

**Town of Topsfield Other
Postemployment Benefits Plan**

GASB 45 Actuarial Valuation

as of

July 1, 2015

For the fiscal years ending

June 30, 2016

June 30, 2017

Delivered November 2016

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LETTER

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November 15, 2016

Personal and Confidential

Ms. Barbara Michalowski
Town Treasurer
Town of Topsfield
8 West Common Street
Topsfield, MA 01983

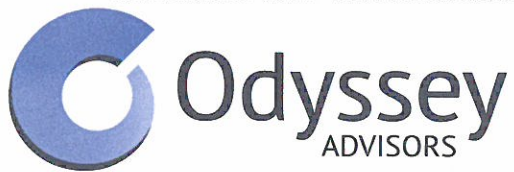
Dear Ms. Michalowski:

We have performed an actuarial valuation of the Town of Topsfield Other Postemployment Benefits Plan for the fiscal year ending June 30, 2016. The figures presented in this report reflect the adoption, by the Town of Topsfield, of Statement No. 45 of the Governmental Accounting Standards Board ("GASB 45") effective July 1, 2011.

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, reflecting 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.

**East Coast**

11 Hayward Ave, Building 4
Colchester, CT 06415
(860) 537-9080

West Coast

1350 E. Flamingo Road, Suite 254
Las Vegas, NV 89119
(702) 979-2880

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

Very truly yours,

A large, stylized handwritten signature in blue ink, appearing to be 'P. Elmore', is written over the typed name and title.

Parker E. Elmore, ASA, EA, FCA, MAAA
President, CEO & Actuary

November 15, 2016

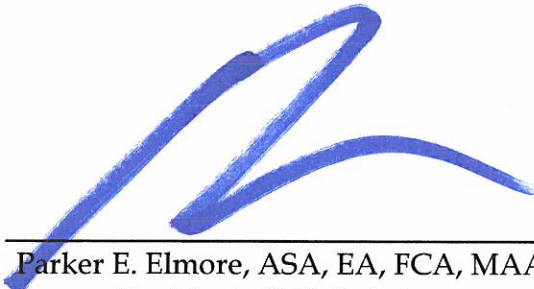
ACTUARIAL CERTIFICATION

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the Town of Topsfield other postemployment benefit programs as of July 1, 2015 for the fiscal year ending June 30, 2016 in accordance with generally accepted actuarial principles and practices. The actuarial calculations presented in this report have been made on a basis consistent with our understanding of GASB Statements Number 43 and 45 for the determination of the liability for postemployment benefits other than pensions.

The actuarial data is based on the plan of benefits verified by the Town and on participant claims or premium data provided by the Town and/or vendors employed by the Town.

The actuarial computations made are for purposes of fulfilling plan accounting requirements. Determinations for purposes other than meeting financial accounting requirements may yield results significantly different than those reported here. As such, additional determinations may be needed for other purposes including determining the benefit security at termination and/or adequacy of the funding of an ongoing plan.

To the best of our knowledge, this report is complete and accurate and in our opinion represents the information necessary to comply with GASB Statements Number 43 and 45 with respect to the benefit obligations addressed. The signing actuaries are members of the Society of Actuaries, the American Academy of Actuaries and other professional actuarial organizations and meet their "General Qualification Standards for Statements of Actuarial Opinion" to render the actuarial opinion contained herein. Further, in our opinion, the assumptions as approved by the Town are reasonably related to the experience and expectations of the postemployment benefits programs.



Parker E. Elmore, ASA, EA, FCA, MAAA
President, CEO & Actuary

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

Town of Topsfield
Assuming Pay-as-you-go Funding - 3.50% discount rate
Comparison of Plan Liabilities to Prior Valuation

	<u>July 1, 2015</u>	<u>July 1, 2013</u>
I. Present Value of Future Benefits		
A. Actives	19,943,307	18,192,523
B. Retirees/Disabled	<u>5,794,528</u>	<u>4,007,238</u>
C. Total	25,737,835	22,199,761
II. Present Value of Future Normal Cost	7,388,364	7,058,390
III. Actuarial Accrued Liability (Individual Entry Age Normal)		
A. Actives	12,554,943	11,134,133
B. Retirees/Disabled	<u>5,794,528</u>	<u>4,007,238</u>
C. Total	18,349,471	15,141,371
IV. Plan Assets	342,853	130,198
V. Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	18,006,618	15,011,173
VI. Funded Ratio [IV. / III.]	1.87%	0.86%
VII. Annual Covered Payroll	N/A	N/A
VIII. UAAL as % of Covered Payroll	N/A	N/A
IX. Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	11,529,046	8,888,461
X. Number of Eligible Participants		
A. Actives	164	163
B. Retirees/Disabled	<u>82</u>	<u>68</u>
C. Total	246	231
For Fiscal Year Ending June 30, 2016	<u>June 30, 2016</u>	<u>June 30, 2014</u>
XI. Normal Cost	783,370	798,539
XII. Amortization of UAAL - 30 year flat dollar	1,174,883	1,235,630
XIII. Annual Required Contribution ('ARC') [XI. + XII.]	1,958,253	2,034,169
XIV. Interest on Net OPEB Obligation (Asset)	403,515	355,539
XV. Adjustment to Annual Required Contribution	(605,652)	(494,251)
XVI. Amortization of Actuarial (Gains) / Losses	(133,020)	(254,272)
XVII. Annual OPEB Expense [XIII. + XIV. + XV. + XVI.]	1,623,096	1,641,185
XVIII. Employer Share of Costs	417,624	301,485
XIX. Employer Payments (Withdrawals) to/from OPEB Trust	100,000	100,000
XX. Total Employer Contribution [XVIII. + XIX.]	517,624	401,485
XXI. Percentage of Annual OPEB Expense Contributed	31.9%	24.5%
XXII. Net OPEB Obligation (Asset) at Beginning of Year [IX.]	11,529,046	8,888,461
XXIII. Increase (Decrease) in Net OPEB Obligations (Asset) [XVII. - XX.]	1,105,472	1,239,700
XXIV. Net OPEB Obligation (Asset) at End of Year [XXII. + XXIII.]	12,634,518	10,128,161
XXV. Discount Rate	3.50%	4.00%

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Topsfield

Comparison of Plan Funding vs. Pay-as-you-go Funding

	<u>Pay-as-you-go Funding -</u> <u>3.50% discount rate</u>	<u>Plan Funding -7.00%</u> <u>discount rate</u>
I. Present Value of Future Benefits		
A. Actives	19,943,307	10,484,422
B. Retirees/Disabled	<u>5,794,528</u>	<u>4,134,678</u>
C. Total	25,737,835	14,619,100
II. Present Value of Future Normal Cost	7,388,364	2,860,019
III. Actuarial Accrued Liability (Individual Entry Age Normal)		
A. Actives	12,554,943	7,624,403
B. Retirees/Disabled	<u>5,794,528</u>	<u>4,134,678</u>
C. Total	18,349,471	11,759,081
IV. Plan Assets	342,853	342,853
V. Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	18,006,618	11,416,228
VI. Funded Ratio [IV. / III.]	1.87%	2.92%
VII. Annual Covered Payroll	N/A	N/A
VIII. UAAL as % of Covered Payroll	N/A	N/A
IX. Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	11,529,046	11,529,046
X. Number of Eligible Participants		
A. Actives	164	164
B. Retirees/Disabled	<u>82</u>	<u>82</u>
C. Total	246	246
For Fiscal Year Ending June 30, 2016		
XI. Normal Cost	783,370	345,441
XII. Amortization of UAAL - 30 year flat dollar	1,174,883	1,513,345
XIII. Annual Required Contribution ("ARC") [XI. + XII.]	1,958,253	1,858,786
XIV. Interest on Net OPEB Obligation (Asset)	403,515	807,033
XV. Adjustment to Annual Required Contribution	(605,652)	(868,303)
XVI. Amortization of Actuarial (Gains) / Losses	(133,020)	(687,057)
XVII. Annual OPEB Expense [XIII. + XIV. + XV. + XVI.]	1,623,096	1,110,459
XVIII. Employer Share of Costs	417,624	417,624
XIX. Employer Payments (Withdrawals) to/from OPEB Trust	100,000	100,000
XX. Total Employer Contribution [XVIII. + XIX.]	517,624	517,624
XXI. Percentage of Annual OPEB Expense Contributed	31.9%	46.6%
XXII. Net OPEB Obligation (Asset) at Beginning of Year [IX.]	11,529,046	11,529,046
XXIII. Increase (Decrease) in Net OPEB Obligations (Asset) [XVII. - XX.]	1,105,472	592,835
XXIV. Net OPEB Obligation (Asset) at End of Year [XXII. + XXIII.]	12,634,518	12,121,881
XXV. Discount Rate	3.50%	7.00%

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Topsfield

Assuming Pay-as-you-go Funding - 3.50% discount rate

Plan Liabilities as of July 1, 2015

	<u>Medical</u>	<u>Dental</u>	<u>Life</u>	<u>Excise Tax</u>	<u>Total</u>
I. Present Value of Future Benefits					
A. Actives	18,359,766	0	50,403	1,533,138	19,943,307
B. Retirees/Disabled	<u>5,652,527</u>	<u>0</u>	<u>39,313</u>	<u>102,688</u>	<u>5,794,528</u>
C. Total	24,012,293	0	89,716	1,635,826	25,737,835
II. Present Value of Future Normal Cost	6,795,094	0	16,125	577,145	7,388,364
III. Actuarial Accrued Liability (Individual Entry Age Normal)					
A. Actives	11,564,672	0	34,278	955,993	12,554,943
B. Retirees/Disabled	<u>5,652,527</u>	<u>0</u>	<u>39,313</u>	<u>102,688</u>	<u>5,794,528</u>
C. Total	17,217,199	0	73,591	1,058,681	18,349,471
IV. Plan Assets	321,830	0	1,396	19,627	342,853
V. Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	16,895,369	0	72,195	1,039,054	18,006,618
VI. Annual Covered Payroll	N/A	N/A	N/A	N/A	N/A
VII. UAAL as % of Covered Payroll	N/A	N/A	N/A	N/A	N/A
VIII. Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	10,817,634	0	46,238	665,174	11,529,046
IX. Number of Eligible Participants					
A. Actives	164	0	164	164	
B. Retirees/Disabled	<u>82</u>	<u>0</u>	<u>38</u>	<u>82</u>	
C. Total	246	0	202	246	

For Fiscal Year Ending June 30, 2016

X. Normal Cost	727,604	0	2,027	53,739	783,370
XI. Amortization of UAAL - 30 year flat dollar	1,102,386	0	4,712	67,785	1,174,883
XII. Annual Required Contribution ("ARC") [X. + XI.]	1,829,990	0	6,739	121,524	1,958,253
XIII. Interest on Net OPEB Obligation (Asset)	378,616	0	1,618	23,281	403,515
XIV. Adjustment to Annual Required Contribution	(568,281)	0	(2,428)	(34,943)	(605,652)
XV. Amortization of Actuarial (Gains) / Losses	(124,811)	0	(534)	(7,675)	(133,020)
XVI. Annual OPEB Expense [XII. + XIII. + XIV. + XV.]	1,515,514	0	5,395	102,187	1,623,096
XVII. Employer Share of Costs	413,385	0	4,239	0	417,624
XVIII. Employer Payments (Withdrawals) to/from OPEB Trust	93,829	0	401	5,770	100,000
XIX. Total Employer Contribution [XVII. + XVIII.]	507,214	0	4,640	5,770	517,624
XX. Percentage of Annual OPEB Expense Contributed	33.5%	0.0%	86.0%	5.6%	31.9%
XXI. Net OPEB Obligation (Asset) at Beginning of Year [VIII.]	10,817,634	0	46,238	665,174	11,529,046
XXII. Increase (Decrease) in Net OPEB Obligations (Asset) [XVI. - XIX.]	1,008,300	0	755	96,417	1,105,472
XXIII. Net OPEB Obligation (Asset) at End of Year [XXI. + XXII.]	11,825,934	0	46,993	761,591	12,634,518

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Topsfield
Plan Liabilities as of July 1, 2015
Assuming Pay-as-you-go Funding Method

	General Government Employees and Retirees	School Employees and Retirees	Police Employees	Fire Employees and Retirees	Water Enterprise Employees and Retirees	Total
I. Present Value of Future Benefits						
A. Actives	3,495,732	12,852,122	1,891,156	1,366,587	389,710	19,943,307
B. Retirees/Disabled	1,341,053	3,134,302	1,319,063	0	0	5,794,528
C. Total	4,836,785	15,986,424	3,158,219	1,366,587	389,710	25,737,855
II. Present Value of Future Normal Cost	1,233,353	4,944,114	734,420	315,311	161,166	7,388,364
III. Actuarial Accrued Liability (Individual Entry Age Normal)						
A. Actives	2,262,779	7,908,008	1,104,736	1,051,276	228,544	12,554,943
B. Retirees/Disabled	1,341,053	3,134,302	1,319,063	0	0	5,794,528
C. Total	3,603,832	11,042,310	2,423,799	1,051,276	228,544	18,349,471
IV. Plan Assets	68,609	204,735	46,776	18,449	4,284	342,853
V. Unfunded Actuarial Accrued Liability ("UAAAL") [III. - IV.]	3,535,223	10,837,575	2,377,023	1,032,827	224,260	18,006,618
VI. Annual Covered Payroll	N/A	N/A	N/A	N/A	N/A	N/A
VII. UAAAL as % of Covered Payroll	N/A	N/A	N/A	N/A	N/A	N/A
VIII. Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	2,259,277	6,951,891	1,526,055	661,784	130,039	11,529,046
IX. Number of Eligible Participants						
A. Actives	34	111	11	5	3	164
B. Retirees/Disabled	25	43	14	0	0	82
C. Total	59	154	25	5	3	246
For Fiscal Year Ending June 30, 2016						
X. Normal Cost	141,596	534,083	68,587	30,999	8,105	783,370
XI. Amortization of UAAAL - 30 year flat dollar	217,920	716,606	157,308	68,217	14,832	1,174,883
XII. Annual Required Contribution (ARC) [X. + XI.]	359,516	1,250,689	225,895	99,216	22,937	1,958,253
XIII. Interest on Net OPEB Obligation (Asset)	79,075	243,316	55,411	23,162	4,551	403,515
XIV. Adjustment to Annual Required Contribution	(118,065)	(365,202)	(89,167)	(34,766)	(6,831)	(605,032)
XV. Amortization of Actuarial (Gains) / Losses	(36,123)	(80,045)	(17,571)	(7,621)	(1,657)	(133,020)
XVI. Annual OPEB Expense [XII. + XIII. + XIV. + XV.]	293,782	1,048,755	181,568	79,991	19,000	1,623,096
XVII. Employer Share of Costs	127,280	196,385	88,773	2,169	3,017	417,624
XVIII. Employer Payments (Withdrawals) to/from OPEB Trust	19,905	60,222	13,373	5,800	0	100,000
XIX. Total Employer Contribution [XVII. + XVIII.]	147,185	257,307	102,146	7,969	3,017	517,624
XX. Percentage of Annual OPEB Expense Contributed	43.3%	18.7%	48.9%	2.7%	15.9%	25.7%
XXI. Net OPEB Obligation (Asset) at Beginning of Year [VIII.]	2,259,277	6,951,891	1,526,055	661,784	130,039	11,529,046
XXII. Increase (Decrease) in Net OPEB Obligations (Assets) [XVII. - XIX.]	146,597	791,448	79,422	72,022	15,983	1,105,472
XXIII. Net OPEB Obligation (Asset) at End of Year [XXI. + XXII.]	2,405,874	7,743,339	1,605,477	733,806	146,022	12,634,518

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Topsfield

Detail of Plan Liabilities by Group and Dependency Status

Assuming Pay-as-you-go Funding - 3.50% discount rate

Plan Liabilities as of July 1, 2015

	<u>Present Value of Future Benefits</u>	<u>Actuarial Accrued Liability (Individual Entry Age Normal)</u>	<u>Normal Cost</u>
Actives			
Under Age 65			
A. Participants	5,001,124	3,061,435	190,652
B. Spouses	<u>1,939,776</u>	<u>1,261,593</u>	<u>68,834</u>
C. Total	6,940,900	4,323,028	259,486
Age 65 and Over			
A. Participants	7,954,041	5,048,910	319,203
B. Spouses	<u>5,048,366</u>	<u>3,183,005</u>	<u>204,681</u>
C. Total	13,002,407	8,231,915	523,884
Actives Total			
A. Participants	12,955,165	8,110,345	509,855
B. Spouses	<u>6,988,142</u>	<u>4,444,598</u>	<u>273,515</u>
C. Total	19,943,307	12,554,943	783,370
Retirees/Disabled			
Under Age 65			
A. Participants	611,982	611,982	0
B. Spouses	<u>267,357</u>	<u>267,357</u>	<u>0</u>
C. Total	879,339	879,339	0
Age 65 and Over			
A. Participants	3,369,688	3,369,688	0
B. Spouses	<u>1,545,501</u>	<u>1,545,501</u>	<u>0</u>
C. Total	4,915,189	4,915,189	0
Retirees/Disabled Total			
A. Participants	3,981,670	3,981,670	0
B. Spouses	<u>1,812,858</u>	<u>1,812,858</u>	<u>0</u>
C. Total	5,794,528	5,794,528	0
Total Population			
A. Participants	16,936,835	12,092,015	509,855
B. Spouses	<u>8,801,000</u>	<u>6,257,456</u>	<u>273,515</u>
C. Total	25,737,835	18,349,471	783,370

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Topsfield

Assuming Funding over 30 years at 7.00% discount rate

Plan Liabilities as of July 1, 2015

	<u>Medical</u>	<u>Dental</u>	<u>Life</u>	<u>Excise Tax</u>	<u>Total</u>
I. Present Value of Future Benefits					
A. Actives	9,044,774	0	20,077	1,419,571	10,484,422
B. Retirees/Disabled	<u>4,015,978</u>	<u>0</u>	<u>23,620</u>	<u>95,080</u>	<u>4,134,678</u>
C. Total	13,060,752	0	43,697	1,514,651	14,619,100
II. Present Value of Future Normal Cost	2,321,057	0	4,570	534,392	2,860,019
III. Actuarial Accrued Liability (Individual Entry Age Normal)					
A. Actives	6,723,717	0	15,507	885,179	7,624,403
B. Retirees/Disabled	<u>4,015,978</u>	<u>0</u>	<u>23,620</u>	<u>95,080</u>	<u>4,134,678</u>
C. Total	10,739,695	0	39,127	980,259	11,759,081
IV. Plan Assets	313,131	0	1,141	28,581	342,853
V. Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	10,426,564	0	37,986	951,678	11,416,228
VI. Annual Covered Payroll	N/A	N/A	N/A	N/A	N/A
VII. UAAL as % of Covered Payroll	N/A	N/A	N/A	N/A	N/A
VIII. Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	10,817,634	0	46,238	665,174	11,529,046
IX. Number of Eligible Participants					
A. Actives	164	0	164	164	
B. Retirees/Disabled	<u>82</u>	<u>0</u>	<u>38</u>	<u>82</u>	
C. Total	246	0	202	246	
For Fiscal Year Ending June 30, 2016					
X. Normal Cost	294,979	0	703	49,759	345,441
XI. Amortization of UAAL - 30 year flat dollar	1,372,635	0	5,401	135,309	1,513,345
XII. Annual Required Contribution ("ARC") [X. + XI.]	1,667,614	0	6,104	185,068	1,858,786
XIII. Interest on Net OPEB Obligation (Asset)	757,234	0	3,237	46,562	807,033
XIV. Adjustment to Annual Required Contribution	(814,724)	0	(3,482)	(50,097)	(868,303)
XV. Amortization of Actuarial (Gains) / Losses	(627,497)	0	(2,286)	(57,274)	(687,057)
XVI. Annual OPEB Expense [XII. + XIII. + XIV. + XV.]	982,627	0	3,573	124,259	1,110,459
XVII. Employer Share of Costs	413,385	0	4,239	0	417,624
XVIII. Employer Payments (Withdrawals) to/from OPEB Trust	91,331	0	333	8,336	100,000
XIX. Total Employer Contribution [XVII. + XVIII.]	504,716	0	4,572	8,336	517,624
XX. Percentage of Annual OPEB Expense Contributed	51.4%	0.0%	128.0%	6.7%	46.6%
XXI. Net OPEB Obligation (Asset) at Beginning of Year [VIII.]	10,817,634	0	46,238	665,174	11,529,046
XXII. Increase (Decrease) in Net OPEB Obligations (Asset) [XVI. - XIX.]	477,911	0	(999)	115,923	592,835
XXIII. Net OPEB Obligation (Asset) at End of Year [XXI. + XXII.]	11,295,545	0	45,239	781,097	12,121,881

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Topsfield
Plan Liabilities as of July 1, 2015
Assuming Funding over 30 years at 7.00% discount rate

	General Government Employees and Retirees	School Employees and Retirees	Police Employees	Fire Employees and Retirees	Water Enterprise Employees and Retirees	Total
I. Present Value of Future Benefits						
A. Actives	1,837,746	6,756,506	966,865	718,430	204,875	10,484,422
B. Retirees/Disabled	256,283	2,236,477	291,216	0	0	4,134,628
C. Total	2,794,731	8,992,983	1,908,081	718,430	204,875	14,619,100
II. Present Value of Future Normal Cost	477,429	1,913,855	284,292	122,056	62,387	2,860,019
III. Actuarial Accrued Liability (Individual Entry Age Normal)						
A. Actives	1,373,904	4,802,399	670,887	638,422	138,791	7,624,403
B. Retirees/Disabled	256,283	2,236,477	291,216	0	0	4,134,628
C. Total	2,330,389	7,038,876	1,612,103	638,422	138,791	11,759,081
IV. Plan Assets	68,609	204,735	46,776	18,449	4,284	342,853
V. Unfunded Actuarial Accrued Liability ("UAAAL") [III. - IV.]	2,262,280	6,834,141	1,565,327	619,973	134,507	11,416,228
VI. Annual Covered Payroll	N/A	N/A	N/A	N/A	N/A	N/A
VII. UAAAL as % of Covered Payroll	N/A	N/A	N/A	N/A	N/A	N/A
VIII. Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	2,259,277	6,951,891	1,526,055	661,784	130,039	11,529,046
IX. Number of Eligible Participants						
A. Actives	34	111	11	5	3	164
B. Retirees/Disabled	25	43	14	0	0	82
C. Total	59	154	25	5	3	246
For Fiscal Year Ending June 30, 2016						
X. Normal Cost	62,439	235,313	30,245	13,670	3,574	345,441
XI. Amortization of UAAAL - 30 year flat dollar	280,698	923,047	202,626	87,869	19,105	1,513,345
XII. Annual Required Contribution (ARC) [X. + XI.]	343,137	1,158,360	232,871	101,539	22,679	1,858,786
XIII. Interest on Net OPEB Obligation (Asset)	158,151	486,634	106,822	46,324	9,102	807,033
XIV. Adjustment to Annual Required Contribution	(170,156)	(523,378)	(114,933)	(49,845)	(9,793)	(868,303)
XV. Amortization of Actuarial (Gains) / Losses	4134,227	(413,453)	(8,755)	(39,363)	(8,559)	(4,987,057)
XVI. Annual OPEB Expense [XII. + XIII. + XIV. + XV.]	196,205	708,163	134,005	58,657	13,429	1,110,459
XVII. Employer Share of Costs	127,280	196,385	88,773	2,169	3,017	417,624
XVIII. Employer Payments (Withdrawals) to/from OPEB Trust	21,003	59,859	13,709	5,429	0	100,000
XIX. Total Employer Contribution [XVII. + XVIII.]	148,283	256,244	102,482	7,598	3,017	517,624
XX. Percentage of Annual OPEB Expense Contributed	75.6%	36.2%	76.5%	13.0%	22.5%	46.6%
XXI. Net OPEB Obligation (Asset) at Beginning of Year [VIII.]	2,259,277	6,951,891	1,526,055	661,784	130,039	11,529,046
XXII. Increase (Decrease) in Net OPEB Obligations (Asset) [XVI. - XIX.]	47,922	451,919	31,523	51,059	10,412	592,835
XXIII. Net OPEB Obligation (Asset) at End of Year [XXI. + XXII.]	2,307,199	7,403,810	1,557,578	712,843	140,451	12,121,881

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 Net OPEB Obligation. If you decide to fully fund the OPEB obligation this will appear in the financial statement as a Net OPEB Asset. 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. **GASB 45 – How we got here:**

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, 2012. GASB 45 is designed to recognize the Other Postemployment Benefits ("OPEB") earned by employees throughout their working career vs. when they are actually paid in retirement – accrual accounting vs. "pay-as-you-go" accounting. When GASB 45 was adopted, there was an Unfunded Actuarial Accrued Liability ("UAAL") or "past service liability" which reflected all benefits earned until the date of such adoption. To smooth the impact of transitioning to GASB 45 on your financial statement, the UAAL was amortized over a 30 year period using a flat dollar amortization. Additionally, each eligible active employee earns benefits each year representing benefits to be paid in retirement or a "Normal Cost". These amounts are reflected in your financial statement each year so that OPEB benefits for an eligible employee shall be fully charged to the financial statement when that eligible employee terminates employment.

2. **Summary of Results:**

During the fiscal year ending June 30, 2016, the Plan saw an experience gain of \$3,321,889 or 16.17%. Plan experience was more favorable than expected. The actuarial experience gain is amortized into the annual OPEB costs over a 30-year period. The net impact of plan experience is a decrease in the annual OPEB cost. Please note there was a change in methodology to include spouses of retirees in the count.

Commentary on Plan Experience and Contribution Amounts
(continued)

3.

Balance Sheet Items

	July 1, 2015	July 1, 2013
Actuarial Accrued Liability	\$18,349,471	\$15,141,371
Plan Assets	\$342,853	\$130,198
Unfunded Actuarial Accrued Liability	\$18,006,618	\$15,011,173
Funded %	1.87%	0.86%
Net OPEB Obligation	\$11,529,046	\$8,888,461

4.

Income Statement Items

	June 30, 2016	June 30, 2014
Normal Cost	\$783,370	\$798,539
Amortization of UAAL	\$1,174,883	\$1,235,630
Interest on Net OPEB Obligation	\$403,515	\$355,539
Adjustment to Annual Required Contribution	\$(605,652)	\$(494,251)
Amortization of Actuarial (Gains)/Losses	\$(133,020)	\$(254,272)
Annual OPEB Expense	\$1,623,096	\$1,641,185
Employer Share of Costs	\$417,624	\$301,485
Employer Contributions/(Withdrawals) to/from OPEB Trust	\$100,000	\$100,000
Total Employer Contribution	\$517,624	\$401,485
Discount Rate	3.50%	4.00%

Commentary on Plan Experience and Contribution Amounts
(continued)

5. **GASB 75 – Where we’re going:**

The Governmental Accounting Standards Board (“GASB”) issued GASB 75 *“Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions”* on June 2, 2015 which will become effective for your 2018 fiscal year. This standard largely mirrors the GASB 68 standard for pension plans. The new standards require increased disclosures and will tie interest rates used in the valuation to the plan’s underlying investment and funding policy. This may increase the pressure on many entities to begin funding their OPEB liabilities. For more information, please review our white papers at www.GASB75.com or on our website.

SECTION II

SUMMARY OF PLAN PROVISIONS

<u>Effective Date</u>	July 1, 2011; GASB 45 is adopted.
<u>Plan Year</u>	July 1 through June 30.
<u>Eligibility</u>	An employee hired before April 2, 2012 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. Those hired on or after April 2, 2012 shall be eligible to retire upon attainment of age 60 with 10 years of creditable service.
<u>Creditable Service</u>	Elapsed time from date of hire to termination of service date.
<u>Participant Contributions</u>	Premiums for Medical insurance vary by plan selected ranging from 33% to 40% of underlying gross premiums. Employees will pay 33% of premiums for Life Insurance in retirement.
<u>Benefits Offered</u>	Comprehensive Medical Insurance offered through Blue Cross Blue Shield of Massachusetts as well as Group Term Life Insurance.
<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 Individual Entry Age Normal Actuarial Cost Method. Under this method, the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement, each individual's annual normal cost is a level dollar amount. 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 as of the valuation date.

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 generationally with scale BB and a base year 2009 for males and females. Disabled employees were assumed to follow the RP-2000 Mortality Table projected generationally set forward 2 years for males and females.

Discount Rate

3.50% 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>Age</u>	<u>0-4 Years of Service (Males)</u>	<u>0-4 Years of Service (Females)</u>	<u>5-9 Years of Service (Males)</u>	<u>5-9 Years of Service (Females)</u>	<u>10+ Years of Service (Males)</u>	<u>10+ Years of Service (Females)</u>
20	27.00%	27.00%	0.00%	0.00%	0.00%	0.00%
30	23.00%	23.00%	10.00%	10.00%	5.60%	5.60%
40	16.00%	16.00%	8.00%	8.00%	4.00%	4.00%
50	18.00%	18.00%	6.00%	6.00%	3.60%	3.60%
60	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

<u>Service</u>	<u>Public Safety Male</u>	<u>Public Safety Female</u>
0	9.00%	9.00%
5	6.00%	6.00%
10	3.50%	3.50%
15	2.00%	2.00%
20	1.50%	1.50%
25	1.50%	1.50%
30	1.50%	1.50%

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	3.00%	3.00%	2.00%
51	3.00%	3.00%	2.00%
52	3.00%	3.00%	2.00%
53	3.00%	3.00%	5.00%
54	3.00%	3.50%	7.50%
55	3.50%	5.00%	15.00%
56	3.50%	5.00%	10.00%
57	4.00%	5.50%	10.00%
58	5.00%	6.00%	10.00%
59	6.00%	6.50%	15.00%
60	9.00%	7.50%	20.00%
61	11.00%	10.00%	20.00%
62	15.00%	15.00%	25.00%
63	15.00%	15.00%	25.00%
64	16.00%	15.00%	30.00%
65	20.00%	20.00%	100.00%
66	20.00%	20.00%	100.00%
67	20.00%	20.00%	100.00%
68	20.00%	20.00%	100.00%
69	20.00%	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)

Retirement Rates for teachers

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

<u>Age</u>	<u>Male Teachers</u>	<u>Female Teachers</u>
45	0.00%	0.00%
46	0.00%	0.00%
47	0.00%	0.00%
48	0.00%	0.00%
49	0.00%	0.00%
50	2.00%	1.50%
51	2.00%	1.50%
52	2.00%	1.50%
53	2.00%	1.50%
54	2.00%	2.00%
55	6.00%	5.00%
56	20.00%	15.00%
57	40.00%	35.00%
58	50.00%	35.00%
59	50.00%	35.00%
60	40.00%	35.00%
61	40.00%	35.00%
62	35.00%	35.00%
63	35.00%	35.00%
64	35.00%	35.00%
65	35.00%	35.00%
66	40.00%	35.00%
67	40.00%	30.00%
68	40.00%	30.00%
69	40.00%	30.00%
70	100.00%	100.00%
71	100.00%	100.00%
72	100.00%	100.00%

SECTION III**ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS**
(continued)**C. ACTUARIAL ASSUMPTIONS (continued)****Disability rates**

It was assumed that the following percentage of eligible employees would become permanently disabled each year:

<u>Age</u>	<u>Non Public Safety</u>	<u>Public Safety</u>
20	0.01%	0.20%
25	0.01%	0.21%
30	0.01%	0.21%
35	0.04%	0.46%
40	0.07%	0.71%
45	0.10%	0.91%
50	0.13%	1.10%
55	0.13%	0.95%
60	0.12%	0.80%

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 2013	6.0%	5.5%
FY 2014	5.0%	5.0%
FY 2015	5.0%	5.0%
FY 2016	5.0%	5.0%
FY 2017	5.0%	5.0%
FY 2018	5.0%	5.0%
FY 2019	5.0%	5.0%
FY 2020+	5.0%	5.0%

Participation Rate

It was assumed that 80% of employees eligible to receive retirement benefits would enroll in the retiree medical 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 male participants and 70% of female participants who elect retiree healthcare coverage for themselves would also elect coverage for a spouse upon retirement. It was further assumed that a male spouse is three years older than a female spouse and same sex spouses are assumed to be the same age. 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.

Open Group Forecast

It was assumed for projecting plan liabilities in future years that the active population would remain unchanged and that those who terminate employment or retire will be replaced with new employees with the demographics below:

Open Group Forecast Population Demographics

<u>Age</u>	<u>Male</u>	<u>Female</u>
20	8.0%	5.0%
30	7.0%	14.0%
40	20.0%	19.0%
50	10.0%	10.0%
60	<u>3.0%</u>	<u>4.0%</u>
Total	48.0%	52.0%

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

	<u>Number of Participants</u>			
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>	<u>Total</u>
HMO Blue New England	40		57	97
Blue Care Elect PPO	4		2	6
Managed Blue Senior	2	6		8
Medex	<u>13</u>	<u>15</u>		<u>28</u>
Total	59	21	59	139

	<u>Per Contract Costs (monthly) - FY 2017</u>		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
HMO Blue New England	885.79	0.00	2,387.00
Blue Care Elect PPO	1,285.75	0.00	3,322.70
Managed Blue Senior	274.70	549.40	
Medex	307.30	614.60	

Gross Expected FY 2017 Incurred Premiums	2,404,064
Adjustment to reflect children's claims	<u>(438,976)</u>
Total Expected FY 2017 Incurred Premiums (adults only)	1,965,088

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

	<u>Employer</u> <u>Primary</u>	<u>Medicare</u> <u>Primary</u>
Age 65	14,123	3,592
Average Age	13,568	3,592

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

1,965,088 Active and Retired Claims (No Children)

ALL ACTIVE EMPLOYEES AND SPOUSES

Age Bracket	Female Aging Factor	Male Aging Factor	Aged (F) Average Claims	Aged (M) Average Claims	Age Related Claims
24 & Under	1.312	0.549	8,664	3,626	0
25 to 29	1.312	0.591	8,664	3,903	55,887
30 to 34	1.312	0.712	8,664	4,702	44,800
35 to 39	1.312	0.850	8,664	5,613	51,495
40 to 44	1.312	1.000	8,664	6,604	128,324
45 to 49	1.456	1.193	9,615	7,879	157,446
50 to 54	1.599	1.441	10,560	9,516	260,988
55 to 59	1.740	1.753	11,491	11,577	311,547
60 to 64	1.968	2.102	12,997	13,882	242,796
65 to 69	2.168	2.316	14,317	15,295	119,426
70 & Over	2.396	2.557	15,823	16,886	48,532
Total					1,421,241

ALL RETIREES AND SPOUSES - NOT MEDICARE ELIGIBLE

Age Bracket	Female Aging Factor	Male Aging Factor	Aged (F) Average Claims	Aged (M) Average Claims	Age Related Claims
44 & Under	1.312	1.000	8,664	6,604	0
45 to 49	1.456	1.193	9,615	7,879	0
50 to 54	1.599	1.441	10,560	9,516	0
55 to 59	1.740	1.753	11,491	11,577	22,982
60 to 64	1.968	2.102	12,997	13,882	267,020
65 to 69	2.168	2.316	14,317	15,295	14,317
70 to 74	2.396	2.557	15,823	16,886	16,886
75 to 79	2.593	2.769	17,124	18,286	0
80 to 84	2.724	2.910	17,989	19,218	17,989
85 to 89	2.864	3.059	18,914	20,202	0
90 & Over	3.010	3.215	19,878	21,232	0
Total					339,194

ALL RETIREES AND SPOUSES - MEDICARE ELIGIBLE

Age Bracket	Female Aging Factor	Male Aging Factor	Aged (F) Average Claims	Aged (M) Average Claims	Age Related Claims
65 to 69	2.168	2.316	3,592	3,592	71,840
70 to 74	2.396	2.557	3,592	3,592	82,616
75 to 79	2.593	2.769	3,592	3,592	28,736
80 to 84	2.724	2.910	3,592	3,592	17,960
85 to 89	2.864	3.059	3,592	3,592	3,592
90 & Over	3.010	3.215	3,592	3,592	0
Total					204,744
Grand Totals					1,965,179

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS
(continued)

E. DEVELOPMENT OF REPRESENTATIVE DENTAL PER CAPITA CLAIMS COSTS

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

	Per Contract Costs (monthly) - FY 2017		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
Dental Plan	N/A		N/A
FY 2017 Expected Per Person Rate		N/A	

EXHIBIT A**Financial Statement Disclosure**
(As of July 1, 2015)

The GASB Standards for accounting and financial reporting for postemployment benefits other than pensions require 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 Blue Shield of Massachusetts.
- b. Administrator: Town of Topsfield
- c. Eligibility: An employee hired before April 2, 2012 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. Those hired on or after April 2, 2012 shall be eligible to retire upon attainment of age 60 with 10 years of creditable service.
- d. Cost Sharing: Premiums for Medical insurance vary by plan selected ranging from 33% to 40% of underlying gross premiums.

2. A DESCRIPTION OF THE DENTAL INSURANCE PROGRAM:

- a. Plan Type: Not offered
- b. Administrator: N/A
- c. Eligibility: N/A
- d. Cost sharing: N/A

3. A DESCRIPTION OF THE RETIREE LIFE INSURANCE PROGRAM:

- a. Plan Type: Group Term Life Insurance - \$2,500
- b. Administrator: Town of Topsfield
- c. Eligibility: Same as above
- d. Cost sharing: Employees will pay 33% of premiums in retirement.

EXHIBIT A

Financial Statement Disclosure
(As of July 1, 2015)
(continued)

4. RETIREE MEDICAL AND LIFE INSURANCE CONTRIBUTIONS:

Group	Individual	Family
Medical	Premiums for Medical insurance vary by plan selected ranging from 33% to 40% of underlying gross premiums.	Premiums for Medical insurance vary by plan selected ranging from 33% to 40% of underlying gross premiums.
Dental	N/A	N/A
Life	33%	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 \$100,000 beyond the pay-as-you-go. For the 2016 fiscal year, total Town premiums plus implicit costs for the retiree medical program are \$417,624. The Town is also projected to make a contribution to an OPEB Trust of \$100,000 for the 2016 fiscal year for a total contribution of \$517,624 .

EXHIBIT A

Financial Statement Disclosure (As of July 1, 2015) (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	\$1,958,253
Interest on net OPEB Obligation (Asset)	\$403,515
Adjustment to annual required contribution	(\$605,652)
Amortization of Actuarial (Gains) / Losses	(\$133,020)
Annual OPEB expense	\$1,623,096
Contributions made to pay benefits	\$417,624
Contributions made to OPEB Trust	\$100,000
Increase (Decrease) in net OPEB Obligation (Asset)	\$1,105,472
Net OPEB Obligation (Asset) – beginning of year	\$11,529,046
Net OPEB Obligation (Asset) – end of year	\$12,634,518

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2015)

(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 2016 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 (Decrease) in Net OPEB Obligation (Asset)	Net OPEB Obligation (Asset)
06/30/2018 (est.)	\$1,756,096	\$601,834	34.3%	\$1,154,262	\$14,908,783
06/30/2017 (est.)	\$1,691,924	\$571,922	33.8%	\$1,120,002	\$13,754,521
06/30/2016	\$1,623,097	\$517,624	31.9%	\$1,105,473	\$12,634,519
06/30/2015	\$1,711,866	\$310,981	18.2%	\$1,400,885	\$11,529,046
06/30/2014	\$1,641,185	\$401,485	24.5%	\$1,239,700	\$10,128,161
06/30/2013	\$2,699,000	\$596,000	22.1%	\$2,103,000	\$8,888,461

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
07/01/2017 (est.)	\$576,281	\$19,678,159	\$19,101,878	2.9%	N/A	N/A
07/01/2016 (est.)	\$458,499	\$18,976,627	\$18,518,128	2.4%	N/A	N/A
07/01/2015	\$342,853	\$18,349,471	\$18,006,618	1.9%	N/A	N/A
07/01/2014	\$238,157	\$15,464,384	\$15,226,227	1.5%	N/A	N/A
07/01/2013	\$130,198	\$15,141,371	\$15,011,173	0.9%	N/A	N/A
07/01/2012	\$0	\$24,121,000	\$24,121,000	0.0%	\$8,092,000	298.1%

EXHIBIT A

Financial Statement Disclosure
(As of July 1, 2015)
(continued)

	Fiscal Year Ending June 30, 2016				
	General Government Employees and Retirees	Schools Employees and Retirees	Police Employees and Retirees	Fire Employees and Retirees	Water Enterprise Employees and Retirees
					Total
OPEB Obligation (Asset) at beginning of year	2,259,277	6,951,891	1,526,035	661,784	11,529,046
Annual Required Contribution	359,516	1,250,689	225,895	99,216	1,935,315
Interest on Net OPEB Obligation	79,075	243,316	53,411	23,162	405,964
Adjustment to the ARC	(118,686)	(363,202)	(80,107)	(34,766)	(606,761)
Amortization of Actuarial (Gains)/Losses	(28,123)	(80,046)	(17,571)	(7,621)	(133,367)
Annual OPEB Cost	293,782	1,048,755	181,568	79,991	1,623,096
Expected Employer Contribution	127,280	196,385	88,773	2,169	417,624
Contribution (Withdrawal) to/from Trust Fund over 30 Years	19,905	60,922	13,373	5,800	100,000
Total Expected Employer Payments	147,185	257,307	102,146	7,969	517,624
Increase (Decrease) in OPEB Obligation (Asset)	146,597	791,448	79,422	72,022	1,105,472
OPEB Obligation (Asset) at end of year	2,405,874	7,743,339	1,605,477	733,806	12,634,518
AAL as of July 1, 2015	3,603,542	11,042,310	2,423,799	1,051,276	18,349,471
Plan Assets as of July 1, 2015	68,609	204,735	46,776	18,449	342,853
Unfunded Actuarial Liability as of July 1, 2015	3,534,933	10,837,575	2,377,023	1,032,827	18,006,618

	Fiscal Year Ending June 30, 2017				
	General Government Employees and Retirees	Schools Employees and Retirees	Police Employees and Retirees	Fire Employees and Retirees	Water Enterprise Employees and Retirees
					Total
OPEB Obligation (Asset) at beginning of year	2,405,874	7,743,339	1,605,477	733,806	12,634,518
Annual Required Contribution	365,048	1,269,935	229,371	100,743	1,988,387
Interest on Net OPEB Obligation	86,658	266,648	58,533	25,383	442,299
Adjustment to the ARC	(130,066)	(400,219)	(87,854)	(38,100)	(663,725)
Amortization of Actuarial (Gains)/Losses	(15,400)	(43,150)	(10,783)	(4,643)	(74,976)
Annual OPEB Cost	306,240	1,093,228	189,267	83,383	1,691,924
Expected Employer Contribution	142,720	223,376	99,488	3,005	471,922
Contribution (Withdrawal) to/from Trust Fund over 30 Years	19,905	60,922	13,373	5,800	100,000
Total Expected Employer Payments	162,625	284,298	112,861	8,805	571,922
Increase (Decrease) in OPEB Obligation (Asset)	143,615	808,930	76,406	74,578	1,120,002
OPEB Obligation (Asset) at end of year	2,549,489	8,552,269	1,681,883	808,384	13,754,520
AAL as of July 1, 2016	3,726,705	11,419,719	2,506,641	1,087,207	18,976,627
Plan Assets as of July 1, 2016	65,037	273,880	62,018	24,995	342,853
Unfunded Actuarial Liability as of July 1, 2016	3,661,668	11,145,839	2,444,623	1,062,212	18,518,128

EXHIBIT A**Financial Statement Disclosure**
(As of July 1, 2015)
(continued)**7. FUNDED STATUS AND FUNDING PROGRESS**

As of July 1, 2015, the most recent valuation date, the plan was 1.87% funded. The actuarial liability for benefits was \$18,349,471, and the actuarial value of assets was \$342,853, resulting in an unfunded actuarial accrued liability (UAAL) of \$18,006,618. 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 \$23,621,988 or by 28.7% and the corresponding Normal Cost would increase to \$1,134,900 or by 44.9%. 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 \$14,239,179 or by 22.4% and the corresponding Normal Cost would decrease to \$529,073 or by 32.5%.

EXHIBIT A

Financial Statement Disclosure (As of July 1, 2015) (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:	Individual Entry Age Normal
Investment Rate of Return:	3.50% per annum (previously 4.00%)
Healthcare Trend Rates	

<u>Year</u>	<u>Medical</u>	<u>Dental</u>
FY 2013	6.0%	5.5%
FY 2014	5.0%	5.0%
FY 2015	5.0%	5.0%
FY 2016	5.0%	5.0%
FY 2017	5.0%	5.0%
FY 2018	5.0%	5.0%
FY 2019	5.0%	5.0%
FY 2020+	5.0%	5.0%

General Inflation Assumption:	2.75% per annum
Annual Compensation Increases:	3.00% per annum
Actuarial Value of Assets:	Market Value
Amortization of UAAL:	Level dollar amortization over 30 years
Remaining Amortization Period:	26 years at July 1, 2015

EXHIBIT A

Financial Statement Disclosure (As of July 1, 2015) (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	15,141,371
2. Actuarial Value of Assets at prior valuation date	<u>130,198</u>
3. Unfunded Actuarial Accrued Liability at prior valuation date [1. - 2.]	15,011,173
4. Normal Cost for prior periods	1,597,078
5. Employer Contributions for prior periods	(712,466)
6. Interest to current valuation date	<u>1,291,528</u>
7. Expected Unfunded Actuarial Accrued Liability before assumption changes [3. + 4. + 5. + 6.]	17,187,313

Net Actuarial (Gain) / Loss due to assumption changes

8. Actuarial Cost Method Change	1,232,917
9. Interest Rate Change	1,158,268
10. Mortality Assumption Change	<u>1,750,009</u>
11. Expected Unfunded Actuarial Accrued Liability including assumption changes [7. + 8. + 9. + 10.]	21,328,507

Actual Unfunded Actuarial Liability

12. Actuarial Accrued Liability at current valuation date	18,349,471
13. Actuarial Value of Assets at current valuation date	<u>342,853</u>
14. Unfunded Actuarial Accrued Liability at current valuation date [12. - 13.]	18,006,618

Net Actuarial (Gain) / Loss from Plan Experience [14. - 11.]

15. Unfunded Actuarial Accrued Liability at current valuation date [14.]	18,006,618
16. Remaining Initial Unfunded to be amortized	<u>20,538,741</u>
17. Actuarial (Gain) / Loss to be amortized: [15. - 16.]	(2,532,123)

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2015)

(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, 2011	GASB 45 Liability	22,221,197	30	20,538,741	26	1,174,883
July 1, 2015	Cumulative (Gain) / Loss	(2,532,123)	30	(2,532,123)	30	(133,020)
July 1, 2015	Adjustment to ARC	(11,529,046)	30	(11,529,046)	30	(605,652)

11. Recognition of OPEB trust assets

The State of Massachusetts has recently passed legislation allowing municipal entities to establish a trust for Other 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 Topsfield has established an irrevocable trust for the purposes of prefunding liabilities under GASB 45.

EXHIBIT A**Financial Statement Disclosure****(As of July 1, 2015)****(continued)****12. Impact of Patient Protection and Affordable Care Act ("PPACA") Excise Tax**

Under the Patient Protection and Affordable Care Act ("PPACA"), an excise tax will be imposed for tax years beginning after December 31, 2019 (formerly December 31, 2017, but amended by Consolidated Appropriations Act) for high cost employer sponsored health coverage. The law specifies a 40% excise tax, to be paid by the provider of such coverage, of the excess value beyond a basic dollar amount plus an additional "kicker" for qualified retirees or those engaged in a high risk profession. The threshold amounts for 2018 (original legislation) were \$10,200 for single coverage and \$27,500 for family coverage and a "kicker" amount of \$1,650 for single coverage and \$3,450 for family coverage. These threshold and kicker amounts are expected to be updated because of the Consolidated Appropriations Act before the tax takes effect in 2020, but currently the updated amounts have not been released.

The excise tax liability will vary significantly over time as it is highly leveraged with the basic threshold amount increased with general CPI and medical costs increasing with medical trend (generally higher). For purposes of the fiscal year ending June 30, 2016, the AAL for the excise tax is \$1,058,681 and the increase in annual OPEB Cost is \$102,187. Given your premiums through the 2017 fiscal year and the excise tax threshold, your average single premiums are \$1,023 below the excise tax threshold and your average family premiums are \$1,525 above the excise tax threshold. As more regulatory guidance becomes available, the calculation of the excise tax liability will evolve.

EXHIBIT A**Financial Statement Disclosure****(As of July 1, 2015)****(continued)****13. Impact of Section 9A 1/2 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 Topsfield nor have we attempted to value the impact of prior Town of Topsfield employees currently working at other governmental entities in the State of Massachusetts.

EXHIBIT B

Reconciliation of Plan Participation (As of July 1, 2015)

ACTIVE EMPLOYEES

	<u>July 1, 2015</u>	<u>July 1, 2013</u>
A. Average Age at Hire	37.49	37.08
B. Average Service	10.00	10.17
C. Average Current Age	47.49	47.25

RETIRED EMPLOYEES & DEPENDENTS

	<u>July 1, 2015</u>	<u>July 1, 2013</u>
I. Retirees		
A. Under Age 65	17	17
B. Age 65 & Over	<u>35</u>	<u>29</u>
C. Total Retirees	52	46
II. Dependents of Retirees		
A. Under Age 65	7	4
B. Age 65 & Over	<u>23</u>	<u>18</u>
C. Total Retirees	30	22
III. Retirees & Dependents		
A. Under Age 65	24	21
B. Age 65 & Over	<u>58</u>	<u>47</u>
C. Total Retirees	82	68

EXHIBIT C

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

Total Medical & Life Insurance - Pay-as-you-go Funding - 3.50% discount rate											
Fiscal Year Ending	Valuation Date	I. Total Actuarial Accrued Liability ("AAL") as of Valuation Date	II. Plan Assets as of Valuation Date	III. Unfunded Accrued Actuarial Liability ("UAAL") [I. - II.]	IV. Funded Ratio [II. / I.]	V. OPEB Obligation (Asset) as of Fiscal year end	VI. Normal Cost	VII. Expected Annual OPEB Expense	VII. Employer Share of Premiums / Claims	IX. Excess Employer Payments (beyond claims)	X. Total Employer Contribution [VIII. + IX.]
June 30, 2016	July 1, 2015	18,349,471	342,853	18,006,618	1.87%	11,529,046	783,370	1,623,097	417,624	100,000	517,624
June 30, 2017	July 1, 2016	18,976,627	458,499	18,518,128	2.42%	12,634,519	813,504	1,691,924	471,922	100,000	571,922
June 30, 2018	July 1, 2017	19,678,159	576,281	19,101,878	2.93%	13,754,521	838,477	1,756,096	501,834	100,000	601,834
June 30, 2019	July 1, 2018	20,392,246	698,186	19,694,060	3.42%	14,908,783	859,299	1,817,317	573,501	100,000	673,501
June 30, 2020	July 1, 2019	21,071,960	824,357	20,247,603	3.91%	16,052,599	880,448	1,878,499	637,877	100,000	737,877
June 30, 2021	July 1, 2020	21,725,305	954,944	20,770,361	4.40%	17,193,221	905,180	1,943,154	698,913	100,000	798,913
June 30, 2022	July 1, 2021	22,699,177	1,090,102	21,609,075	4.80%	18,337,462	950,640	2,028,662	738,834	100,000	838,834
June 30, 2023	July 1, 2022	23,711,387	1,229,991	22,481,396	5.19%	19,527,290	988,304	2,107,970	816,559	100,000	916,559
June 30, 2024	July 1, 2023	24,719,042	1,374,776	23,344,266	5.56%	20,718,701	1,031,632	2,192,997	848,057	100,000	948,057
June 30, 2025	July 1, 2024	25,774,209	1,524,628	24,249,581	5.92%	21,963,640	1,077,816	2,282,754	876,261	100,000	976,261
June 30, 2026	July 1, 2025	26,879,283	1,679,725	25,199,558	6.25%	23,270,133	1,122,163	2,372,829	977,047	100,000	1,077,047
June 30, 2027	July 1, 2026	27,938,316	1,840,250	26,098,066	6.59%	24,565,915	1,157,040	2,453,058	1,003,087	100,000	1,103,087
June 30, 2028	July 1, 2027	29,034,758	2,006,394	27,028,364	6.91%	25,915,886	1,210,645	2,553,912	1,011,751	100,000	1,111,751
June 30, 2029	July 1, 2028	30,243,477	2,178,353	28,065,124	7.20%	27,358,047	1,263,166	2,656,910	1,106,255	100,000	1,206,255
June 30, 2030	July 1, 2029	31,293,247	2,356,330	28,936,917	7.53%	28,808,703	1,322,737	2,767,253	1,116,718	100,000	1,216,718
June 30, 2031	July 1, 2030	32,533,617	2,540,536	29,993,081	7.81%	30,359,238	1,380,936	2,879,720	1,179,386	100,000	1,279,386
June 30, 2032	July 1, 2031	33,784,351	2,731,190	31,053,161	8.08%	31,959,572	1,439,834	2,994,630	1,299,124	100,000	1,399,124
June 30, 2033	July 1, 2032	34,910,265	2,928,517	31,981,748	8.39%	33,555,079	1,505,232	3,115,979	1,343,582	100,000	1,443,582
June 30, 2034	July 1, 2033	36,283,056	3,132,750	33,150,306	8.63%	35,227,476	1,573,798	3,243,516	1,390,015	100,000	1,490,015
June 30, 2035	July 1, 2034	37,584,482	3,344,131	34,240,351	8.90%	36,980,978	1,645,458	3,377,005	1,474,475	100,000	1,574,475
June 30, 2036	July 1, 2035	39,014,583	3,562,911	35,451,672	9.13%	38,783,509	1,723,638	3,518,748	1,528,145	100,000	1,628,145
June 30, 2037	July 1, 2036	40,571,106	3,789,348	36,781,758	9.34%	40,674,113	1,802,050	3,663,824	1,508,256	100,000	1,608,256
June 30, 2038	July 1, 2037	42,158,727	4,023,710	38,135,017	9.54%	42,729,681	1,881,012	3,815,241	1,591,379	100,000	1,691,379
June 30, 2039	July 1, 2038	43,831,974	4,266,275	39,565,699	9.73%	44,853,543	1,969,654	3,978,746	1,628,725	100,000	1,728,725
June 30, 2040	July 1, 2039	45,718,956	4,517,330	41,201,626	9.88%	47,103,564	2,064,897	4,153,286	1,634,753	100,000	1,734,753
June 30, 2041	July 1, 2040	47,741,160	4,777,171	42,963,989	10.01%	49,522,097	2,165,796	4,339,397	1,731,291	100,000	1,831,291
June 30, 2042	July 1, 2041	49,701,767	5,046,107	44,655,660	10.15%	52,030,203	2,267,882	4,544,963	1,787,379	100,000	1,887,379
June 30, 2043	July 1, 2042	51,922,625	5,324,456	46,598,169	10.25%	53,497,787	2,382,556	4,811,843	1,861,347	100,000	1,961,347
June 30, 2044	July 1, 2043	54,181,679	5,612,547	48,569,132	10.36%	55,058,283	2,496,830	5,099,763	1,946,041	100,000	2,046,041
June 30, 2045	July 1, 2044	56,463,022	5,910,721	50,552,301	10.47%	56,703,824	2,621,748	5,374,949	2,017,908	100,000	2,117,908
June 30, 2046	July 1, 2045	59,040,322	6,219,331	52,820,991	10.53%	58,460,864	2,756,750	5,750,977	2,086,082	100,000	2,186,082
June 30, 2047	July 1, 2046	61,742,328	6,538,743	55,203,585	10.59%	61,085,759	2,892,963	6,161,510	2,161,510	100,000	2,261,510

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical & Life Insurance - Funding over 30 years at 7.00% discount rate increasing at 0.00% per year											
Fiscal Year Ending	Valuation Date	I. Total Actuarial Accrued Liability ("AAL") as of Valuation Date	II. Plan Assets as of Valuation Date	III. Unfunded Accrued Actuarial Liability ("UAAL") [I. - II.]	IV. Funded Ratio [II. / I.]	V. OPEB Obligation (Asset) as of Fiscal year end	VI. Normal Cost	VII. Expected Annual OPEB Expense	VII. Employer Share of Premiums / Claims	IX. Excess Employer Payments (beyond claims)	X. Total Employer Contribution [VIII. + IX.]
June 30, 2016	July 1, 2015	11,759,081	342,853	11,416,228	2.92%	11,529,046	373,076	1,138,094	417,624	100,000	517,624
June 30, 2017	July 1, 2016	12,290,578	458,499	11,832,079	3.73%	12,487,652	387,007	1,195,458	471,922	385,400	857,322
June 30, 2018	July 1, 2017	12,808,114	889,255	11,918,859	6.94%	12,831,102	398,564	1,230,684	501,834	385,400	887,234
June 30, 2019	July 1, 2018	13,336,891	1,350,164	11,986,727	10.12%	13,135,981	407,618	1,263,780	573,501	385,400	958,901
June 30, 2020	July 1, 2019	13,831,331	1,843,336	11,987,995	13.33%	13,407,201	416,994	1,294,497	637,877	385,400	1,023,277
June 30, 2021	July 1, 2020	14,298,951	2,371,030	11,927,921	16.58%	13,647,325	427,948	1,324,437	698,913	385,400	1,084,313
June 30, 2022	July 1, 2021	14,961,037	2,935,663	12,025,374	19.62%	13,884,906	448,517	1,361,815	738,834	385,400	1,124,234
June 30, 2023	July 1, 2022	15,646,116	3,539,820	12,106,296	22.62%	14,078,024	465,148	1,395,077	816,559	385,400	1,201,959
June 30, 2024	July 1, 2023	16,312,983	4,186,268	12,126,715	25.66%	14,272,556	484,543	1,427,989	848,057	385,400	1,233,457
June 30, 2025	July 1, 2024	17,012,214	4,877,968	12,134,246	28.67%	14,473,080	505,121	1,462,185	876,261	385,400	1,261,661
June 30, 2026	July 1, 2025	17,747,420	5,618,087	12,129,333	31.66%	14,606,324	524,590	1,495,691	977,047	385,400	1,362,447
June 30, 2027	July 1, 2026	18,428,700	6,410,014	12,018,686	34.78%	14,735,339	536,906	1,517,502	1,003,087	385,400	1,388,487
June 30, 2028	July 1, 2027	19,138,197	7,257,376	11,880,821	37.92%	14,886,877	558,423	1,548,689	1,011,751	385,400	1,397,151
June 30, 2029	July 1, 2028	19,927,941	8,164,053	11,763,888	40.97%	14,976,062	579,304	1,580,840	1,106,255	385,400	1,491,655
June 30, 2030	July 1, 2029	20,588,534	9,134,198	11,454,336	44.37%	15,085,948	603,540	1,612,004	1,116,718	385,400	1,502,118
June 30, 2031	July 1, 2030	21,391,575	10,172,253	11,219,322	47.55%	15,165,227	627,205	1,644,065	1,179,386	385,400	1,564,786
June 30, 2032	July 1, 2031	22,184,358	11,282,972	10,901,386	50.86%	15,154,608	650,773	1,673,905	1,299,124	385,400	1,684,524
June 30, 2033	July 1, 2032	22,864,464	12,471,441	10,393,023	54.55%	15,125,995	677,239	1,700,369	1,343,582	385,400	1,728,982
June 30, 2034	July 1, 2033	23,686,678	13,743,103	9,943,575	58.02%	15,077,105	704,642	1,726,525	1,390,015	385,400	1,775,415
June 30, 2035	July 1, 2034	24,457,108	15,103,781	9,353,327	61.76%	14,970,109	733,644	1,752,879	1,474,475	385,400	1,859,875
June 30, 2036	July 1, 2035	25,285,290	16,559,707	8,725,583	65.49%	14,834,704	765,606	1,778,140	1,528,145	385,400	1,913,545
June 30, 2037	July 1, 2036	26,179,283	18,117,547	8,061,736	69.21%	14,742,102	797,196	1,801,054	1,508,256	385,400	1,893,656
June 30, 2038	July 1, 2037	27,111,765	19,784,436	7,327,329	72.97%	14,592,139	828,621	1,826,816	1,591,379	385,400	1,976,779
June 30, 2039	July 1, 2038	28,077,668	21,568,007	6,509,661	76.82%	14,430,737	864,193	1,852,723	1,628,725	385,400	2,014,125
June 30, 2040	July 1, 2039	29,175,902	23,476,428	5,699,474	80.47%	14,291,502	902,841	1,880,918	1,634,753	385,400	2,020,153
June 30, 2041	July 1, 2040	30,375,019	25,518,439	4,856,580	84.01%	14,087,926	943,927	1,913,115	1,731,291	385,400	2,116,691
June 30, 2042	July 1, 2041	31,524,367	27,703,391	3,820,976	87.88%	12,342,961	985,351	427,814	1,787,379	385,400	2,172,779
June 30, 2043	July 1, 2042	32,818,360	30,041,289	2,777,071	91.54%	10,449,878	1,032,063	353,664	1,861,347	385,400	2,246,747
June 30, 2044	July 1, 2043	34,127,731	32,542,840	1,584,891	95.36%	8,387,293	1,078,481	268,856	1,946,041	385,400	2,331,441
June 30, 2045	July 1, 2044	35,441,280	35,219,500	221,780	99.37%	6,324,323	1,129,435	176,718	2,017,908	221,780	2,239,688
June 30, 2046	July 1, 2045	36,917,371	37,914,276	(996,905)	102.70%	6,879,582	1,184,758	1,644,436	2,086,082	(996,905)	1,089,177
June 30, 2047	July 1, 2046	38,464,418	39,537,069	(1,072,651)	102.79%	7,532,032	1,240,499	1,741,309	2,161,510	(1,072,651)	1,088,859

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical & Life Insurance - Funding over 30 years at 7.00% discount rate increasing at 2.75% per year											
Fiscal Year Ending	Valuation Date	I. Total Actuarial Accrued Liability ("AAL") as of Valuation Date	II. Plan Assets as of Valuation Date	III. Unfunded Actuarial Liability ("UAAL") [I. - II.]	IV. Funded Ratio [II. / I.]	V. OPEB Obligation (Asset) as of Fiscal year end	VI. Normal Cost	VII. Expected Annual OPEB Expense	VII. Employer Share of Premiums / Claims	IX. Excess Employer Payments (beyond claims)	X. Total Employer Contribution [VIII. + IX.]
June 30, 2016	July 1, 2015	11,759,081	342,853	11,416,228	2.92%	11,529,046	373,076	1,138,094	417,624	100,000	517,624
June 30, 2017	July 1, 2016	12,290,578	458,499	11,832,079	3.73%	12,582,152	387,007	1,195,458	471,922	290,900	762,822
June 30, 2018	July 1, 2017	12,808,114	791,503	12,016,611	6.18%	13,012,102	398,564	1,230,684	501,834	298,900	800,734
June 30, 2019	July 1, 2018	13,336,891	1,156,093	12,180,798	8.67%	13,395,261	407,618	1,263,780	573,501	307,120	880,621
June 30, 2020	July 1, 2019	13,831,331	1,554,707	12,276,624	11.24%	13,736,315	416,994	1,294,497	637,877	315,566	953,443
June 30, 2021	July 1, 2020	14,298,951	1,989,960	12,308,991	13.92%	14,037,595	427,948	1,324,437	698,913	324,244	1,023,157
June 30, 2022	July 1, 2021	14,961,037	2,464,658	12,496,379	16.47%	14,327,415	448,517	1,361,815	738,834	333,161	1,071,995
June 30, 2023	July 1, 2022	15,646,116	2,981,808	12,664,308	19.06%	14,563,610	465,148	1,395,077	816,559	342,323	1,158,882
June 30, 2024	July 1, 2023	16,312,983	3,544,636	12,768,347	21.73%	14,791,805	484,543	1,427,989	848,057	351,737	1,199,794
June 30, 2025	July 1, 2024	17,012,214	4,156,600	12,855,614	24.43%	15,016,319	505,121	1,462,185	876,261	361,410	1,237,671
June 30, 2026	July 1, 2025	17,747,420	4,821,407	12,926,013	27.17%	15,163,614	524,590	1,495,691	977,047	371,349	1,348,396
June 30, 2027	July 1, 2026	18,428,700	5,543,032	12,885,668	30.08%	15,296,468	536,906	1,517,502	1,003,087	381,561	1,384,648
June 30, 2028	July 1, 2027	19,138,197	6,325,734	12,812,463	33.05%	15,441,352	558,423	1,548,689	1,011,751	392,054	1,403,805
June 30, 2029	July 1, 2028	19,927,941	7,174,079	12,753,862	36.00%	15,513,102	579,304	1,580,840	1,106,255	402,835	1,509,090
June 30, 2030	July 1, 2029	20,588,534	8,092,960	12,495,574	39.31%	15,594,475	603,540	1,612,004	1,116,718	413,913	1,530,631
June 30, 2031	July 1, 2030	21,391,575	9,087,622	12,303,953	42.48%	15,633,858	627,205	1,644,065	1,179,386	425,296	1,604,682
June 30, 2032	July 1, 2031	22,184,358	10,163,685	12,020,673	45.81%	15,571,647	650,773	1,673,905	1,299,124	436,992	1,736,116
June 30, 2033	July 1, 2032	22,864,464	11,327,171	11,537,293	49.54%	15,479,425	677,239	1,700,369	1,343,582	449,009	1,792,591
June 30, 2034	July 1, 2033	23,686,678	12,584,531	11,102,147	53.13%	15,354,578	704,642	1,726,525	1,390,015	461,357	1,851,372
June 30, 2035	July 1, 2034	24,457,108	13,942,680	10,514,428	57.01%	15,158,938	733,644	1,752,879	1,474,475	474,044	1,948,519
June 30, 2036	July 1, 2035	25,285,290	15,409,023	9,876,267	60.94%	14,921,853	765,606	1,778,140	1,528,145	487,080	2,015,225
June 30, 2037	July 1, 2036	26,179,283	16,991,494	9,187,789	64.90%	14,714,176	797,196	1,801,054	1,508,256	500,475	2,008,731
June 30, 2038	July 1, 2037	27,111,765	18,698,594	8,413,171	68.97%	14,435,375	828,621	1,826,816	1,591,379	514,238	2,105,617
June 30, 2039	July 1, 2038	28,077,668	20,539,428	7,538,240	73.15%	14,130,993	864,193	1,852,723	1,628,725	528,380	2,157,105
June 30, 2040	July 1, 2039	29,175,902	22,523,748	6,652,154	77.20%	13,834,248	902,841	1,880,918	1,634,753	542,910	2,177,663
June 30, 2041	July 1, 2040	30,375,019	24,662,001	5,713,018	81.19%	13,458,232	943,927	1,913,115	1,731,291	557,840	2,289,131
June 30, 2042	July 1, 2041	31,524,367	26,965,375	4,558,992	85.54%	11,525,486	985,351	427,814	1,787,379	573,181	2,360,560
June 30, 2043	July 1, 2042	32,818,360	29,445,854	3,372,506	89.72%	9,428,860	1,032,063	353,664	1,861,347	588,943	2,450,290
June 30, 2044	July 1, 2043	34,127,731	32,116,271	2,011,460	94.11%	7,146,536	1,078,481	268,856	1,946,041	605,139	2,551,180
June 30, 2045	July 1, 2044	35,441,280	34,990,371	450,909	98.73%	4,854,437	1,129,435	176,718	2,017,908	450,909	2,468,817
June 30, 2046	July 1, 2045	36,917,371	37,906,121	(988,750)	102.68%	5,401,541	1,184,758	1,644,436	2,086,082	(988,750)	1,097,332
June 30, 2047	July 1, 2046	38,464,418	39,536,779	(1,072,361)	102.79%	6,053,701	1,240,499	1,741,309	2,161,510	(1,072,361)	1,089,149

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical, Dental & Life Insurance - Funding Annual Normal Cost - 3.50% discount rate

Fiscal Year	I. Total Actuarial Accrued Liability ("AAL")	II. Normal Cost	III. Employer Share of Premiums / Claims including "implicit cost"	IV. Funding Normal Cost beyond claims	V. Total Funding Costs [III. + IV.]	VI. Present Value at 2.75% of Employer Share of Premiums / Claims including "implicit cost"	VII. Present Value at 2.75% of Funding Normal Cost beyond claims	VIII. Present Value at 2.75% of Total Funding Costs [VI. + VII.]	IX. Plan Assets at Beginning of year	X. Unfunded Accrued Actuarial Liability ["UAAL"] [I. - IX.]	XI. Present Value at 2.75% of Unfunded Accrued Actuarial Liability ["UAAL"] [I. - IX.]
2016	18,349,471	783,370	417,624	365,746	783,370	417,624	365,746	783,370	342,853	18,006,618	18,006,618
2017	18,976,627	813,504	471,922	341,582	813,504	459,291	332,440	791,731	720,599	18,256,028	17,767,424
2018	19,678,159	838,477	501,834	336,643	838,477	475,331	318,864	794,195	1,087,402	18,590,757	17,608,948
2019	20,392,246	859,299	573,501	285,798	859,299	528,675	263,459	792,134	1,462,104	18,930,142	17,450,520
2020	21,071,960	880,448	637,877	242,571	880,448	572,281	217,626	789,907	1,795,076	19,272,884	17,290,971
2021	21,725,305	905,180	698,913	206,267	905,180	610,259	180,103	790,362	2,104,615	19,620,690	17,131,884
2022	22,699,177	950,640	738,834	211,806	950,640	627,850	179,990	807,840	2,384,544	19,620,690	17,263,069
2023	23,711,387	988,304	816,559	171,745	988,304	675,328	142,040	817,368	2,679,809	21,031,578	17,393,983
2024	24,719,042	1,031,632	848,057	183,575	1,031,632	682,606	147,761	830,367	2,945,347	21,773,695	17,525,785
2025	25,774,209	1,077,816	876,261	201,555	1,077,816	686,431	157,891	844,322	3,232,009	22,542,200	17,658,745
2026	26,879,283	1,122,163	977,047	145,116	1,122,163	744,899	110,636	855,535	3,546,684	23,332,599	17,788,725
2027	27,938,316	1,157,040	1,003,087	153,953	1,157,040	744,284	114,232	858,516	3,815,934	24,122,382	17,898,641
2028	29,034,758	1,210,645	1,011,751	198,894	1,210,645	730,620	143,628	874,248	4,103,445	24,931,313	18,003,759
2029	30,243,477	1,263,166	1,106,255	156,911	1,263,166	777,484	110,278	887,762	4,445,960	25,797,517	18,130,681
2030	31,293,247	1,322,737	1,116,718	206,019	1,322,737	763,832	140,916	904,748	4,758,480	26,534,767	18,149,708
2031	32,533,617	1,380,936	1,179,386	201,550	1,380,936	785,106	134,170	919,276	5,131,046	27,402,571	18,241,639
2032	33,784,351	1,439,834	1,299,124	140,710	1,439,834	841,669	91,162	932,831	5,512,183	28,272,168	18,316,809
2033	34,910,265	1,505,232	1,343,582	161,650	1,505,232	847,175	101,926	949,101	5,845,819	29,064,446	18,326,137
2034	36,283,056	1,573,798	1,390,015	183,783	1,573,798	852,995	112,780	965,775	6,212,073	30,070,983	18,453,327
2035	37,584,482	1,645,458	1,474,475	170,983	1,645,458	880,608	102,117	982,725	6,613,279	30,971,203	18,497,085
2036	39,014,583	1,723,638	1,528,145	195,493	1,723,638	886,235	113,630	1,001,865	7,015,727	31,998,856	18,599,353
2037	40,571,106	1,802,050	1,508,256	293,794	1,802,050	853,211	166,197	1,019,408	7,456,770	33,114,336	18,732,581
2038	42,158,727	1,881,012	1,591,379	289,633	1,881,012	876,140	159,459	1,035,599	8,011,551	34,147,176	18,799,856
2039	43,831,974	1,969,654	1,628,725	340,929	1,969,654	872,701	182,676	1,055,377	8,581,588	35,250,386	18,887,817
2040	45,718,956	2,064,897	1,634,753	430,144	2,064,897	852,488	224,311	1,076,799	9,222,873	36,496,083	19,031,908
2041	47,741,160	2,165,796	1,731,291	434,505	2,165,796	882,854	237,339	1,099,188	9,975,818	37,765,342	19,166,714
2042	49,701,767	2,267,882	1,787,379	480,503	2,267,882	894,783	250,555	1,114,338	10,759,477	38,942,290	19,235,075
2043	51,922,625	2,382,556	1,861,347	521,209	2,382,556	910,460	275,688	1,168,148	11,616,562	40,306,063	19,375,859
2044	54,181,679	2,496,830	1,946,041	550,789	2,496,830	918,815	274,947	1,193,762	12,544,351	41,637,328	19,480,119
2045	56,463,022	2,621,748	2,017,908	603,840	2,621,748	924,435	297,203	1,221,638	13,534,192	42,928,830	19,546,813
2046	59,040,322	2,756,750	2,086,082	670,668	2,756,750				14,611,779	44,428,593	19,688,274

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical, Dental & Life Insurance - Pay-as-you-go Funding

Fiscal Year	Number of Retirees, Spouses & Surviving Spouses	Total Actuarial Accrued Liability ("AAL")	Present Value at 2.75% of Total Actuarial Accrued Liability ("AAL")	Employer Share of Premiums / Claims including "implicit cost"	Present Value at 2.75% of Employer Share of Premiums / Claims including "implicit cost"
2016	82	18,349,471	18,349,471	417,624	417,624
2017	91	18,976,627	18,468,737	471,922	459,291
2018	96	19,678,159	18,638,923	501,834	475,331
2019	102	20,392,246	18,798,343	573,501	528,675
2020	108	21,071,960	18,905,040	637,877	572,281
2021	115	21,725,305	18,969,537	698,913	610,259
2022	121	22,699,177	19,289,418	738,834	627,850
2023	126	23,711,387	19,610,296	816,559	675,328
2024	130	24,719,042	19,896,514	848,057	682,606
2025	134	25,774,209	20,190,584	876,261	686,431
2026	137	26,879,283	20,492,709	977,047	744,899
2027	140	27,938,316	20,730,038	1,003,087	744,284
2028	145	29,034,758	20,966,998	1,011,751	730,620
2029	149	30,243,477	21,255,333	1,106,255	777,484
2030	153	31,293,247	21,404,496	1,116,718	763,832
2031	156	32,533,617	21,657,329	1,179,386	785,106
2032	159	33,784,351	21,888,011	1,299,124	841,669
2033	161	34,910,265	22,012,128	1,343,582	847,175
2034	163	36,283,056	22,265,421	1,390,015	852,995
2035	164	37,584,482	22,446,766	1,474,475	880,608
2036	164	39,014,583	22,677,248	1,528,145	888,235
2037	164	40,571,106	22,950,831	1,508,256	853,211
2038	164	42,158,727	23,210,645	1,591,379	876,140
2039	163	43,831,974	23,485,993	1,628,725	872,701
2040	163	45,718,956	23,841,434	1,634,753	852,488
2041	163	47,741,160	24,229,653	1,731,291	878,667
2042	162	49,701,767	24,549,590	1,787,379	882,854
2043	162	51,922,625	24,960,151	1,861,347	894,783
2044	161	54,181,679	25,349,022	1,946,041	910,460
2045	161	56,463,022	25,709,346	2,017,908	918,815
2046	160	59,040,322	26,163,377	2,086,082	924,435
2047	159	61,742,328	26,628,472	2,161,510	932,224
2048	159	64,634,666	27,129,821	2,252,638	945,525
2049	158	67,708,996	27,659,605	2,324,291	949,489
2050	158	70,952,414	28,208,821	2,426,551	964,733
2051	157	74,376,969	28,778,914	2,539,732	982,706
2052	157	78,099,345	29,410,438	2,650,938	998,283
2053	156	81,917,940	30,022,807	2,730,328	1,000,661
2054	156	86,107,411	30,713,617	2,826,060	1,008,026
2055	155	90,471,830	31,406,677	2,932,006	1,017,826

EXHIBIT E

GLOSSARY

(continued)

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.”

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.

EXHIBIT E

GLOSSARY

(continued)

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.

NOA - Net OPEB Asset. The amount recognized by an employer for contributions to an OPEB plan greater than OPEB expenses.

NOO - Net OPEB Obligation. The cumulative difference since the effective date of GASB Statement number 45 between annual OPEB cost and the employer's contributions to the plan, including the OPEB liability (asset) at transition, if any, and excluding (a) short-term differences and (b) unpaid contributions that have been converted to OPEB-related debt.

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.

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.