720	31,769	40,325	54,215	113,784	674,410	167,999	842,409
IX. Number of Covered Participants										
A. Actives	6	0	11	1	2	8	4	20	12	32
B. Retirees/Disabled	<u>1</u>	<u>10</u>	<u>5</u>	<u>1</u>	<u>0</u>	<u>3</u>	<u>2</u>	<u>17</u>	<u>5</u>	<u>22</u>
C. Total	7	10	16	2	2	11	6	37	17	54
For Fiscal Year Ending June 30, 2014										
X. Normal Cost	22,145	0	64,712	5,147	10,018	34,780	19,715	102,022	54,495	156,517
XI. Amortization of UAAL - 30 year flat dollar	(111,851)	30,313	120,119	9,452	11,998	96,613	43,681	60,031	140,294	200,325
XII. Annual Required Contribution ("ARC") [X. + XI.]	(89,706)	30,313	184,831	14,599	22,016	131,393	63,396	162,053	194,789	356,842
XIII. Interest on Net OPEB Obligation	3,869	4,076	16,149	1,271	1,613	2,168	4,552	26,978	6,720	33,698
XIV. Adjustment to Annual Required Contribution	(5,378)	(5,665)	(22,449)	(1,767)	(2,243)	(3,015)	(6,327)	(37,502)	(9,342)	(46,844)
XV. Amortization of Actuarial (Gains) / Losses	(449)	(481)	(1,895)	(149)	(190)	(1,524)	(689)	(3,164)	(2,213)	(5,377)
XVI. Annual OPEB Cost [XII. + XIII. + XIV. + XV.]	(91,664)	28,243	176,636	13,954	21,196	129,022	60,932	148,365	189,954	338,319
XVII. Expected Employer Contribution	3,551	27,303	25,546	2,673	852	17,527	21,771	59,925	39,298	99,223
XVIII. Contribution to Trust Fund over 30 Years	1,253	1,341	5,288	416	528	4,252	1,922	8,826	6,174	15,000
XIX. Total Employer Contribution	4,804	28,644	30,834	3,089	1,380	21,779	23,693	68,751	45,472	114,223
XX. Percentage of Annual OPEB Cost Contributed	-3.9%	96.7%	14.5%	19.2%	4.0%	13.6%	35.7%	130.5%	49.3%	29.3%
XXI. Net OPEB Obligation at Beginning of Year (VIII.)	96,714	101,882	403,720	31,769	40,325	54,215	113,784	674,410	167,999	842,409
XXII. Increase in Net OPEB Obligations (XVI. - XVII.)	(95,215)	940	151,090	11,281	20,344	111,495	39,161	88,440	150,656	239,096
XXIII. Net OPEB Obligation at End of Year (XXI. + XXII.)	1,499	102,822	554,810	43,050	60,669	165,710	152,945	762,850	318,655	1,081,505

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Essex

Detail of Plan Liabilities by Group and Dependency Status

Assuming Pay-as-you-go funding - 4.00% discount rate

Plan Liabilities as of July 1, 2013

	<u>Present Value of Future Benefits</u>	<u>Actuarial Accrued Liability (Projected Unit Credit)</u>	<u>Normal Cost</u>
Actives			
Under Age 65			
A. Participants	768,780	372,902	29,304
B. Spouses	<u>768,318</u>	<u>363,789</u>	<u>28,698</u>
C. Total	1,537,098	736,691	58,002
Age 65 and Over			
A. Participants	1,253,830	624,121	53,185
B. Spouses	<u>1,086,548</u>	<u>529,025</u>	<u>45,330</u>
C. Total	2,340,378	1,153,146	98,515
Actives Total			
A. Participants	2,022,610	997,023	82,489
B. Spouses	<u>1,854,866</u>	<u>892,814</u>	<u>74,028</u>
C. Total	3,877,476	1,889,837	156,517
Retirees/Disabled			
Under Age 65			
A. Participants	42,994	42,994	0
B. Spouses	<u>43,704</u>	<u>43,704</u>	<u>0</u>
C. Total	86,698	86,698	0
Age 65 and Over			
A. Participants	1,053,821	1,053,821	<u>0</u>
B. Spouses	<u>65,098</u>	<u>65,098</u>	<u>0</u>
C. Total	1,118,919	1,118,919	0
Retirees/Disabled Total			
A. Participants	1,096,815	1,096,815	0
B. Spouses	<u>108,802</u>	<u>108,802</u>	<u>0</u>
C. Total	1,205,617	1,205,617	0
Total Population			
A. Participants	3,119,425	2,093,838	82,489
B. Spouses	<u>1,963,668</u>	<u>1,001,616</u>	<u>74,028</u>
C. Total	5,083,093	3,095,454	156,517

SECTION I
PRINCIPAL RESULTS OF THE VALUATION
(continued)

Town of Essex
Assuming Funding over 30 years at 7.00% discount rate
Plan Liabilities as of July 1, 2013

	<u>Medical</u>	<u>Dental</u>	<u>Life</u>	<u>Total</u>
I. Present Value of Future Benefits				
A. Actives	1,980,964	0	2,862	1,983,826
B. Retirees/Disabled	<u>930,061</u>	<u>0</u>	<u>7,944</u>	<u>938,005</u>
C. Total	2,911,025	0	10,806	2,921,831
II. Present Value of Future Normal Cost	903,093	0	1,063	904,156
III. Actuarial Accrued Liability (Projected Unit Credit)				
A. Actives	1,077,871	0	1,799	1,079,670
B. Retirees/Disabled	<u>930,061</u>	<u>0</u>	<u>7,944</u>	<u>938,005</u>
C. Total	2,007,932	0	9,743	2,017,675
IV. Plan Assets	15,535	0	75	15,610
V. Unfunded Actuarial Accrued Liability ("UAAL")	1,992,397	0	9,668	2,002,065
VI. Annual Covered Payroll	N/A	N/A	N/A	N/A
VII. UAAL as % of Covered Payroll	N/A	N/A	N/A	N/A
VIII. Net OPEB Obligation	838,748	0	3,661	842,409
IX. Number of Covered Participants				
A. Actives	32	6	32	
B. Retirees/Disabled	<u>22</u>	<u>0</u>	<u>15</u>	
C. Total	54	6	47	
For Fiscal Year Ending June 30, 2014				
X. Normal Cost	83,625	0	135	83,760
XI. Amortization of UAAL - 30 year flat dollar	257,589	0	1,250	258,839
XII. Annual Required Contribution ('ARC') [X. + XI.]	341,214	0	1,385	342,599
XIII. Interest on Net OPEB Obligation	58,712	0	256	58,968
XIV. Adjustment to Annual Required Contribution	(63,170)	0	(276)	(63,446)
XV. Amortization of Actuarial (Gains) / Losses	(89,087)	0	633	(88,454)
XVI. Annual OPEB Cost [XII. + XIII. + XIV. + XV.]	247,669	0	1,998	249,667
XVII. Expected Employer Contribution	98,378	0	845	99,223
XVIII. Contribution over 30 Years increasing at .00% per yr	86,802	0	1,153	87,955
XIX. Total Employer Contribution	185,180	0	1,998	187,178
XX. Percentage of Annual OPEB Cost Contributed	74.8%	0.0%	100.0%	75.0%
XXI. Net OPEB Obligation at Beginning of Year (VIII.)	838,748	0	3,661	842,409
XXII. Increase in Net OPEB Obligations (XVI. - XVII.)	62,489	0	0	62,489
XXIII. Net OPEB Obligation at End of Year (XXI. + XXII.)	901,237	0	3,661	904,898

SECTION I
PRINCIPAL RESULTS OF THE VALUATION
(continued)

Town of Essex
Plan Liabilities as of July 1, 2013
Assuming Funding over 30 years at 7.00% discount rate

	General Government Employees and Retirees	School Employees and Retirees	Police Employees and Retirees	Culture & Recreation Employees and Retirees	Health & Human Services Employees and Retirees	Sewer Employees and Retirees	Water Employees and Retirees	Government Activities	Business-Type Activities	Total
I. Present Value of Future Benefits										
A. Actives	227,918	0	938,554	35,522	84,576	518,361	178,895	1,286,570	697,256	1,983,826
B. Retirees/Disabled	16,748	215,307	201,124	40,078	0	298,661	166,087	473,257	464,748	938,005
C. Total	244,666	215,307	1,139,678	75,600	84,576	817,022	344,982	1,759,827	1,162,004	2,921,831
II. Present Value of Future Normal Cost	94,788	0	455,707	15,974	25,617	236,370	75,700	582,086	312,070	904,156
III. Actuarial Accrued Liability (Projected Unit Credit)										
A. Actives	135,459	0	475,694	19,603	62,267	281,960	104,687	693,023	386,647	1,079,670
B. Retirees/Disabled	16,748	215,307	201,124	40,078	0	298,661	166,087	473,257	464,748	938,005
C. Total	152,207	215,307	676,818	59,681	62,267	580,621	270,774	1,166,280	851,395	2,017,675
IV. Plan Assets	1,302	1,396	5,503	433	550	4,425	2,001	9,184	6,426	15,610
V. Unfunded Actuarial Accrued Liability ("UAAL")	150,905	213,911	671,315	59,248	61,717	576,196	268,773	1,157,096	844,969	2,002,065
VI. Annual Covered Payroll	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	N/A
VII. UAAL as % of Covered Payroll	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0%	0.0%	N/A
VIII. Net OPEB Obligation	96,714	101,882	403,720	31,769	40,325	54,215	113,784	674,410	167,999	842,409
IX. Number of Covered Participants										
A. Actives	6	0	11	1	2	8	4	20	12	32
B. Retirees/Disabled	1	10	5	1	0	3	2	17	5	22
C. Total	7	10	16	2	2	11	6	37	17	54
For Fiscal Year Ending June 30, 2014										
X. Normal Cost	11,851	0	34,631	2,754	5,361	18,613	10,550	54,597	29,163	83,760
XI. Amortization of UAAL - 30 year flat dollar	(144,522)	39,167	155,205	12,213	15,503	124,833	56,440	77,566	181,273	258,839
XII. Annual Required Contribution ("ARC") [X. + XI.]	(132,671)	39,167	189,836	14,967	20,864	143,446	66,990	132,163	210,436	342,599
XIII. Interest on Net OPEB Obligation	6,769	7,133	28,259	2,224	2,823	3,794	7,966	47,208	11,760	58,968
XIV. Adjustment to Annual Required Contribution	(7,284)	(7,673)	(30,405)	(2,393)	(3,038)	(4,084)	(8,569)	(50,793)	(12,653)	(63,446)
XV. Amortization of Actuarial (Gains) / Losses	(7,386)	(7,913)	(31,174)	(2,451)	(3,126)	(25,070)	(11,334)	(52,050)	(36,404)	(88,454)
XVI. Annual OPEB Cost [XII. + XIII. + XIV. + XV.]	(140,572)	30,714	156,516	12,347	17,523	118,086	55,053	76,528	173,139	249,667
XVII. Expected Employer Contribution	3,551	27,303	25,546	2,673	852	17,527	21,771	59,925	39,298	99,223
XVIII. Contribution over 30 Years increasing at .00% per yr	43,749	9,386	29,504	2,602	2,714	100,559	33,282	87,955	133,841	87,955
XIX. Total Employer Contribution	47,300	36,689	55,050	5,275	3,566	118,086	55,053	147,880	173,139	187,178
XX. Percentage of Annual OPEB Cost Contributed	-33.6%	119.5%	35.2%	42.7%	20.4%	100.0%	100.0%	184.2%	200.0%	75.0%
XXI. Net OPEB Obligation at Beginning of Year (VIII.)	96,714	101,882	403,720	31,769	40,325	54,215	113,784	674,410	167,999	842,409
XXII. Increase in Net OPEB Obligations (XVI. - XIX.)	(187,872)	(5,975)	101,466	7,072	13,957	0	0	(71,352)	0	(71,352)
XXIII. Net OPEB Obligation at End of Year (XXI. + XXII.)	(91,158)	95,907	505,186	38,841	54,282	54,215	113,784	603,058	167,999	771,057

Overview of GASB 43 and 45

GASB 43 requires retiree medical plans to disclose information about asset and liability levels and show historical contribution information. GASB 43 only applies in situations where a separate trust is established to prefund these benefits. GASB 45 requires employers to perform periodic actuarial valuations to determine annual accounting costs, and to keep a running tally of the extent to which these amounts are over or under funded.

GASB 43 and 45 apply to those benefits provided after retirement except for pension benefits such as medical insurance, dental and life insurance. The philosophy behind the accounting standard is that these post-employment benefits are part of the compensation earned by employees in return for their services, and the cost of these benefits should be recognized while employees are providing those services, rather than after they have retired. This philosophy has already been applied for years to defined benefit pensions; GASB 43 and 45 extend this practice to all other post-employment benefits.

Overview of GASB 43 and 45
(continued)

The process of determining the liability for OPEB benefits is based on many assumptions about future events. The key actuarial assumptions are:

Turnover and retirement rates: How likely is it that an employee will qualify for post-employment benefits and when will they start?

Medical inflation and claims cost assumptions: When an employee starts receiving post-employment benefits many years from now, how much will be paid each year for the benefits and how rapidly will the costs grow?

Mortality assumption: How long is a retiree likely to receive benefits?

Discount rate assumption: What is the present value of those future benefit payments in terms of today's dollars?

Since the liability is being recognized over the employee's whole career with the Town, the present value is divided into three pieces: the part that is attributed to past years (the "Accrued Liability" or "Past Service Liability"), the part that is being earned this year (the "Normal Cost"), and the part that will be earned in future years (the "Future Service Liability").

Once the Accrued Liability and the Normal Cost have been calculated, the next step is to determine an annual contribution. This consists of two pieces:

- ✓ Normal Cost - because the benefits earned each year should be paid for each year
- ✓ Past Service Cost - a catch-up payment to fund the Accrued Liability over the next 10-30 years

The final step is to keep track going forward of how much of the contribution is actually paid. There is no requirement to actually fund these benefits, but the cumulative deficiency must be disclosed on the Town's financial statements as the OPEB liability. In addition, the Discount Rate used to calculate the liabilities must reflect the expected investment income of whatever funds are set aside to prefund the benefits; if there is no prefunding then the Discount Rate will be much lower and the liabilities significantly higher than if the benefits are prefunded.

Commentary on Plan Experience and Contribution Amounts

1. **Transition to GASB 45:**

The Plan adopted and implemented GASB 45 (“Accounting and Financial Reporting by Employers for Postemployment Benefits other than Pensions”) effective for the fiscal year ending June 30, 2008. As part of this implementation, the Employer must recognize the Actuarial Accrued Liability for past service. Under GASB 45, this amount may be amortized over a period not to exceed thirty (30) years. The Unfunded Actuarial Accrued Liability at transition was amortized over a 30 year period and a flat dollar amortization of the Unfunded Actuarial Accrued Liability at transition. This approach yields an amortization charge of \$200,325. Additionally the Employer must recognize a “normal cost” which represents the annual accrual of benefits for current active employees toward their ultimate postemployment benefits. The normal cost for the 2014 fiscal year is \$156,517. The combined amortization charge and normal cost represent the Annual Required Contribution (“ARC”) for the plan for the 2014 fiscal year. As the Employer has chosen to continue their “pay-as-you-go” funding policy, this valuation must utilize a discount rate which represents earnings on short term investments. For this discount rate, we have used 4.00% per annum. The incremental cost of GASB 45 for the 2014 fiscal year beyond the “pay-as-you-go” costs is \$239,096 reduced by contributions to an OPEB Trust of \$15,000 for a net change in the OPEB liability of \$224,096 .

2. **Plan Experience:**

Plan experience was more favorable than expected. This is due to the premiums for Medicare Integrated plans decreasing over the three year period vs. a 22.5% increase which was somewhat offset by the introduction of a more conservative mortality table. Additionally, it was identified that dates of hire received last valuation were off by four years and a day due to a systems issue which has been resolved - this causes an increase in the normal cost despite the favorable experience. The actuarial experience gain is amortized into the annual OPEB costs over a 30-year period. The net impact of plan experience is an increase in the annual OPEB cost.

SECTION II
SUMMARY OF PLAN PROVISIONS

<u>Effective Date</u>	July 1, 2007; GASB 45 is adopted.
<u>Plan Year</u>	July 1 through June 30.
<u>Eligibility</u>	An employee shall become eligible to retire under this plan upon attainment of age 55 as an active member and completion of 10 years of service or an employee shall be able to retire with 20 years of service regardless of age.
<u>Credited Service</u>	Elapsed time from date of hire to termination of service date.
<u>Participant Contributions</u>	Retirees will pay 25% of premiums in retirement for HMO coverage and 40% for PPO/Indemnity Coverage. Retirees will pay 50% of premiums for life Insurance and 100% for Dental Insurance.
<u>Benefits Offered</u>	Comprehensive Medical Insurance offered through Blue Cross of Massachusetts.
<u>Normal Retirement Date</u>	The normal retirement date is the first day of the month following a participant's 65th birthday.
<u>Early Retirement</u>	Early retirement is available for any participant who has attained benefit eligibility.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

A. ACTUARIAL COST METHOD

The actuarial cost method used to calculate the costs and liabilities of the plan is the Projected Unit Credit Actuarial Cost Method. Under this method, the normal cost and actuarial accrued liability are both based on an accrual of projected benefits over the period for which benefits are accrued. The normal cost is the actuarial present value of one year's benefit accrual on this basis. The actuarial accrued liability is the actuarial present value of the projected benefit times the ratio of past service to expected total service at retirement/termination.

Actuarial gains and losses are calculated each year and amortized over a 30 year period.

All employees who are plan participants on a valuation date are included in the actuarial valuation.

B. ASSET VALUATION METHOD

The actuarial value of assets is equal to the Market Value of the Plan's assets.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS

We used the following assumptions in this year's actuarial valuation:

Pre- and Post-Retirement Mortality

It is assumed that both pre-retirement and post-retirement mortality are represented by the RP-2000 Mortality Table projected to 2017 for males and females.

Discount Rate

4.00% per annum (previously 4.00%)

Employee Termination

It was assumed that employees would terminate employment in accordance with the sample rates shown in the following table:

<u>Service</u>	<u>Non Public Safety Male</u>	<u>Non Public</u>	
		<u>Safety Female</u>	<u>Public Safety</u>
0	15.00%	15.00%	1.50%
5	7.60%	7.60%	1.50%
10	5.40%	5.40%	1.50%
15	3.30%	3.30%	0.00%
20	2.00%	2.00%	0.00%
25	1.00%	1.00%	0.00%
30	0.00%	0.00%	0.00%

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Retirement Rates for non-teachers

It was assumed that the following percentage of eligible employees would retire each year:

<u>Age</u>	<u>Non Public Safety Male</u>	<u>Non Public Safety Female</u>	<u>Public Safety</u>
45	0.00%	0.00%	1.00%
46	0.00%	0.00%	1.00%
47	0.00%	0.00%	1.00%
48	0.00%	0.00%	1.00%
49	0.00%	0.00%	1.00%
50	1.00%	1.50%	2.00%
51	1.00%	1.50%	2.00%
52	1.00%	2.50%	2.00%
53	1.00%	2.50%	5.00%
54	2.00%	2.50%	7.50%
55	2.00%	5.50%	15.00%
56	2.50%	6.50%	10.00%
57	2.50%	6.50%	10.00%
58	5.00%	6.50%	10.00%
59	6.50%	6.50%	15.00%
60	12.00%	5.00%	20.00%
61	20.00%	13.00%	20.00%
62	30.00%	15.00%	25.00%
63	25.00%	12.50%	25.00%
64	22.00%	18.00%	30.00%
65	40.00%	15.00%	100.00%
66	25.00%	20.00%	100.00%
67	25.00%	20.00%	100.00%
68	30.00%	25.00%	100.00%
69	30.00%	20.00%	100.00%
70	100.00%	100.00%	100.00%
71	100.00%	100.00%	100.00%
72	100.00%	100.00%	100.00%

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Healthcare Trend

It was assumed that healthcare costs would increase in accordance with the trend rates in the following table:

<u>Year</u>	<u>Medical</u>	<u>Dental</u>
FY 2008	11.0%	8.0%
FY 2009	10.0%	7.5%
FY 2010	9.0%	7.0%
FY 2011	8.0%	6.5%
FY 2012	7.0%	6.0%
FY 2013	6.0%	5.5%
FY 2014	5.0%	5.0%
FY 2015	5.0%	5.0%

Participation Rate

It was assumed that 80% of employees eligible to receive retirement benefits would enroll in the retiree medical and dental plans upon retirement. For life insurance plans, it was assumed that 80% of eligible employees would elect coverage upon retirement.

Percent Married

It was assumed that 80% of participants who elect retiree healthcare coverage for themselves would also elect coverage for a spouse upon retirement. It was further assumed that husbands are three years older than their wives. For current retirees, the actual census information was used.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Compensation Increases

3.00% per year.

Additional Comments

The values in this report reflect a closed group and do not reflect any new entrants after the valuation date.

For purposes of this valuation, retiree contributions were assumed to increase with the same trend rate as health care claims.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

As part of the Other Post-Employment Benefits Program, there are situations where the cost is borne partly or entirely on the retirees. In most cases, the premium that is used to split the cost is lower than the true cost of providing the medical benefits, for two reasons:

- ✓ The cost sharing program is usually a fixed amount such as a COBRA premium that does not take into account the age of the retiree and his/her dependents. Since medical costs generally increase with age, the cost sharing premium is often lower than the true cost of the medical benefits:
- ✓ The cost sharing premium is usually a blended rate that takes into account the cost of medical benefits for active employees as well as retirees. Medical costs are generally higher for retirees than for active employees of the same age. This means that, again, the cost sharing premium is often lower than the true cost of the medical benefits.

Because of these two factors, a retiree who is paying 100% of the cost sharing premium is most likely not paying 100% of the true cost of the medical benefits. This situation is known as an "implicit subsidy". GASB 43 and 45 require the plan sponsor to measure the liability for this subsidy; that is, the difference between the true cost of the medical benefits and the cost sharing premiums paid by the retiree. To do this, our valuation consists of several steps:

First, we calculate the liability for the true cost of medical benefits expected to be received by retirees and their dependents. This liability is based factors developed by actuaries that reflect how the cost of medical benefits varies by age and gender, as well as the other assumptions discussed on the prior page.

Next, we calculate the liability for the future premiums expected to be paid by the retiree for their own and their dependents' coverage. This liability is based on the current premium rates without adjustment for age or gender. It also is based on the terms of the retiree medical program - different retirees pay different percentages based on their union, date of retirement, age at retirement, and other factors.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

I. CLAIMS COSTS DEVELOPMENT - Based on Active & Retiree Incurred Claims & Premiums

	Number of Participants			
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>	<u>Total</u>
HMO Blue New England	18		16	34
Blue Care Elect				0
Managed Blue for Seniors	7			7
Medex III	<u>12</u>			<u>12</u>
Total	37	0	16	53

	Per Contract Costs (monthly) - FY 2014		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
HMO Blue New England	779.98	0.00	2,105.95
Blue Care Elect	966.06	0.00	2,608.41
Managed Blue for Seniors	310.13	620.26	
Medex III	361.76	723.52	

Gross Expected FY 2014 Incurred Premiums	650,962
Adjustment to reflect children's claims	<u>(104,830)</u>
Total Expected FY 2014 Incurred Premiums (adults only)	546,132

II. PRE-65 AND POST-65 PER CAPITA RETIREE ANNUAL CLAIM COSTS

	<u>Employer Primary</u>	<u>Medicare Primary</u>
Age 65	13,301	4,113
Average Age	13,199	4,113

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

III. BREAKDOWN OF CLAIM COSTS

546,132 Active and Retired Claims (No Children) - Including Administrative fees & trend

6,220 Average Per-Capita Claim (including Retention & Pooling)

ALL ACTIVE EMPLOYEES AND SPOUSES (non-GIC)

Age Bracket	Number of Females	Number of Males	Female Aging Factor	Male Aging Factor	Aged (F) Average Claims	Aged (M) Average Claims	Age Related Claims
24 & Under	0	0	1.312	0.549	8,161	3,415	0
25 to 29	2	2	1.312	0.591	8,161	3,676	23,674
30 to 34	0	3	1.312	0.712	8,161	4,429	13,287
35 to 39	1	0	1.312	0.850	8,161	5,287	8,161
40 to 44	4	0	1.312	1.000	8,161	6,220	32,644
45 to 49	5	7	1.456	1.193	9,056	7,420	97,220
50 to 54	2	7	1.599	1.441	9,946	8,963	82,633
55 to 59	3	3	1.740	1.753	10,823	10,904	65,181
60 to 64	2	1	1.968	2.102	12,241	13,074	37,556
65 to 69	3	1	2.168	2.316	13,485	14,406	54,861
70 & Over	0	0	2.396	2.557	14,903	15,905	0
Total	22	24					415,217

ALL RETIREES AND SPOUSES - NOT MEDICARE ELIGIBLE (non-GIC)

Age Bracket	Number of Females	Number of Males	Female Aging Factor	Male Aging Factor	Aged (F) Average Claims	Aged (M) Average Claims	Age Related Claims
44 & Under	0	0	1.312	1.000	8,161	6,220	0
45 to 49	0	0	1.456	1.193	9,056	7,420	0
50 to 54	0	0	1.599	1.441	9,946	8,963	0
55 to 59	0	0	1.740	1.753	10,823	10,904	0
60 to 64	1	2	1.968	2.102	12,241	13,074	38,389
65 to 69	0	1	2.168	2.316	13,485	14,406	14,406
Total	1	3					52,795

ALL RETIREES AND SPOUSES - MEDICARE ELIGIBLE (non-GIC)

Age Bracket	Number of Females	Number of Males	Female Aging Factor	Male Aging Factor	Aged (F) Average Claims	Aged (M) Average Claims	Age Related Claims
65 to 69	2	4	2.168	2.316	4,113	4,113	24,678
70 to 74	1	0	2.396	2.557	4,113	4,113	4,113
75 to 79	3	1	2.593	2.769	4,113	4,113	16,452
80 to 84	1	1	2.724	2.910	4,113	4,113	8,226
85 to 89	3	2	2.864	3.059	4,113	4,113	20,565
90 & Over	1	0	3.010	3.215	4,113	4,113	4,113
Total	11	8					78,147
Grand Totals	34	35					546,159

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

I. CLAIMS COSTS DEVELOPMENT - with Active & Retiree Incurred Premiums

	Per Contract Costs (monthly) - FY 2014		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
Dental Plan	N/A		N/A
	FY 2014 Expected Per Person Rate		N/A

EXHIBIT A

Financial Statement Disclosure
(As of July 1, 2013)

The GASB Standards for accounting and financial reporting for postemployment benefits other than pensions requires the following disclosures in the financial statements with regard to the retiree medical and life insurance benefits;

1. A DESCRIPTION OF THE RETIREE MEDICAL INSURANCE PROGRAM:

- a. Plan Type: Comprehensive Medical Insurance offered through Blue Cross of Massachusetts.
- b. Administrator: Town of Essex
- c. Eligibility: An employee shall become eligible to retire under this plan upon attainment of age 55 as an active member and completion of 10 years of service or an employee shall be able to retire with 20 years of service regardless of age.
- d. Cost Sharing: Retirees will pay 25% of premiums in retirement for HMO coverage and 40% for PPO/Indemnity Coverage.

2. A DESCRIPTION OF THE DENTAL INSURANCE PROGRAM:

- a. Plan Type: Comprehensive Dental Insurance
- b. Administrator: Town of Essex
- c. Eligibility: Same as above
- d. Cost sharing: Retirees shall pay 100% of premiums.

3. A DESCRIPTION OF THE RETIREE LIFE INSURANCE PROGRAM:

- a. Plan Type: Group Term Life Insurance - \$2,000
- b. Administrator: Town of Essex
- c. Eligibility: Same as above
- d. Cost sharing: Retirees shall pay 50% of premiums.

EXHIBIT A

Financial Statement Disclosure
(As of July 1, 2013)
(continued)

4. RETIREE MEDICAL, DENTAL AND LIFE INSURANCE CONTRIBUTIONS:

Group	Individual	Family
Medical	Retirees will pay 25% of premiums in retirement for HMO coverage and 40% for PPO/Indemnity Coverage.	Retirees will pay 25% of premiums in retirement for HMO coverage and 40% for PPO/Indemnity Coverage.
Dental	Retirees will pay 100% of the premiums in retirement	Retirees will pay 100% of the premiums in retirement
Life	Retirees will pay 50% of the premiums in retirement	N/A

5. FUNDING POLICY

The contribution requirements of plan members and the Town are established and may be amended through Town ordinances. The Town expects to contribute \$0 beyond the pay-as-you-go. For the 2014 fiscal year, total Town premiums plus implicit costs for the retiree medical program are \$99,223. The Town is also projected to make a contribution to an OPEB Trust of \$15,000 for the 2014 fiscal year for a total contribution of \$114,223 .

EXHIBIT A

Financial Statement Disclosure
(As of July 1, 2013)
(continued)

6. ANNUAL OPEB COST AND NET OPEB OBLIGATION

The Town's annual other postemployment benefit ("OPEB") cost (expense) is calculated based on the annual required contribution of the employer ("ARC"), an amount actuarially determined in accordance with the parameters of GASB Statement No. 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed thirty (30) years. The following table shows the components of the Town's annual OPEB costs for the fiscal year, the amount actually contributed to the plan and changes in the Town's net OPEB obligation to the plan:

Annual Required Contribution	\$356,842
Interest on net OPEB obligation	\$33,698
Adjustment to annual required contribution	(\$46,844)
Amortization of Actuarial (Gains) / Losses	(\$5,377)
Annual OPEB cost (expense)	\$338,319
Contributions made to pay benefits	\$99,223
Contributions made to OPEB Trust	\$15,000
Increase in net OPEB obligation	\$224,096
Net OPEB Obligation – beginning of year	\$842,409
Net OPEB Obligation – end of year	\$1,066,505

EXHIBIT A

Financial Statement Disclosure
(As of July 1, 2013)
(continued)

The Town's annual OPEB cost, the percentage of the annual OPEB cost contributed to the plan, and the net OPEB obligation for the 2014 fiscal year and the three preceding years were as follows:

Fiscal Year Ended	Annual OPEB Cost	Expected Employer Payments	Percentage of OPEB Cost Contributed	Increase in OPEB Obligation	Net OPEB Obligation
06/30/2016 (est.)	\$374,018	\$97,757	26.1%	\$276,261	\$1,592,285
06/30/2015 (est.)	\$355,181	\$105,662	29.7%	\$249,519	\$1,316,024
06/30/2014	\$338,319	\$114,223	33.8%	\$224,096	\$1,066,505
06/30/2013	\$302,790	\$136,146	45.0%	\$166,644	\$842,409
06/30/2012	\$304,525	\$108,484	35.6%	\$196,041	\$675,765
06/30/2011	\$311,879	\$111,029	35.6%	\$200,850	\$479,724

Schedule of Funding Progress:

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
07/01/2015 (est.)	\$32,483	\$3,471,115	\$3,438,632	0.9%	N/A	N/A
07/01/2014 (est.)	\$31,234	\$3,278,856	\$3,247,622	1.0%	N/A	N/A
07/01/2013	\$15,610	\$3,095,454	\$3,079,844	0.5%	N/A	N/A
07/01/2012	\$0	\$3,779,624	\$3,779,624	0.0%	N/A	N/A
07/01/2011	\$0	\$3,649,192	\$3,649,192	0.0%	N/A	N/A
07/01/2010	\$0	\$3,513,659	\$3,513,659	0.0%	N/A	N/A

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2013)

(continued)

Fiscal Year Ending June 30, 2014										
	<u>General Government Employees and Retirees</u>	<u>School Employees and Retirees</u>	<u>Police Employees and Retirees</u>	<u>Culture & Recreation Employees and Retirees</u>	<u>Health & Human Services Employees and Retirees</u>	<u>Sewer Employees and Retirees</u>	<u>Water Employees and Retirees</u>	<u>Government Activities</u>	<u>Business-Type Activities</u>	<u>Total</u>
OPEB obligation at beginning of year	96,714	101,882	403,720	31,769	40,325	54,215	113,784	674,410	167,999	842,409
Annual Required Contribution	(89,706)	30,313	184,831	14,599	22,016	131,393	63,396	162,053	194,789	356,842
Interest on Net OPEB Obligation	3,869	4,076	16,149	1,271	1,613	2,168	4,552	26,978	6,720	33,698
Adjustment to the ARC	(5,378)	(5,665)	(22,449)	(1,767)	(2,243)	(3,015)	(6,327)	(37,502)	(9,342)	(46,844)
Amortization of Actuarial (Gains)/Losses	(449)	(481)	(1,895)	(149)	(190)	(1,524)	(689)	(3,164)	(2,213)	(5,377)
Annual OPEB Cost	(91,664)	28,243	176,636	13,954	21,196	129,022	60,932	148,365	189,954	338,319
Total Expected Employer Payments	4,804	28,644	30,834	3,089	1,380	21,779	23,693	68,751	45,472	114,223
Increase in OPEB Obligation	(96,468)	(401)	145,802	10,865	19,816	107,243	37,239	79,614	144,482	224,096
OPEB obligation at end of year	246	101,481	549,522	42,634	60,141	161,458	151,023	754,024	312,481	1,066,505
APBO at beginning of year	258,630	276,734	1,091,152	85,825	108,992	877,407	396,714	1,821,333	1,274,121	3,095,454

Fiscal Year Ending June 30, 2015										
	<u>General Government Employees and Retirees</u>	<u>School Employees and Retirees</u>	<u>Police Employees and Retirees</u>	<u>Culture & Recreation Employees and Retirees</u>	<u>Health & Human Services Employees and Retirees</u>	<u>Sewer Employees and Retirees</u>	<u>Water Employees and Retirees</u>	<u>Government Activities</u>	<u>Business-Type Activities</u>	<u>Total</u>
OPEB obligation at beginning of year	246	101,481	549,522	42,634	60,141	161,458	151,023	754,024	312,481	1,066,505
Annual Required Contribution	(91,692)	30,984	188,923	14,922	22,503	134,302	64,800	165,640	199,102	364,742
Interest on Net OPEB Obligation	4,897	5,160	20,444	1,609	2,042	2,745	5,763	34,152	8,508	42,660
Adjustment to the ARC	(6,808)	(7,172)	(28,420)	(2,237)	(2,840)	(3,817)	(8,010)	(47,477)	(11,827)	(59,304)
Amortization of Actuarial (Gains)/Losses	(2,630)	679	4,493	355	547	2,223	1,416	3,444	3,639	7,083
Annual OPEB Cost	(96,233)	29,651	185,440	14,649	22,252	135,453	63,969	155,759	199,422	355,181
Total Expected Employer Payments	4,444	26,497	28,523	2,857	1,277	20,147	21,917	63,598	42,064	105,662
Increase in OPEB Obligation	(100,677)	3,154	156,917	11,792	20,975	115,306	42,052	92,161	157,358	249,519
OPEB obligation at end of year	(100,431)	104,635	706,439	54,426	81,116	276,764	193,075	846,185	469,839	1,316,024
APBO at beginning of year	273,954	293,130	1,155,801	90,910	115,450	929,392	420,219	1,929,245	1,349,611	3,278,856

Fiscal Year Ending June 30, 2016										
	<u>General Government Employees and Retirees</u>	<u>School Employees and Retirees</u>	<u>Police Employees and Retirees</u>	<u>Culture & Recreation Employees and Retirees</u>	<u>Health & Human Services Employees and Retirees</u>	<u>Sewer Employees and Retirees</u>	<u>Water Employees and Retirees</u>	<u>Government Activities</u>	<u>Business-Type Activities</u>	<u>Total</u>
OPEB obligation at beginning of year	(100,431)	104,635	706,439	54,426	81,116	276,764	193,075	846,185	469,839	1,316,024
Annual Required Contribution	(93,917)	31,736	193,510	15,284	23,049	137,563	66,373	169,662	203,936	373,598
Interest on Net OPEB Obligation	6,044	6,367	25,227	1,985	2,520	3,387	7,111	42,143	10,498	52,641
Adjustment to the ARC	(8,402)	(8,850)	(35,069)	(2,760)	(3,504)	(4,710)	(9,884)	(58,585)	(14,594)	(73,179)
Amortization of Actuarial (Gains)/Losses	(5,063)	1,971	11,607	917	1,367	6,397	3,762	10,799	10,159	20,958
Annual OPEB Cost	(101,338)	31,224	195,275	15,426	23,432	142,637	67,362	164,019	209,999	374,018
Total Expected Employer Payments	4,112	24,515	26,389	2,643	1,181	18,640	20,277	58,840	38,917	97,757
Increase in OPEB Obligation	(105,450)	6,709	168,886	12,783	22,251	123,997	47,085	105,179	171,082	276,261
OPEB obligation at end of year	(205,881)	111,344	875,325	67,209	103,367	400,761	240,160	951,364	640,921	1,592,285
APBO at beginning of year	290,018	310,318	1,223,573	96,241	122,220	983,888	444,859	2,042,370	1,428,745	3,471,115

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2013)

(continued)

7. FUNDED STATUS AND FUNDING PROGRESS

As of July 1, 2013, the most recent valuation date, the plan was 0.50% funded. The actuarial liability for benefits was \$3,095,454, and the actuarial value of assets was \$15,610, resulting in an unfunded actuarial accrued liability (UAAL) of \$3,079,844. The covered payroll (annual payroll of active employees covered by the plan) was \$ N/A and the ratio of the UAAL to the covered payroll was N/A.

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Amounts determined regarding the funded status of the plan and the annual required contribution of the employer are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedule of funding progress, presented in the required supplementary information following the financial statements, presents multiyear trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

8. EFFECT OF 1% CHANGE IN HEALTHCARE TREND RATES

In the event that healthcare trend rates were 1% higher than forecast and employee contributions were to increase at the forecast rates, the Actuarial Accrued Liability would increase to \$3,931,781 or by 27.0% and the corresponding Normal Cost would increase to \$218,995 or by 39.9%. If such healthcare trend rates were 1% less than forecast and employee contributions were to increase at the forecast rate, the Actuarial Accrued Liability would decrease to \$2,438,632 or by 21.2% and the corresponding Normal Cost would decrease to \$109,890 or by 29.8%.

EXHIBIT A

Financial Statement Disclosure
(As of July 1, 2013)
(continued)

9. ACTUARIAL METHODS AND ASSUMPTIONS

Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations.

Actuarial Cost Method: Projected Unit Credit
Investment Rate of Return: 4.00% per annum (previously 4.00%)
Healthcare Trend Rates

<u>Year</u>	<u>Medical</u>	<u>Dental</u>
FY 2008	11.0%	8.0%
FY 2009	10.0%	7.5%
FY 2010	9.0%	7.0%
FY 2011	8.0%	6.5%
FY 2012	7.0%	6.0%
FY 2013	6.0%	5.5%
FY 2014	5.0%	5.0%
FY 2015	5.0%	5.0%

General Inflation Assumption: 2.50% per annum
Annual Compensation Increases: 3.00% per annum
Actuarial Value of Assets: Market Value
Amortization of UAAL: Level dollar amortization over 30 years at the last valuation
Remaining Amortization Period: 24 years at July 1, 2013

EXHIBIT A

Financial Statement Disclosure
(As of July 1, 2013)
(continued)

10. Remaining Amortization Bases

The initial Actuarial Accrued Liability as of the date GASB 45 was adopted is amortized as a component of the Annual Required Contribution ("ARC"). The Unfunded Actuarial Accrued Liability at transition was amortized over a 30 year period and a flat dollar amortization of the Unfunded Actuarial Accrued Liability at transition. For years subsequent to the initial adoption of GASB 45, cumulative gains/losses are amortized on a level dollar basis over a 30 year period. Gains and losses arise from experience and contribution deficiencies and excess contributions in relation to each year's ARC under GASB 45.

Changes in Unfunded Actuarial Liability Since Prior Valuation
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Expected Unfunded Actuarial Liability

1. Actuarial Accrued Liability at prior valuation date	3,513,659
2. Actuarial Value of Assets at prior valuation date	<u>0</u>
3. Unfunded Actuarial Accrued Liability at prior valuation date [1. - 2.]	3,513,659
4. Normal Cost for prior periods	378,249
5. Employer Contributions for prior periods	(355,659)
6. Interest to current valuation date	<u>461,835</u>
7. Expected Actuarial Accrued Liability [3. + 4. + 5. + 6.]	3,998,084

Actual Unfunded Actuarial Liability

8. Actuarial Accrued Liability at current valuation date	3,095,454
9. Actuarial Value of Assets at current valuation date	<u>15,610</u>
10. Unfunded Actuarial Accrued Liability at current valuation date [8. - 9.]	3,079,844

Net Actuarial (Gain) / Loss from Plan Experience [10. - 7.] **(918,240)**

11. Unfunded Actuarial Accrued Liability at current valuation date [10.]	3,079,844
12. Remaining Initial Unfunded to be amortized	<u>3,176,522</u>
13. Actuarial (Gain) / Loss to be amortized: [11. - 12.]	(96,678)

EXHIBIT A

Financial Statement Disclosure
(As of July 1, 2013)
(continued)

Amortization of Initial Unfunded and Plan Experience under GASB 45						
Date Established	Description	Initial Amount	Initial Amortization Period	Remaining Balance at Valuation Date	Remaining Amortization Period	Annual Amortization Payment
July 1, 2007	GASB 45 Liability	3,602,571	30	3,176,522	24	200,325
July 1, 2013	Cumulative (Gain) / Loss	(96,678)	30	(96,680)	30	(5,377)
July 1, 2013	Adjustment to ARC	(842,409)	30	(842,409)	30	(46,843)
Total				2,237,433		148,105

11. Recognition of OPEB trust assets

The State of Massachusetts has recently passed legislation allowing municipal entities to establish a trust for Other Than Postemployment Benefits (“OPEB”) under M.G.L. Chapter 32B, Section 20 for purposes of accumulating assets to pre-fund the liabilities under GASB 45. To the best of our knowledge, Town of Essex has established an irrevocable trust for the purposes of prefunding liabilities under GASB 45.

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2013)

(continued)

12. Impact of Section 9A1/2 of M.G.L. Chapter 32B

For employees who retire on or after January 1, 2011 whenever a retired employee or beneficiary receives a healthcare premium contribution from a governmental unit in a case where a portion of the retiree's creditable service is attributable to service in 1 or more other governmental units, the first governmental unit shall be reimbursed in full, in accordance with this paragraph, by the other governmental units for the portion of the premium contributions that corresponds to the percentage of the retiree's creditable service that is attributable to each governmental unit. The other governmental units shall be charged based on their own contribution rate or the contribution rate of the first employer, whichever is lower.

For purposes of the valuation we have not attempted to value the impact of prior governmental service at other entities in the State of Massachusetts for current employees of the Town of Essex nor have we attempted to value the impact of prior Town of Essex employees currently working at other governmental entities in the State of Massachusetts.

EXHIBIT B

Reconciliation of Plan Participation
(As of July 1, 2013)

ACTIVE EMPLOYEES

	<u>July 1, 2013</u>	<u>July 1, 2010</u>
A. Average Age at Hire	38.16	33.04
B. Average Service	11.40	13.00
C. Average Current Age	49.56	46.04

EXHIBIT C

Projected Cash Flows (Open Group) - Pay-as-you-go Approach

Total Medical, Dental & Life Insurance - pay-as-you-go funding - 4.00% discount rate

Fiscal Year	Total APBO	Normal Cost	Expected Amortization	Interest on Net OPEB Obligation	Adjustment to ARC	Amortization of Actuarial (Gain) / Loss	Expected Annual OPEB Cost	OPEB Obligation as of June 30	Employer Share of Premiums / Claims	Excess Employer Payments (beyond claims)	Plan Assets at Beginning of year	Unfunded Accrued Actuarial Liability ("UAAAL")
								842,409				
2014	3,095,454	156,517	200,325	33,698	(46,844)	(5,377)	338,319	1,066,505	99,223	15,000	15,610	3,079,844
2015	3,278,856	164,417	200,325	42,660	(59,304)	7,083	355,181	1,316,024	105,662	0	31,234	3,247,622
2016	3,471,115	173,273	200,325	52,641	(73,179)	20,958	374,018	1,592,285	97,757	0	32,483	3,438,632
2017	3,688,497	181,831	200,325	63,691	(88,540)	36,319	393,626	1,881,892	104,019	0	33,782	3,654,715
2018	3,916,961	182,417	200,325	75,276	(104,644)	52,423	405,797	2,170,346	117,343	0	35,133	3,881,828
2019	4,141,316	191,881	200,325	86,814	(120,684)	68,463	426,799	2,479,684	117,461	0	36,538	4,104,778
2020	4,384,365	198,787	200,325	99,187	(137,885)	85,664	446,078	2,801,420	124,342	0	38,000	4,346,365
2021	4,637,163	202,077	200,325	112,057	(155,775)	103,554	462,238	3,121,338	142,320	0	39,520	4,597,643
2022	4,884,797	205,758	200,325	124,853	(173,564)	121,343	478,715	3,433,668	166,385	0	41,101	4,843,696
2023	5,121,137	209,615	200,325	137,347	(190,932)	138,711	495,066	3,740,469	188,265	0	42,745	5,078,392
2024	5,348,186	214,396	200,325	149,619	(207,992)	155,771	512,119	4,034,127	218,461	0	44,455	5,303,731
2025	5,557,886	225,652	200,325	161,365	(224,321)	172,100	535,121	4,320,163	249,085	0	46,233	5,511,653
2026	5,755,831	237,445	200,325	172,807	(240,226)	188,005	558,356	4,621,163	257,356	0	48,082	5,707,749
2027	5,965,357	248,728	200,325	184,846	(256,964)	204,743	581,678	4,943,449	259,392	0	50,005	5,915,352
2028	6,192,880	264,705	200,325	197,738	(274,885)	222,664	610,547	5,271,762	282,234	0	52,005	6,140,875
2029	6,422,364	280,150	200,325	210,870	(293,141)	240,920	639,124	5,622,578	288,308	0	54,085	6,368,279
2030	6,670,775	295,427	200,325	224,903	(312,648)	260,427	668,434	6,012,352	278,660	0	56,248	6,614,527
2031	6,955,044	311,473	200,325	240,494	(334,322)	282,101	700,071	6,415,184	297,239	0	58,498	6,896,546
2032	7,248,049	330,398	200,325	256,607	(356,722)	304,501	735,109	6,844,133	306,160	0	60,838	7,187,211
2033	7,563,179	351,018	200,325	273,765	(380,574)	328,353	772,887	7,302,267	314,753	0	63,272	7,499,907
2034	7,903,422	369,620	200,325	292,091	(406,049)	353,828	809,815	7,823,422	288,660	0	65,803	7,837,619
2035	8,303,757	389,030	200,325	312,937	(435,028)	382,807	850,071	8,378,973	294,520	0	68,435	8,235,322
2036	8,734,198	407,117	200,325	335,159	(465,920)	413,699	890,380	8,954,401	314,952	0	71,172	8,663,026
2037	9,179,418	423,700	200,325	358,176	(497,917)	445,696	929,980	9,580,716	303,665	0	74,019	9,105,399
2038	9,671,433	439,466	0	383,228	(532,744)	480,523	770,473	10,021,432	329,757	0	76,980	9,594,453
2039	10,172,387	455,708	0	400,858	(557,251)	505,030	804,345	10,467,615	358,162	0	80,059	10,092,328
2040	10,680,731	470,337	0	418,705	(582,060)	529,839	836,821	10,912,282	392,154	0	83,261	10,597,470
2041	11,189,271	487,592	0	436,491	(606,787)	554,566	871,862	11,365,827	418,317	0	86,591	11,102,680
2042	11,708,887	505,735	0	454,634	(632,007)	579,786	908,148	11,817,451	456,524	0	90,055	11,618,832
2043	12,228,423	525,543	0	472,698	(657,119)	604,898	946,020	12,264,776	498,695	0	93,657	12,134,766
2044	12,745,482	546,973	0	490,591	(681,994)	681,994	1,037,564	12,776,638	525,902	0	97,403	12,648,079
2045	13,277,214	569,844	0	511,058	(710,444)	710,444	1,080,902	13,275,904	581,436	0	101,299	13,175,915

EXHIBIT D

Projected Cash Flows (Open Group) - Funded Approach

Total Medical, Dental & Life Insurance - Funding over 30 years at 7.00% discount rate

Fiscal Year	Total APBO	Normal Cost	Expected Amortization	Interest on Net OPEB Obligation	Adjustment to ARC	Amortization of Actuarial (Gain) / Loss	Expected Annual OPEB Cost	OPEB Obligation as of June 30	Employer Share of Premiums / Claims	Excess Employer Payments (beyond claims)	Plan Assets at Beginning of year	Unfunded Accrued Actuarial Liability ("UAAL")
2014	2,017,675	83,760	258,839	58,968	(63,446)	(88,454)	249,667	842,409 904,898	99,223	87,955	15,610	2,002,065
2015	2,142,367	89,063	258,839	63,343	(68,152)	(83,748)	259,345	970,626	105,662	87,955	104,658	2,037,709
2016	2,274,572	94,785	258,839	67,944	(73,102)	(78,798)	269,668	1,054,582	97,757	87,955	199,939	2,074,633
2017	2,430,611	100,409	258,839	73,820	(79,425)	(72,475)	281,168	1,143,776	104,019	87,955	301,890	2,128,721
2018	2,596,892	100,363	258,839	80,064	(86,143)	(65,757)	287,366	1,225,844	117,343	87,955	410,977	2,185,915
2019	2,760,506	106,204	258,839	85,809	(92,324)	(59,576)	298,952	1,319,380	117,461	87,955	527,700	2,232,806
2020	2,941,695	110,219	258,839	92,356	(99,369)	(52,531)	309,514	1,416,597	124,342	87,955	652,594	2,289,101
2021	3,132,502	111,588	258,839	99,162	(106,690)	(45,210)	317,689	1,504,011	142,320	87,955	786,231	2,346,271
2022	3,318,894	112,666	258,839	105,281	(113,274)	(38,626)	324,886	1,574,557	166,385	87,955	929,222	2,389,672
2023	3,493,735	113,785	258,839	110,219	(118,587)	(33,313)	330,943	1,629,280	188,265	87,955	1,082,223	2,411,512
2024	3,658,603	114,845	258,839	114,049	(122,709)	(29,191)	335,833	1,658,697	218,461	87,955	1,245,934	2,412,669
2025	3,803,836	120,176	258,839	116,109	(124,924)	(26,976)	343,224	1,664,881	249,085	87,955	1,421,104	2,382,732
2026	3,932,171	126,140	258,839	116,541	(125,390)	(26,510)	349,620	1,669,190	257,356	87,955	1,608,536	2,323,635
2027	4,067,024	131,726	258,839	116,843	(125,714)	(26,186)	355,508	1,677,351	259,392	87,955	1,809,089	2,257,935
2028	4,215,112	140,665	258,839	117,414	(126,329)	(25,571)	365,018	1,672,180	282,234	87,955	2,023,680	2,191,432
2029	4,358,691	149,293	258,839	117,052	(125,940)	(25,960)	373,284	1,669,201	288,308	87,955	2,253,293	2,105,398
2030	4,515,053	157,643	258,839	116,844	(125,715)	(26,185)	381,426	1,684,012	278,660	87,955	2,498,979	2,016,074
2031	4,701,619	166,376	258,839	117,881	(126,831)	(25,069)	391,196	1,690,014	297,239	87,955	2,761,863	1,939,756
2032	4,890,708	177,089	258,839	118,301	(127,283)	(24,617)	402,329	1,698,228	306,160	87,955	3,043,148	1,847,560
2033	5,094,951	189,348	258,839	118,876	(127,901)	(23,999)	415,163	1,710,683	314,753	87,955	3,344,123	1,750,828
2034	5,317,414	200,537	258,839	119,748	(128,839)	(23,061)	427,224	1,761,292	288,660	87,955	3,666,167	1,651,247
2035	5,595,341	212,148	258,839	123,290	(132,651)	(19,249)	442,377	1,821,194	294,520	87,955	4,010,754	1,584,587
2036	5,898,875	222,989	258,839	127,483	(137,162)	(14,738)	457,411	1,875,698	314,952	87,955	4,379,462	1,519,413
2037	6,213,397	232,711	258,839	131,299	(141,267)	(10,633)	470,949	1,955,027	303,665	87,955	4,773,979	1,439,418
2038	6,572,415	241,708	0	136,852	(147,242)	(4,658)	226,660	1,763,975	329,757	87,955	5,196,113	1,376,302
2039	6,938,273	250,943	0	123,478	(132,853)	(19,047)	222,521	1,540,379	358,162	87,955	5,647,796	1,290,477
2040	7,309,228	258,662	0	107,826	(116,013)	(35,887)	214,588	1,274,858	392,154	87,955	6,131,097	1,178,131
2041	7,678,036	268,030	0	89,240	(96,015)	(55,885)	205,370	973,956	418,317	87,955	6,648,229	1,029,807
2042	8,054,690	277,661	0	68,177	(73,353)	(78,547)	193,938	623,415	456,524	87,955	7,201,560	853,130
2043	8,427,137	288,131	0	43,639	(46,952)	(104,948)	179,870	216,635	498,695	87,955	7,793,624	633,513
2044	8,791,732	299,223	0	15,164	(16,316)	16,316	314,387	(82,835)	525,902	87,955	8,427,133	364,599
2045	9,164,606	310,811	0	(5,799)	6,238	276	311,526	(412,364)	581,436	59,619	9,104,987	59,619

EXHIBIT E

GLOSSARY

Accrual Accounting - A system of accounting in which revenues are recorded when earned and outlays are recorded when goods are received or services performed, even though the actual receipt of revenues and payment for goods or services may occur, in whole or in part, at a different time.

Actuarial Value of Assets - The value of cash, investments, other assets and property belonging to an OPEB trust, pension fund or similar entity, as used by the actuary for the purpose of actuarial valuation. Some funds may be restricted for other purposes, and "smoothing" of investment gains and losses often make the actuarial value of assets different from the market value of assets.

Annual Required Contribution - Normal Cost plus an amortization of the funding shortfall over a period of no more than 30 years.

Cash Basis Accounting - A system of accounting in which revenues are recorded when actually received and outlays are recorded when payment is made.

Discount Rate - The interest rate used to calculate present value of a series of future cash flows. Under GASB 45, the rate should be "long term expected yield on the investments that are expected to be used to pay benefits as they come due. These would be plan investments for a funded plan, the employer's investments for a pay as you go plan [e.g. short term county investment pool], or a weighted average of expected plan and employer investments for a plan that is partially funded".

FASB - Financial Accounting Standards Board. "Since 1973, the Financial Accounting Standards Board (FASB) has been the designated organization in the private sector for establishing standards of financial accounting and reporting".

GASB - Government Accounting Standards Board. "The Governmental Accounting Standards Board (GASB) was organized in 1984 by the Financial Accounting Foundation (FAF) to establish standards of financial accounting and reporting for state and local governmental entities. Its standards guide the preparation of external financial reports of those entities."

GFOA - Government Finance Officers Association. "GFOA is the professional association of state/provincial and local finance officers in the United States and Canada, and has served the public finance profession since 1906. Approximately 16,000 GFOA members are dedicated to the sound management of government financial resources."

EXHIBIT E

GLOSSARY

(continued)

Implicit Subsidy - “The difference between a premium rate charged to retirees for a particular benefit and the estimated rate that would have been applicable to those retirees if that benefit was acquired for them as a separate group.”

Irrevocable Contribution - “Irrevocably transferred assets to a qualifying trust, or equivalent arrangement, in which plan assets are dedicated to providing benefits to retirees and their beneficiaries in accordance with the terms of the plan and are legally protected from creditors of the employer(s) or plan administrator. The preceding criteria preclude counting as [irrevocable] contributions (a) designations of net assets of a governmental or proprietary fund to be used for OPEB or (b) internal transfers of assets to a separate governmental or proprietary fund for the same purpose. Rather, such actions should be regarded as earmarking of employer assets.”

Level Dollar Amortization - Funding a shortfall in OPEB assets with equal dollar payments over a designated number of years (no more than 30 years). The present value of the level payments equals the present value of unfunded liabilities, the UAAL.

Level Percent of Payroll Amortization - Funding a shortfall in OPEB assets as a level percent of payroll over a designated number of years (no more than 30 years). The present value of the payments equals the present value of unfunded liabilities, the UAAL. Level percent of payroll typically has lower payments in the early years than level dollar amortization. When using level payroll amortization, employee count is assumed to be constant, and the payroll differences arise from overall wage trends.

Normal Cost - The actuarially determined present value contribution needed to fund benefits which are earned for employee service rendered during the current year. Normal cost depends on many factors, including the interest rate used to discount future cashflows, and expected inflation.

OPEB - Other Post Employment Benefits

OPEB Trust - An entity other than a pension or retirement system which manages OPEB assets. In many respects it is similar to a pension fund for OPEB. For reasons detailed in GASB 45, contributions to an OPEB trust should be irrevocable in order to obtain the most favorable accounting treatment.

EXHIBIT E

GLOSSARY

(continued)

Pay-as-you-go funding - Paying benefits (such as pensions or OPEB) on a cash basis, with no money set aside for future liabilities which are already incurred.

POB - Pension Obligation Bond. Generally yielding taxable interest, POBs are issued to help fund a previously unfunded or underfunded pension liability.

UAAL - Unfunded Accrued Actuarial Liability. Actuarial Accrued Liability minus the Actuarial Value of Assets.