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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

8.1

May 25, 2017

~~*Personal and Confidential*~~

Ms. Clare Jeannotte
Director of Finance
Acton-Boxborough Regional School District
16 Charter Road
Acton, MA 01720

Re: GASB 45 – Summary of Results

Dear Ms. Jeannotte:

The purpose of this letter is to summarize our actuarial valuation of the Acton-Boxborough Regional School District Other Postemployment Benefits Plan (the "Plan") for the fiscal year ending June 30, 2017 in accordance with Statement No. 45 of the Governmental Accounting Standards Board ("GASB 45").

What caused plan liabilities to change from FY 15 to FY 17?

Plan experience was more favorable than expected. This was mainly due to a decrease in premiums for Medicare integrated plans rather than the expected 20% increase. This was somewhat offset by an increase in the number of retirees. 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 a change in methodology that the number of actives in this report shows all who are eligible for benefits rather than those who have currently elected coverage (prior valuation).

Over the two year period, the Actuarial Accrued Liability ("AAL") went from $41,447,171 as of December 31, 2014 to $44,287,881 as of December 31, 2016 for an increase of $2,840,710. During that same period the Annual OPEB Cost went from $4,151,855 to $3,918,712 for a decrease of $233,143. As you continue to recognize more of the AAL at the time of adoption of GASB 45 onto your financial statements and factor in plan experience you can expect your OPEB obligation to increase. The District's OPEB obligation increased from $14,784,634 as of June 30, 2015 to $19,128,416 as of June 30, 2017 for a total change of $4,343,782. For a 30-year projection of plan costs and liabilities refer to GASB 45 report, exhibit D.

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(860) 537-9080

West Coast
1350 E Flamingo Road, Suite 254
Las Vegas, NV 89119
(702) 979-2860

Assumption changes

Some key assumptions have changed since the prior valuation, their impact is detailed below.

- ✓ Based on recommendations by PERAC, the mortality table was updated to RP-2000 Mortality Table projected generationally with scale BB and a base year 2009 increasing the disclosed liability by $3.73 million.
- ✓ GASB 75 will require a change in the actuarial cost method. As such, it has been updated to Entry Age Normal from Projected Unit Credit which increased the disclosed liability by $5.39 million.

It is important to remember that actuarial assumptions or changes in such do not impact the actual cost of the Plan. Rather, they impact the timing of the recognition of such costs.

Key Drivers of Plan Liabilities

A key driver of plan costs and liabilities is post-age 65 (Medicare Integrated) Plan costs. In the current valuation post-age 65 liabilities represent 72% of the total plan liabilities. Consequently, plan design changes that affect post-65 plan costs will have the most impact of plan liabilities.

The age at which participants retire and the percentage of participants who elect coverage for themselves and/or a spouse are also drivers of liabilities. Unlike a pension plan where a participant receives a reduced benefit for early retirement, a participant in a retiree welfare plan will receive a higher benefit by retiring early (more years of benefits to be received plus more years before Medicare). A key issue to keep in mind is that participant behavior (as far as retirement is concerned) is affected by many factors including the economy, personal health and work satisfaction.

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(860) 537-9080

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

Change in cost sharing –You are currently charging retirees 50% of premiums. Under Massachusetts law, the maximum allowable contribution rate is 50% - therefore, changing the underlying plan design is currently your only alternative.

Future Healthcare Cost Inflation

The future healthcare cost inflation assumption has a significant impact on plan liabilities. In our report we use a long term 5.00% inflation assumption for healthcare costs. This is based on a 2.75% general inflation assumption plus an additional 2.25% inflation assumption due to increased healthcare utilization. The District's ability to manage future increases in healthcare costs will be a major driver of future plan performance. 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 $60,493,077 or by 36.6% and the corresponding Normal Cost would increase to $2,564,196 or by 56.0%. 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 $32,037,827 or by 27.7% and the corresponding Normal Cost would decrease to $1,000,300 or by 39.1%.

Assumptions

The assumptions used in the GASB 45 report for mortality rates, termination rates, and retirement rates mirror the assumptions used by PERAC. The long term healthcare inflation trend assumption is 5.00% as described in the previous paragraph.

What are some key plan metrics?

While an actuarial valuation under GASB 45 can be very complex with many variables, we find it helpful to look at several key metrics shown below to better allow you to manage your plan.

Representative Plan Statistics

	December 31, 2016	December 31, 2014
Total Accumulated Postretirement Benefit Obligation	44,287,881	41,447,171
Per Eligible Active Plan Participant	41,211	46,958
Per Retiree/Spouse Plan Participant	38,594	47,712
Total Annual Normal Cost (annual benefit accrual)	1,643,379	2,263,015
Per Eligible Active Plan Participant	2,162	3,842
Expected Employer Share of Retiree Costs	1,276,118	1,034,417
Per Retiree/Spouse Plan Participant	3,798	3,579
Unfunded Actuarial Liability as a % of Payroll	86.20%	N/A
Average Annual Medical Plan Premium (Single Coverage)	8,139	7,873
Average Annual Medical Plan Premium (Family Coverage)	24,754	23,800
Projected 2020 Excise Tax Thresholds		
Annual Medical Plan Premium (Single Coverage)	11,850	
Annual Medical Plan Premium (Family Coverage)	30,950	

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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

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 projected 2020 threshold amounts are $11,850 for single coverage and $30,950 for family coverage and a "kicker" amount of $1,650 for single coverage and $3,450 for family coverage.

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, 2017, the AAL for the excise tax is $454,117 and the increase in annual OPEB Cost is $59,201. Given your premiums through the 2018 fiscal year and the excise tax threshold, your average single premiums are $3,711 below the excise tax threshold and your average family premiums are $6,196 below the excise tax threshold. As more regulatory guidance becomes available, the calculation of the excise tax liability will evolve.

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

Liabilities & Benefit Payments in today's dollars

With the growth of medical care costs over time, the nominal accrued liabilities ("AAL") and benefit payments can appear daunting. However, it is important to remember that a dollar paid in the future is worth less than a dollar paid today. As such, another way to view the projected liabilities and benefit payments is in 2017 dollars so you can compare them to your current budget and ability to pay. As part of our analysis, we have developed projections of plan liabilities & expenses over the next 40 years assuming that the District's benefit eligible active population remains constant (i.e., employees who terminate or retire are replaced). While the full 40 year projection in 2017 dollars in shown in the report, below are some selected years:

Fiscal Year	Number of Retirees, Spouses & Surviving Spouses	Present Value at 2.75% of Total Actuarial Accrued Liability ("AAL")	Present Value at 2.75% of Employer Share of Premiums / Claims including "implicit cost"
2017	336	44,287,881	1,276,118
2022	489	52,054,405	1,763,177
2027	597	59,848,606	2,191,971
2032	677	67,073,351	2,686,979
2037	721	73,500,691	3,110,748
2042	734	80,826,540	3,377,215
2047	737	89,400,847	3,640,149

Looking at these liabilities and expenses over the next 40 years, we would offer the following highlights/observations:

- ✓ The present value of the Plan's AAL will reach their maximum in 2056 at $110 million ($316 million in 2056 dollars).
- ✓ The present value of the Plan's benefit payments will reach a peak of $4.19 million in 2056 ($12.0 million in 2056 dollars).
- ✓ The Plan will see the number of retirees & beneficiaries receiving benefits increase from 336 to a maximum of 737 in 2045 before beginning to decline.

We have an "unfunded liability". How do we fund it? Can we fund it?

The Plan currently has an unfunded liability of approximately $42,091,605 and this amount is expected to grow over time in the foreseeable future. While some municipal entities across America have chosen to fund this liability, over 95% are not currently dedicating funding to it. 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. Acton-Boxborough Regional School District has established an irrevocable trust for the purposes of prefunding liabilities under GASB 45.

Pre-Funding – if you were to elect to "pre-fund" the OPEB expenses each year by contributing the entire Annual Required Contribution, you would be allowed to use a long-term interest rate based on your underlying investment policy. Based on your investment policy, you may be able use a 6.50% discount rate vs. the 5.50% used in our analysis. The impact of such funding would be to reduce disclosed plan liabilities to $38,425,274 and the annual OPEB Cost to $3,427,102. This would require additional funding of $1,869,600 in the first year which will increase by 0.00% per year until the plan reaches full funding. While this does not impact the ultimate cost of the plan, it would reduce disclosed liabilities and expenses.

In this report, we have outlined several options for pre-funding (including pay-as-you-go, funding over 30 years and funding the annual normal cost):

- Pay-as-you-go – pay annual retiree premiums as they come due with little to no funding set aside in a trust.
- 30-year funding – the concept is to contribute to achieve full funding over a 30 year period.
- Funding annual normal cost – the concept is to fund the excess of the normal cost over current year benefit payments. This approach prevents the liability from growing in current dollars.

Odyssey ADVISORS

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

West Coast
1350 E Flamingo Road, Suite 234
Las Vegas, NV 89119
(702) 979-2880

Please be aware the options presented represent a sampling of your options. The ultimate choice to fund, not to fund or the level of funding will depend on your circumstances. Should you decide that pre-funding is an appropriate option for you we would be happy to help you design a funding schedule that best fits your needs.

Upcoming Changes

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.

If you or your auditors have questions on this, feel free to give us a call.

Sincerely,

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

Odyssey ADVISORS

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

Acton-Boxborough Regional School District Other Postemployment Benefits Plan

GASB 45 Actuarial Valuation

as of

December 31, 2016

For the fiscal years ending

June 30, 2017

Delivered May 2017

Odyssey ADVISORS

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

TABLE OF CONTENTS

LETTER

SECTION		PAGE
I	PRINCIPAL RESULTS OF THE VALUATION	1
II	SUMMARY OF PLAN PROVISIONS	13
III	ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS	14

EXHIBITS

A	FINANCIAL STATEMENT DISCLOSURES	27
B	RECONCILIATION OF PLAN PARTICIPANTS	37
C	PROJECTED CASH FLOWS (OPEN GROUP)	38
D	PROJECTED CASH FLOWS (OPEN GROUP) – FUNDING	39
E	GLOSSARY OF TERMS	43

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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

May 25, 2017

Personal and Confidential

Ms. Clare Jeannotte
Director of Finance
Acton-Boxborough Regional School District
16 Charter Road
Acton, MA 01720

Dear Ms. Jeannotte:

We have performed an actuarial valuation of the Acton-Boxborough Regional School District Other Postemployment Benefits Plan for the fiscal year ending June 30, 2017. The figures presented in this report reflect the adoption, by the Acton-Boxborough Regional School District, of Statement No. 45 of the Governmental Accounting Standards Board ("GASB 45") effective December 31, 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, 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.

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

Very truly yours,

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

Odyssey ADVISORS

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

May 25, 2017

ACTUARIAL CERTIFICATION

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the Acton-Boxborough Regional School District other postemployment benefit programs as of December 31, 2016 for the fiscal year ending June 30, 2017 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 District and on participant claims or premium data provided by the District and/or vendors employed by the District.

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 District 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

Acton-Boxborough Regional School District
Assuming Partial Funding - 5.50% discount rate
Comparison of Plan Liabilities to Prior Valuation

		December 31, 2016	December 31, 2014
I.	Present Value of Future Benefits		
	A. Actives	44,975,117	N/A
	B. Retirees/Disabled	12,967,627	N/A
	C. Total	57,942,744	N/A
II.	Present Value of Future Normal Cost	13,654,863	N/A
III.	Actuarial Accrued Liability (Individual Entry Age Normal)		
	A. Actives	31,320,254	27,658,492
	B. Retirees/Disabled	12,967,627	13,788,679
	C. Total	44,287,881	41,447,171
IV.	Plan Assets	2,196,276	1,177,370
V.	Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	42,091,605	40,269,801
VI.	Funded Ratio [IV. / III.]	4.96%	2.84%
VII.	Annual Covered Payroll	48,838,493	N/A
VIII.	UAAL as % of Covered Payroll	86.20%	N/A
IX.	Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	17,285,822	12,173,196
X.	Number of Eligible Participants		
	A. Actives	760	589
	B. Retirees/Disabled	336	289
	C. Total	1,096	878
	For Fiscal Year Ending June 30, 2017	**June 30, 2017**	**June 30, 2015**
XI.	Normal Cost	1,643,379	2,263,015
XII.	Amortization of UAAL - 30 year increase 3.50% per yr	2,114,894	1,747,596
XIII.	Annual Required Contribution ('ARC') [XI. + XII.]	3,758,273	4,010,611
XIV.	Interest on Net OPEB Obligation (Asset)	950,718	669,526
XV.	Adjustment to Annual Required Contribution	(1,127,354)	(528,282)
XVI.	Amortization of Actuarial (Gains) / Losses	337,075	0
XVII.	Annual OPEB Expense [XIII. + XIV. + XV. + XVI.]	3,918,712	4,151,855
XVIII.	Employer Share of Costs	1,276,118	1,034,417
XIX.	Employer Payments (Withdrawals) to/from OPEB Trust	800,000	506,000
XX.	Total Employer Contribution [XVIII. + XIX.]	2,076,118	1,540,417
XXI.	Percentage of Annual OPEB Expense Contributed	53.0%	37.1%
XXII.	Net OPEB Obligation (Asset) at Beginning of Year [IX.]	17,285,822	12,173,196
XXIII.	Increase (Decrease) in Net OPEB Obligations (Asset) [XVII. - XX.]	1,842,594	2,611,438
XXIV.	Net OPEB Obligation (Asset) at End of Year [XXII. + XXIII.]	19,128,416	14,784,634
XXV.	Discount Rate	5.50%	5.50%

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

SECTION I

PRINCIPAL RESULTS OF THE VALUATION
(continued)

Acton-Boxborough Regional School District
Comparison of Plan Funding vs. Partial Funding

		Partial Funding - 5.50% discount rate	Plan Funding -6.50% discount rate
I.	Present Value of Future Benefits		
	A. Actives	44,975,117	36,628,303
	B. Retirees/Disabled	12,967,627	11,789,273
	C. Total	57,942,744	48,417,576
II.	Present Value of Future Normal Cost	13,654,863	9,992,302
III.	Actuarial Accrued Liability (Individual Entry Age Normal)		
	A. Actives	31,320,254	26,636,001
	B. Retirees/Disabled	12,967,627	11,789,273
	C. Total	44,287,881	38,425,274
IV.	Plan Assets	2,196,276	2,196,276
V.	Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	42,091,605	36,228,998
VI.	Funded Ratio [IV. / III.]	4.96%	5.72%
VII.	Annual Covered Payroll	48,838,493	48,838,493
VIII.	UAAL as % of Covered Payroll	86.20%	74.20%
IX.	Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	17,285,822	17,285,822
X.	Number of Eligible Participants		
	A. Actives	760	760
	B. Retirees/Disabled	336	336
	C. Total	1,096	1,096
	For Fiscal Year Ending June 30, 2017		
XI.	Normal Cost	1,643,379	1,291,244
XII.	Amortization of UAAL - 30 year increase 3.50% per yr	2,114,894	2,305,110
XIII.	Annual Required Contribution ('ARC') [XI. + XII.]	3,758,273	3,596,354
XIV.	Interest on Net OPEB Obligation (Asset)	950,718	1,123,579
XV.	Adjustment to Annual Required Contribution	(1,127,354)	(1,242,915)
XVI.	Amortization of Actuarial (Gains) / Losses	337,075	(49,916)
XVII.	Annual OPEB Expense [XIII. + XIV. + XV. + XVI.]	3,918,712	3,427,102
XVIII.	Employer Share of Costs	1,276,118	1,276,118
XIX.	Employer Payments (Withdrawals) to/from OPEB Trust	800,000	1,869,600
XX.	Total Employer Contribution [XVIII. + XIX.]	2,076,118	3,145,718
XXI.	Percentage of Annual OPEB Expense Contributed	53.0%	91.8%
XXII.	Net OPEB Obligation (Asset) at Beginning of Year [IX.]	17,285,822	17,285,822
XXIII.	Increase (Decrease) in Net OPEB Obligations (Asset) [XVII. - XX.]	1,842,594	281,384
XXIV.	Net OPEB Obligation (Asset) at End of Year [XXII. + XXIII.]	19,128,416	17,567,206
XXV.	Discount Rate	5.50%	6.50%

SECTION I

PRINCIPAL RESULTS OF THE VALUATION
(continued)

Acton-Boxborough Regional School District
Assuming Partial Funding - 5.50% discount rate
Plan Liabilities as of December 31, 2016

		Medical	Life	Excise Tax	Total
I.	Present Value of Future Benefits				
	A. Actives	43,926,630	210,475	838,012	44,975,117
	B. Retirees/Disabled	12,707,358	238,297	21,972	12,967,627
	C. Total	56,633,988	448,772	859,984	57,942,744
II.	Present Value of Future Normal Cost	13,200,363	48,633	405,867	13,654,863
III.	Actuarial Accrued Liability (Individual Entry Age Normal)				
	A. Actives	30,726,267	161,842	432,145	31,320,254
	B. Retirees/Disabled	12,707,358	238,297	21,972	12,967,627
	C. Total	43,433,625	400,139	454,117	44,287,881
IV.	Plan Assets	2,153,952	19,859	22,465	2,196,276
V.	Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	41,279,673	380,280	431,652	42,091,605
VI.	Annual Covered Payroll	48,838,493	48,838,493	48,838,493	48,838,493
VII.	UAAL as % of Covered Payroll	84.5%	0.8%	0.9%	86.2%
VIII.	Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	16,952,400	156,177	177,245	17,285,822
IX.	Number of Eligible Participants				
	A. Actives	760	760	760	
	B. Retirees/Disabled	336	192	336	
	C. Total	1,096	952	1,096	
	For Fiscal Year Ending June 30, 2017				
X.	Normal Cost	1,600,544	6,963	35,872	1,643,379
XI.	Amortization of UAAL - 30 year increase 3.50% per yr	2,074,100	19,108	21,686	2,114,894
XII.	Annual Required Contribution ('ARC') [X. + XI.]	3,674,644	26,071	57,558	3,758,273
XIII.	Interest on Net OPEB Obligation (Asset)	932,381	8,589	9,748	950,718
XIV.	Adjustment to Annual Required Contribution	(1,105,608)	(10,186)	(11,560)	(1,127,354)
XV.	Amortization of Actuarial (Gains) / Losses	330,574	3,046	3,455	337,075
XVI.	Annual OPEB Expense [XII. + XIII. + XIV. + XV.]	3,831,991	27,520	59,201	3,918,712
XVII.	Employer Share of Costs	1,260,757	15,361	0	1,276,118
XVIII.	Employer Payments (Withdrawals) to/from OPEB Trust	784,569	7,228	8,203	800,000
XIX.	Total Employer Contribution [XVII. + XVIII.]	2,045,326	22,589	8,203	2,076,118
XX.	Percentage of Annual OPEB Expense Contributed	53.4%	82.1%	13.9%	53.0%
XXI.	Net OPEB Obligation (Asset) at Beginning of Year [VIII.]	16,952,400	156,177	177,245	17,285,822
XXII.	Increase (Decrease) in Net OPEB Obligations (Asset) [XVI. - XIX.]	1,786,665	4,931	50,998	1,842,594
XXIII.	Net OPEB Obligation (Asset) at End of Year [XXI. + XXII.]	18,739,065	161,108	228,243	19,128,416

Odyssey ADVISORS

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

SECTION I

PRINCIPAL RESULTS OF THE VALUATION
(continued)

Acton-Boxborough Regional School District
Assuming Partial Funding - 5.50% discount rate
Plan Liabilities as of December 31, 2016

		ADMN Employees and Retirees	TCHR Employees and Retirees	CUST Employees and Retirees	OFFC Employees and Retirees	SUPP Employees and Retirees	TRAN Employees and Retirees	Total
I.	Present Value of Future Benefits							
	A. Actives	3,798,525	26,907,363	2,632,509	1,387,424	9,057,990	1,191,306	44,975,117
	B. Retirees/Disabled	1,834,542	7,266,970	499,040	610,321	2,088,341	668,413	12,967,627
	C. Total	5,633,067	34,174,333	3,131,549	1,997,745	11,146,331	1,859,719	57,942,744
II.	Present Value of Future Normal Cost	1,335,352	7,485,996	589,626	366,403	3,290,926	586,560	13,654,863
III.	Actuarial Accrued Liability (Individual Entry Age Normal)							
	A. Actives	2,463,173	19,421,367	2,042,883	1,021,021	5,767,064	604,746	31,320,254
	B. Retirees/Disabled	1,834,542	7,266,970	499,040	610,321	2,088,341	668,413	12,967,627
	C. Total	4,297,715	26,688,337	2,541,923	1,631,342	7,855,405	1,273,159	44,287,881
IV.	Plan Assets	214,000	1,319,001	126,883	81,654	391,492	63,246	2,196,276
V.	Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	4,083,715	25,369,336	2,415,040	1,549,688	7,463,913	1,209,913	42,091,605
VI.	Annual Covered Payroll	6,544,275	32,393,838	2,153,759	1,283,459	5,527,139	936,023	48,838,493
VII.	UAAL as % of Covered Payroll	62.4%	78.3%	112.1%	120.7%	135.0%	129.3%	86.2%
VIII.	Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	1,677,423	10,416,616	992,127	636,722	3,066,012	496,922	17,285,822
IX.	Number of Eligible Participants							
	A. Actives	72	413	36	25	184	30	760
	B. Retirees/Disabled	42	179	17	14	60	24	336
	C. Total	114	592	53	39	244	54	1,096
	For Fiscal Year Ending June 30, 2017							
X.	Normal Cost	153,747	878,880	83,608	49,738	398,720	78,686	1,643,379
XI.	Amortization of UAAL - 30 year increase 3.50% per yr	205,229	1,274,458	121,386	77,902	375,122	60,797	2,114,894
XII.	Annual Required Contribution ('ARC') [X. + XI.]	358,976	2,153,338	204,994	127,640	773,842	139,483	3,758,273
XIII.	Interest on Net OPEB Obligation (Asset)	92,257	572,914	54,566	35,020	168,630	27,331	950,718
XIV.	Adjustment to Annual Required Contribution	(109,399)	(679,355)	(64,705)	(41,527)	(199,960)	(32,408)	(1,127,354)
XV.	Amortization of Actuarial (Gains) / Losses	32,710	203,125	19,347	12,416	59,787	9,690	337,075
XVI.	Annual OPEB Expense [XII. + XIII. + XIV. + XV.]	374,544	2,250,022	214,202	133,549	802,299	144,096	3,918,712
XVII.	Employer Share of Costs	141,355	768,580	66,255	55,786	192,567	51,575	1,276,118
XVIII.	Employer Payments (Withdrawals) to/from OPEB Trust	77,633	482,088	45,916	29,468	141,897	22,998	800,000
XIX.	Total Employer Contribution [XVII. + XVIII.]	218,988	1,250,668	112,171	85,254	334,464	74,573	2,076,118
XX.	Percentage of Annual OPEB Expense Contributed	37.7%	34.2%	30.9%	41.8%	24.0%	35.8%	32.6%
XXI.	Net OPEB Obligation (Asset) at Beginning of Year [VIII.]	1,677,423	10,416,616	992,127	636,722	3,066,012	496,922	17,285,822
XXII.	Increase (Decrease) in Net OPEB Obligations (Asset) [XVI. - XIX.]	155,556	999,354	102,031	48,295	467,835	69,523	1,842,594
XXIII.	Net OPEB Obligation (Asset) at End of Year [XXI. + XXII.]	1,832,979	11,415,970	1,094,158	685,017	3,533,847	566,445	19,128,416

SECTION I

PRINCIPAL RESULTS OF THE VALUATION
(continued)

Acton-Boxborough Regional School District
Detail of Plan Liabilities by Group and Dependency Status
Assuming Partial Funding - 5.50% discount rate
Plan Liabilities as of December 31, 2016

	Present Value of Future Benefits	Actuarial Accrued Liability (Individual Entry Age Normal)	Normal Cost
Actives			
Under Age 65			
A. Participants	11,402,126	7,923,158	395,744
B. Spouses	4,925,774	3,510,621	164,019
C. Total	16,327,900	11,433,779	559,763
Age 65 and Over			
A. Participants	16,730,856	11,628,697	632,179
B. Spouses	11,916,361	8,257,778	451,437
C. Total	28,647,217	19,886,475	1,083,616
Actives Total			
A. Participants	28,132,982	19,551,855	1,027,923
B. Spouses	16,842,135	11,768,399	615,456
C. Total	44,975,117	31,320,254	1,643,379
Retirees/Disabled			
Under Age 65			
A. Participants	897,578	897,578	0
B. Spouses	274,988	274,988	0
C. Total	1,172,566	1,172,566	0
Age 65 and Over			
A. Participants	8,585,134	8,585,134	0
B. Spouses	3,209,927	3,209,927	0
C. Total	11,795,061	11,795,061	0
Retirees/Disabled Total			
A. Participants	9,482,712	9,482,712	0
B. Spouses	3,484,915	3,484,915	0
C. Total	12,967,627	12,967,627	0
Total Population			
A. Participants	37,615,694	29,034,567	1,027,923
B. Spouses	20,327,050	15,253,314	615,456
C. Total	57,942,744	44,287,881	1,643,379

SECTION I

PRINCIPAL RESULTS OF THE VALUATION
(continued)

Acton-Boxborough Regional School District
Assuming Funding over 30 years at 6.50% discount rate
Plan Liabilities as of December 31, 2016

		Medical	Life	Excise Tax	Total
I.	Present Value of Future Benefits				
	A. Actives	35,797,085	167,739	663,479	36,628,303
	B. Retirees/Disabled	11,554,697	215,806	18,770	11,789,273
	C. Total	47,351,782	383,545	682,249	48,417,576
II.	Present Value of Future Normal Cost	9,660,665	34,938	296,699	9,992,302
III.	Actuarial Accrued Liability (Individual Entry Age Normal)				
	A. Actives	26,136,420	132,801	366,780	26,636,001
	B. Retirees/Disabled	11,554,697	215,806	18,770	11,789,273
	C. Total	37,691,117	348,607	385,550	38,425,274
IV.	Plan Assets	2,154,314	19,925	22,037	2,196,276
V.	Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	35,536,803	328,682	363,513	36,228,998
VI.	Annual Covered Payroll	48,838,493	48,838,493	48,838,493	48,838,493
VII.	UAAL as % of Covered Payroll	72.8%	0.7%	0.7%	74.2%
VIII.	Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	16,952,400	156,177	177,245	17,285,822
IX.	Number of Eligible Participants				
	A. Actives	760	760	760	
	B. Retirees/Disabled	336	192	336	
	C. Total	1,096	952	1,096	
	For Fiscal Year Ending June 30, 2017				
X.	Normal Cost	1,257,371	5,295	28,578	1,291,244
XI.	Amortization of UAAL - 30 year increase 3.50% per yr	2,261,068	20,913	23,129	2,305,110
XII.	Annual Required Contribution ('ARC') [X. + XI.]	3,518,439	26,208	51,707	3,596,354
XIII.	Interest on Net OPEB Obligation (Asset)	1,101,906	10,152	11,521	1,123,579
XIV.	Adjustment to Annual Required Contribution	(1,218,940)	(11,230)	(12,745)	(1,242,915)
XV.	Amortization of Actuarial (Gains) / Losses	(48,962)	(453)	(501)	(49,916)
XVI.	Annual OPEB Expense [XII. + XIII. + XIV. + XV.]	3,352,443	24,677	49,982	3,427,102
XVII.	Employer Share of Costs	1,260,757	15,361	0	1,276,118
XVIII.	Employer Payments (Withdrawals) to/from OPEB Trust	1,833,879	16,962	18,759	1,869,600
XIX.	Total Employer Contribution [XVII. + XVIII.]	3,094,636	32,323	18,759	3,145,718
XX.	Percentage of Annual OPEB Expense Contributed	92.3%	131.0%	37.5%	91.8%
XXI.	Net OPEB Obligation (Asset) at Beginning of Year [VIII.]	16,952,400	156,177	177,245	17,285,822
XXII.	Increase (Decrease) in Net OPEB Obligations (Asset) [XVI. - XIX.]	257,807	(7,646)	31,223	281,384
XXIII.	Net OPEB Obligation (Asset) at End of Year [XXI. + XXII.]	17,210,207	148,531	208,468	17,567,206

SECTION I

PRINCIPAL RESULTS OF THE VALUATION
(continued)

Acton-Boxborough Regional School District
Assuming Funding over 30 years at 6.50% discount rate
Plan Liabilities as of December 31, 2016

		ADMN Employees and Retirees	TCHR Employees and Retirees	CUST Employees and Retirees	OFFC Employees and Retirees	SUPP Employees and Retirees	TRAN Employees and Retirees	Total
I.	Present Value of Future Benefits							
	A. Actives	3,093,566	21,913,696	2,143,949	1,129,936	7,376,941	970,215	36,628,303
	B. Retirees/Disabled	1,667,839	6,606,628	453,693	554,862	1,898,576	607,675	11,789,273
	C. Total	4,761,405	28,520,324	2,597,642	1,684,798	9,275,517	1,577,890	48,417,576
II.	Present Value of Future Normal Cost	977,178	5,478,073	431,474	268,125	2,408,221	429,231	9,992,302
III.	Actuarial Accrued Liability (Individual Entry Age Normal)							
	A. Actives	2,094,781	16,516,710	1,737,350	868,317	4,904,543	514,300	26,636,001
	B. Retirees/Disabled	1,667,839	6,606,628	453,693	554,862	1,898,576	607,675	11,789,273
	C. Total	3,762,620	23,123,338	2,191,043	1,423,179	6,803,119	1,121,975	38,425,274
IV.	Plan Assets	214,000	1,319,001	126,883	81,654	391,492	63,246	2,196,276
V.	Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	3,548,620	21,804,337	2,064,160	1,341,525	6,411,627	1,058,729	36,228,998
VI.	Annual Covered Payroll	6,544,275	32,393,838	2,153,759	1,283,459	5,527,139	936,023	48,838,493
VII.	UAAL as % of Covered Payroll	54.2%	67.3%	95.8%	104.5%	116.0%	113.1%	74.2%
VIII.	Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	1,677,423	10,416,616	992,127	636,722	3,066,012	496,922	17,285,822
IX.	Number of Eligible Participants							
	A. Actives	72	413	36	25	184	30	760
	B. Retirees/Disabled	42	179	17	14	60	24	336
	C. Total	114	592	53	39	244	54	1,096
	For Fiscal Year Ending June 30, 2017							
X.	Normal Cost	120,803	690,558	65,693	39,080	313,284	61,826	1,291,244
XI.	Amortization of UAAL - 30 year increase 3.50% per yr	223,687	1,389,084	132,304	84,909	408,861	66,265	2,305,110
XII.	Annual Required Contribution ('ARC') [X. + XI.]	344,490	2,079,642	197,997	123,989	722,145	128,091	3,596,354
XIII.	Interest on Net OPEB Obligation (Asset)	109,032	677,082	64,487	41,387	199,291	32,300	1,123,579
XIV.	Adjustment to Annual Required Contribution	(120,613)	(748,993)	(71,338)	(45,784)	(220,457)	(35,730)	(1,242,915)
XV.	Amortization of Actuarial (Gains) / Losses	(4,843)	(30,080)	(2,865)	(1,839)	(8,854)	(1,435)	(49,916)
XVI.	Annual OPEB Expense [XII. + XIII. + XIV. + XV.]	328,066	1,977,651	188,281	117,753	692,125	123,226	3,427,102
XVII.	Employer Share of Costs	141,355	768,580	66,255	55,786	192,567	51,575	1,276,118
XVIII.	Employer Payments (Withdrawals) to/from OPEB Trust	183,073	1,125,077	106,606	69,245	331,009	54,590	1,869,600
XIX.	Total Employer Contribution [XVII. + XVIII.]	324,428	1,893,657	172,861	125,031	523,576	106,165	3,145,718
XX.	Percentage of Annual OPEB Expense Contributed	98.9%	95.8%	91.8%	106.2%	75.6%	86.2%	91.8%
XXI.	Net OPEB Obligation (Asset) at Beginning of Year [VIII.]	1,677,423	10,416,616	992,127	636,722	3,066,012	496,922	17,285,822
XXII.	Increase (Decrease) in Net OPEB Obligations (Asset) [XVI. - XIX.]	3,638	83,994	15,420	(7,278)	168,549	17,061	281,384
XXIII.	Net OPEB Obligation (Asset) at End of Year [XXI. + XXII.]	1,681,061	10,500,610	1,007,547	629,444	3,234,561	513,983	17,567,206

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 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.

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

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 District, 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 District'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 December 30, 2008. 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, 2017, the Plan saw an experience gain of $13,114,781 or 23.76%. Plan experience was more favorable than expected. This was mainly due to a decrease in premiums for Medicare integrated plans rather than the expected 20% increase. This was somewhat offset by an increase in the number of retirees. 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 a change in methodology that the number of actives in this report shows all who are eligible for benefits rather than those who have currently elected coverage (prior valuation).

Commentary on Plan Experience and Contribution Amounts
(continued)

3. **Balance Sheet Items**

	December 31, 2016	December 31, 2014
Actuarial Accrued Liability	$44,287,881	$41,447,171
Plan Assets	$2,196,276	$1,177,370
Unfunded Actuarial Accrued Liability	$42,091,605	$40,269,801
Funded %	4.96%	2.84%
Net OPEB Obligation	$17,285,822	$12,173,196

4. **Income Statement Items**

	June 30, 2017	June 30, 2015
Normal Cost	$1,643,379	$2,263,015
Amortization of UAAL	$2,114,894	$1,747,596
Interest on Net OPEB Obligation	$950,718	$669,526
Adjustment to Annual Required Contribution	$(1,127,354)	$(528,282)
Amortization of Actuarial (Gains)/Losses	$337,075	$0
Annual OPEB Expense	$3,918,712	$4,151,855
Employer Share of Costs	$1,276,118	$1,034,417
Employer Contributions/(Withdrawals) to/from OPEB Trust	$800,000	$506,000
Total Employer Contribution	$2,076,118	$1,540,417
Discount Rate	5.50%	5.50%

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

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.

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

SECTION II

SUMMARY OF PLAN PROVISIONS

Effective Date	December 31, 2007; GASB 45 is adopted.
Plan Year	July 1 through June 30.
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.
Creditable Service	Elapsed time from date of hire to termination of service date.
Participant Contributions	Retirees pay 50% of premiums for Medical and Life Insurance.
Benefits Offered	Comprehensive Medical Insurance offered through Blue Cross Blue Shield of Massachusetts as well as group term Life Insurance.
Normal Retirement Date	The normal retirement date is the first day of the month following a participant's 65th birthday.
Early Retirement	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. The annual normal cost for each active member is a level percent of payroll. 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 the 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-Retirement Mortality	It is assumed that pre-retirement mortality is represented by the RP-2000 Employees Mortality Table projected generationally with scale BB and a base year 2009 for males and females.
Post-Retirement Mortality	It is assumed that post-retirement mortality is represented by the RP-2000 Healthy Annuitant Mortality Table projected generationally with scale BB and a base year 2009 for males and females.
Disabled Mortality	It is assumed that disabled mortality is represented by the RP-2000 Healthy Annuitant Table projected generationally with Scale BB and a base year 2012 for males and females.
Discount Rate	5.50% per annum (previously 5.50%)

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

SECTION III

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

C. ACTUARIAL ASSUMPTIONS (continued)

Employee Termination

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

Non-Public Safety Employees						
Age	**0-4 Years of Service (Males)**	**0-4 Years of Service (Females)**	**5-9 Years of Service (Males)**	**5-9 Years of Service (Females)**	**10+ Years of Service (Males)**	**10+ Years of Service (Females)**
20	27.00%	27.00%	12.00%	12.00%	6.00%	6.00%
30	23.00%	23.00%	10.00%	10.00%	5.50%	5.50%
40	16.00%	16.00%	8.00%	8.00%	3.50%	3.50%
50	18.00%	18.00%	6.00%	6.00%	3.00%	3.00%
60	18.00%	18.00%	5.00%	5.00%	3.50%	3.50%

Public Safety Employees		
Service	**Male**	**Female**
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%

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(860) 537-9080

West Coast
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Las Vegas, NV 89119
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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:

Age	Male Non Public Safety	Female Non Public Safety	Public Safety
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)

Retirement Rates for teachers

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

Age	Male Teachers	Female Teachers
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:

Age	Standard	Teachers	Public Safety
20	0.01%	0.05%	0.20%
25	0.01%	0.06%	0.20%
30	0.01%	0.07%	0.21%
35	0.03%	0.10%	0.40%
40	0.07%	0.21%	0.71%
45	0.10%	0.30%	1.00%
50	0.13%	0.42%	1.10%
55	0.14%	0.50%	0.80%
60	0.12%	0.50%	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:

Year	Medical
FY 2013	6.0%
FY 2014	5.0%
FY 2015	5.0%
FY 2016	5.0%
FY 2017	0.0%
FY 2018	5.0%
FY 2019	5.0%
FY 2020+	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 replace with new employees with the demographics below:

Open Group Forecast Population Demographics

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

SECTION III

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

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. Medicare Part B Penalties are not reflected Medicare Part B Reimbursement is not reflected

Odyssey ADVISORS

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

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

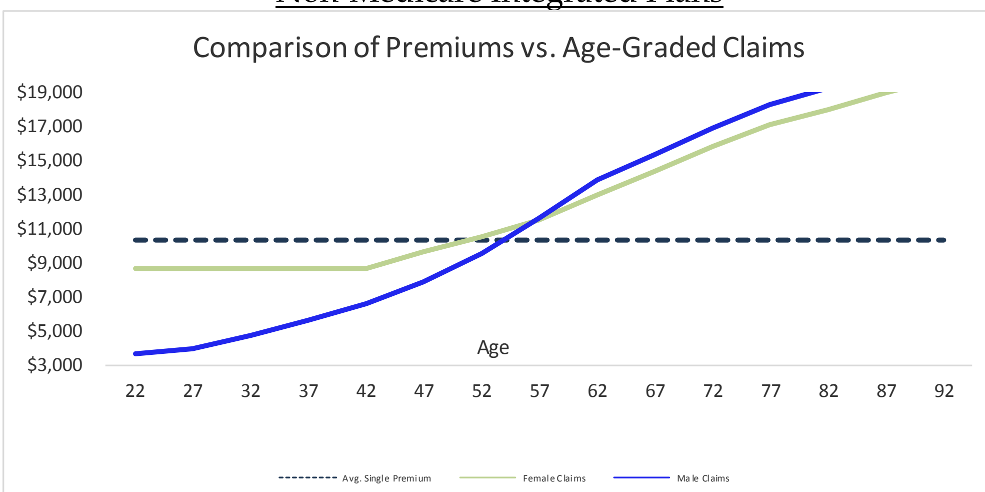
ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

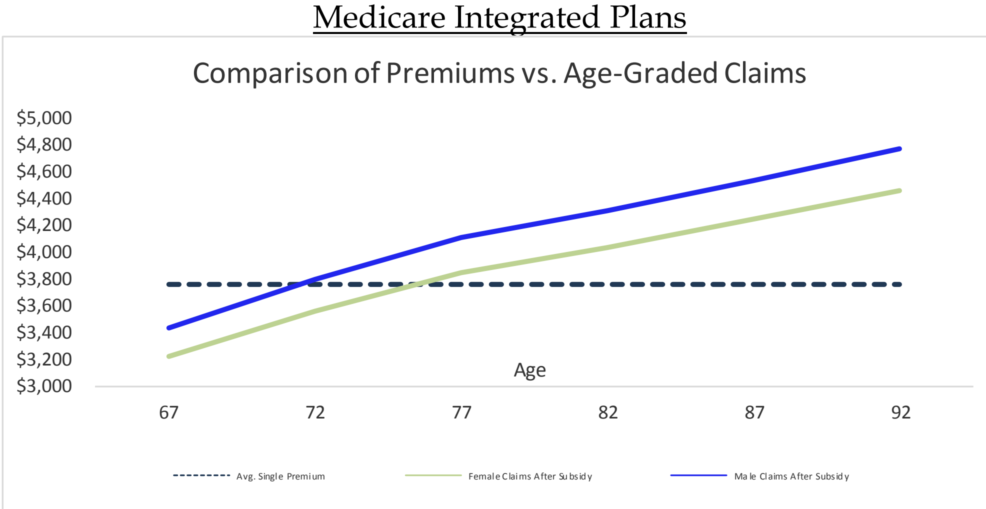
D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

For illustrative purposes, the charts below show the impact of the implicit cost described previously. You can see that individuals are expected to utilize more medical services with age while the underlying premiums are flat. As such, you will see that the age adjusted claims intersect the premium rates at approximately age 50 for females and age 55 for males on the Non-Medicare Integrated Plans and age 75 for females & age 70 for males on the Medicare Integrated Plans.

Non-Medicare Integrated Plans



Medicare Integrated Plans



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

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			
	Single	Two-Person	Family	Total
HPHC HMO	83		203	286
BC Blue Network HMO	129		207	336
Blue Care Elect PPO	3		1	4
BCBS Master Health Plus	2			2
Tufts Medicare Preferred	12	13		25
Medex II	102	67		169
Total	331	80	411	822

	Per Contract Costs (monthly) - FY 2018		
	Single	Two-Person	Family
HPHC HMO	852.80	0.00	2,059.20
BC Blue Network HMO	852.80	0.00	2,059.20
Blue Care Elect PPO	1,482.00	0.00	3,549.00
BCBS Master Health Plus	1,752.40		4,206.80
Tufts Medicare Preferred	296.00	592.00	
Medex II	315.82	631.64	

Gross Expected FY 2018 Incurred Premiums	13,468,163
Adjustment to reflect children's claims	(1,746,732)
Total Expected FY 2018 Incurred Premiums (adults only)	11,721,431

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

	Employer Primary	Medicare Primary
Age 65	14,148	3,172
Average Age	13,413	3,757

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

11,721,431 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	8,680	3,632	0
25 to 29	1.312	0.591	8,680	3,910	314,670
30 to 34	1.312	0.712	8,680	4,711	472,913
35 to 39	1.312	0.850	8,680	5,624	634,384
40 to 44	1.312	1.000	8,680	6,616	1,067,384
45 to 49	1.456	1.193	9,633	7,893	1,195,248
50 to 54	1.599	1.441	10,579	9,534	1,387,668
55 to 59	1.740	1.753	11,512	11,598	2,056,102
60 to 64	1.968	2.102	13,020	13,907	1,932,820
65 to 69	2.168	2.316	14,343	15,323	618,443
70 & Over	2.396	2.557	15,852	16,917	278,004
Total					9,957,636

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	8,680	6,616	0
45 to 49	1.456	1.193	9,633	7,893	0
50 to 54	1.599	1.441	10,579	9,534	0
55 to 59	1.740	1.753	11,512	11,598	80,756
60 to 64	1.968	2.102	13,020	13,907	533,218
65 to 69	2.168	2.316	14,343	15,323	14,343
70 to 74	2.396	2.557	15,852	16,917	32,769
75 to 79	2.593	2.769	17,155	18,320	17,155
80 to 84	2.724	2.910	18,022	19,253	19,253
85 to 89	2.864	3.059	18,948	20,238	0
90 & Over	3.010	3.215	19,914	21,270	0
Total					697,494

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	3,216	3,435	294,984
70 to 74	2.396	2.557	3,554	3,792	269,422
75 to 79	2.593	2.769	3,846	4,107	254,496
80 to 84	2.724	2.910	4,040	4,316	116,708
85 to 89	2.864	3.059	4,248	4,537	57,536
90 & Over	3.010	3.215	4,464	4,768	73,856
Total					1,067,002

Grand Totals	11,722,132

EXHIBIT A

Financial Statement Disclosure
(As of December 31, 2016)

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: Acton-Boxborough Regional School District
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: 50% Participant paid.

2. A DESCRIPTION OF THE RETIREE LIFE INSURANCE PROGRAM:

a. Plan Type: Group Term Life Insurance - $5,000
b. Administrator: Acton-Boxborough Regional School District
c. Eligibility: Same as above
d. Cost sharing: 50% Participant paid.

EXHIBIT A

Financial Statement Disclosure
(As of December 31, 2016)
(continued)

3. RETIREE MEDICAL AND LIFE INSURANCE CONTRIBUTIONS:

Group	Individual	Family
Medical	50%	50%
Life	50% of Premiums	N/A

4. FUNDING POLICY

The contribution requirements of plan members and the District are established and may be amended through District ordinances. For the 2017 fiscal year, total District premiums plus implicit costs for the retiree medical program are $1,276,118. The District is also projected to make a contribution to an OPEB Trust of $800,000 for the 2017 fiscal year for a total contribution of $2,076,118 .

Odyssey ADVISORS

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

EXHIBIT A

Financial Statement Disclosure
(As of December 31, 2016)
(continued)

5. ANNUAL OPEB COST AND NET OPEB OBLIGATION

The District'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 District's annual OPEB costs for the fiscal year, the amount actually contributed to the plan and changes in the District's net OPEB obligation to the plan:

Annual Required Contribution	$3,758,273
Interest on Net OPEB Obligation (Asset)	$950,718
Adjustment to annual required contribution	($1,127,354)
Amortization of Actuarial (Gains) / Losses	$337,075
Annual OPEB expense	$3,918,712
Contributions made to pay benefits	$1,276,118
Contributions made to OPEB Trust	$800,000
Increase (Decrease) in net OPEB Obligation (Asset)	$1,842,594
Net OPEB Obligation (Asset) – beginning of year	$17,285,822
Net OPEB Obligation (Asset) – end of year	$19,128,416

EXHIBIT A

Financial Statement Disclosure
(As of December 31, 2016)
(continued)

The District's annual OPEB cost, the percentage of the annual OPEB cost contributed to the plan, and the net OPEB obligation for the 2017 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)
06/30/2019 (est.)	$4,506,807	$2,475,211	54.9%	$2,031,596	$23,042,567
06/30/2018 (est.)	$4,208,672	$2,326,117	55.3%	$1,882,555	$21,010,971
06/30/2017	$3,918,712	$2,076,118	53.0%	$1,842,594	$19,128,416
06/30/2016	$4,423,411	$1,922,223	43.5%	$2,501,188	$17,285,822
06/30/2015	$4,151,855	$1,540,417	37.1%	$2,611,438	$14,784,634
06/30/2014	$2,405,932	$1,411,007	58.6%	$994,925	$12,173,196

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
12/31/2018 (est.)	$4,299,115	$50,052,398	$45,753,283	8.6%	$51,812,757	88.3%
12/31/2017 (est.)	$3,164,625	$47,146,737	$43,982,112	6.7%	$50,303,648	87.4%
12/31/2016	$2,196,276	$44,287,881	$42,091,605	5.0%	$48,838,493	86.2%
12/31/2015	$1,801,206	$45,022,936	$43,221,730	4.0%	N/A	N/A
12/31/2014	$1,177,370	$41,447,171	$40,269,801	2.8%	N/A	N/A
12/31/2013	$645,425	N/A	N/A	N/A	N/A	N/A

EXHIBIT A

Financial Statement Disclosure
(As of December 31, 2016)
(continued)

	Fiscal Year Ending June 30, 2017						
	ADMN Employees and Retirees	TCHR Employees and Retirees	CUST Employees and Retirees	OFFC Employees and Retirees	SUPP Employees and Retirees	TRAN Employees and Retirees	Total
OPEB Obligation (Asset) at beginning of year	1,677,423	10,416,616	992,127	636,722	3,066,012	496,922	17,285,822
Annual Required Contribution	358,976	2,153,338	204,994	127,640	773,842	139,483	3,758,273
Interest on Net OPEB Obligation	92,257	572,914	54,566	35,020	168,630	27,331	950,718
Adjustment to the ARC	(109,399)	(679,355)	(64,705)	(41,527)	(199,960)	(32,408)	(1,127,354)
Amortization of Actuarial (Gains)/Losses	32,710	203,125	19,347	12,416	59,787	9,690	337,075
Annual OPEB Cost	374,544	2,250,022	214,202	133,549	802,299	144,096	3,918,712
Expected Employer Contribution	141,355	768,580	66,255	55,786	192,567	51,575	1,276,118
Contribution (Withdrawal) to/from Trust Fund over 30 Years	77,633	482,088	45,916	29,468	141,897	22,998	800,000
Total Expected Employer Payments	218,988	1,250,668	112,171	85,254	334,464	74,573	2,076,118
Increase (Decrease) in OPEB Obligation (Asset)	155,556	999,354	102,031	48,295	467,835	69,523	1,842,594
OPEB Obligation (Asset) at end of year	1,832,979	11,415,970	1,094,158	685,017	3,533,847	566,445	19,128,416
AAL as of December 31, 2016	4,297,715	26,688,337	2,541,923	1,631,342	7,855,405	1,273,159	44,287,881
Plan Assets as of December 31, 2016	214,000	1,319,001	126,883	81,654	391,492	63,246	2,196,276
Unfunded Actuarial Liability as of December 31, 2016	4,083,715	25,369,336	2,415,040	1,549,688	7,463,913	1,209,913	42,091,605

EXHIBIT A

Financial Statement Disclosure
(As of December 31, 2016)
(continued)

6. FUNDED STATUS AND FUNDING PROGRESS

As of December 31, 2016, the most recent valuation date, the plan was 4.96% funded. The actuarial liability for benefits was $44,287,881, and the actuarial value of assets was $2,196,276, resulting in an unfunded actuarial accrued liability (UAAL) of $42,091,605. The covered payroll (annual payroll of active employees covered by the plan) was $ 48,838,493 and the ratio of the UAAL to the covered payroll was 86.2%.

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.

7. 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 $60,493,077 or by 36.6% and the corresponding Normal Cost would increase to $2,564,196 or by 56.0%. 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 $32,037,827 or by 27.7% and the corresponding Normal Cost would decrease to $1,000,300 or by 39.1%.

EXHIBIT A

Financial Statement Disclosure
(As of December 31, 2016)
(continued)

8. 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: 5.50% per annum (previously 5.50%)
Healthcare Trend Rates

Year	Medical
FY 2013	6.0%
FY 2014	5.0%
FY 2015	5.0%
FY 2016	5.0%
FY 2017	0.0%
FY 2018	5.0%
FY 2019	5.0%
FY 2020+	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: Amortized increasing at 3.50% per year over 30 years at transition
Remaining Amortization Period: 21 years at December 31, 2016

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

EXHIBIT A

Financial Statement Disclosure
(As of December 31, 2016)
(continued)

9. 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 was amortized beginning in 2007 over a 30 year period with amortization payments increasing at 3.50% per year. 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	
Expected Unfunded Actuarial Liability	
1. Actuarial Accrued Liability at prior valuation date	41,447,171
2. Actuarial Value of Assets at prior valuation date	1,177,370
3. Unfunded Actuarial Accrued Liability at prior valuation date [1. - 2.]	40,269,801
4. Normal Cost for prior periods	4,526,030
5. Employer Contributions for prior periods	(3,462,640)
6. Interest to current valuation date	4,750,767
7. Expected Unfunded Actuarial Accrued Liability before assumption changes [3. + 4. + 5. + 6.]	46,083,958
Net Actuarial (Gain) / Loss due to assumption changes	
8. Actuarial Cost Method Change	5,390,344
9. Interest Rate Change	N/A
10. Mortality Assumption Change	3,732,084
11. Expected Unfunded Actuarial Accrued Liability including assumption changes [7. + 8. + 9. + 10.]	55,206,386
Actual Unfunded Actuarial Liability	
12. Actuarial Accrued Liability at current valuation date	44,287,881
13. Actuarial Value of Assets at current valuation date	2,196,276
14. Unfunded Actuarial Accrued Liability at current valuation date [12. - 13.]	42,091,605
Net Actuarial (Gain) / Loss from Plan Experience [14. - 11.]	(13,114,781)
15. Unfunded Actuarial Accrued Liability at current valuation date [14.]	42,091,605
16. Remaining Initial Unfunded to be amortized	36,923,206
17. Actuarial (Gain) / Loss to be amortized: [15. - 16.]	5,168,399

EXHIBIT A

Financial Statement Disclosure
(As of December 31, 2016)
(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**
December 31, 2007	GASB 45 Liability	35,757,233	30	36,923,206	21	2,114,894
December 31, 2016	Cumulative (Gain) / Loss	5,168,399	30	5,168,399	30	337,075
December 31, 2016	Adjustment to ARC	(17,285,822)	30	(17,285,822)	30	(1,127,353)

10. 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. Acton-Boxborough Regional School District has established an irrevocable trust for the purposes of prefunding liabilities under GASB 45.

EXHIBIT A

Financial Statement Disclosure
(As of December 31, 2016)
(continued)

11. 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 projected 2020 threshold amounts are $11,850 for single coverage and $30,950 for family coverage and a "kicker" amount of $1,650 for single coverage and $3,450 for family coverage.

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, 2017, the AAL for the excise tax is $454,117 and the increase in annual OPEB Cost is $59,201. Given your premiums through the 2018 fiscal year and the excise tax threshold, your average single premiums are $3,711 below the excise tax threshold and your average family premiums are $6,196 below the excise tax threshold. As more regulatory guidance becomes available, the calculation of the excise tax liability will evolve.

EXHIBIT B

Reconciliation of Plan Participation
(As of December 31, 2016)

ACTIVE EMPLOYEES

	December 31, 2016	December 31, 2014
A. Average Age at Hire	37.78	37.90
B. Average Service	10.42	11.00
C. Average Current Age	48.20	48.90

RETIRED EMPLOYEES & DEPENDENTS

	December 31, 2016	December 31, 2014
I. Retirees		
A. Under Age 65	37	N/A
B. Age 65 & Over	203	N/A
C. Total Retirees	240	N/A
II. Dependents of Retirees		
A. Under Age 65	11	N/A
B. Age 65 & Over	85	N/A
C. Total Retirees	96	N/A
III. Retirees & Dependents		
A. Under Age 65	48	N/A
B. Age 65 & Over	288	N/A
C. Total Retirees	336	N/A

EXHIBIT C

Projected Cash Flows (Open Group) – Partial Funding Approach

Total Medical & Life Insurance - Partial Funding - 5.50% 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	VIII. Employer Share of Premiums / Claims	IX. Excess Employer Payments (beyond claims)	X. Total Employer Contribution [VIII. + IX.]
						17,285,822					
June 30, 2017	December 31, 2016	44,287,881	2,196,276	42,091,605	4.96%	19,128,416	1,643,379	3,918,712	1,276,118	800,000	2,076,118
June 30, 2018	December 31, 2017	47,146,737	3,164,625	43,982,112	6.71%	21,010,971	1,757,972	4,208,672	1,426,117	900,000	2,326,117
June 30, 2019	December 31, 2018	50,052,398	4,299,115	45,753,283	8.59%	23,042,567	1,875,955	4,506,807	1,575,211	900,000	2,475,211
June 30, 2020	December 31, 2019	53,122,564	5,507,347	47,615,217	10.37%	25,216,813	1,984,380	4,806,263	1,732,017	900,000	2,632,017
June 30, 2021	December 31, 2020	56,309,872	6,794,114	49,515,758	12.07%	27,539,202	2,096,160	5,119,696	1,897,307	900,000	2,797,307
June 30, 2022	December 31, 2021	59,616,522	8,164,521	51,452,001	13.70%	30,066,831	2,210,741	5,446,949	2,019,320	900,000	2,919,320
June 30, 2023	December 31, 2022	63,096,246	9,624,004	53,472,242	15.25%	32,772,413	2,333,964	5,797,105	2,191,523	900,000	3,091,523
June 30, 2024	December 31, 2023	66,714,399	11,178,354	55,536,045	16.76%	35,657,651	2,457,021	6,159,959	2,374,721	900,000	3,274,721
June 30, 2025	December 31, 2024	70,451,847	12,833,737	57,618,110	18.22%	38,798,051	2,588,113	6,543,915	2,503,515	900,000	3,403,515
June 30, 2026	December 31, 2025	74,400,886	14,596,719	59,804,167	19.62%	42,165,527	2,724,379	6,950,376	2,682,899	900,000	3,582,899
June 30, 2027	December 31, 2026	78,500,486	16,474,295	62,026,191	20.99%	45,759,134	2,856,616	7,368,707	2,875,101	900,000	3,775,101
June 30, 2028	December 31, 2027	82,712,584	18,473,914	64,238,670	22.34%	49,585,463	2,965,216	7,779,369	3,053,040	900,000	3,953,040
June 30, 2029	December 31, 2028	87,061,256	20,603,508	66,457,748	23.67%	53,671,626	3,103,417	8,236,086	3,249,923	900,000	4,149,923
June 30, 2030	December 31, 2029	91,442,135	22,871,526	68,570,609	25.01%	57,987,361	3,253,064	8,722,323	3,506,588	900,000	4,406,588
June 30, 2031	December 31, 2030	96,095,949	25,286,965	70,808,984	26.31%	62,553,720	3,412,449	9,234,839	3,768,480	900,000	4,668,480
June 30, 2032	December 31, 2031	100,757,518	27,859,407	72,898,111	27.65%	67,377,870	3,567,167	9,760,526	4,036,377	900,000	4,936,377
June 30, 2033	December 31, 2032	105,611,246	30,599,058	75,012,188	28.97%	72,513,518	3,732,301	10,314,999	4,279,351	900,000	5,179,351
June 30, 2034	December 31, 2033	110,636,465	33,516,786	77,119,679	30.29%	77,921,830	3,913,328	10,906,838	4,598,526	900,000	5,498,526
June 30, 2035	December 31, 2034	115,696,024	36,624,167	79,071,857	31.66%	83,597,715	4,099,071	11,522,882	4,946,997	900,000	5,846,997
June 30, 2036	December 31, 2035	120,958,741	39,933,527	81,025,214	33.01%	89,748,975	4,296,382	12,169,861	5,118,601	900,000	6,018,601
June 30, 2037	December 31, 2036	126,452,679	43,457,996	82,994,683	34.37%	96,355,574	4,504,313	12,858,418	5,351,820	900,000	6,251,820
June 30, 2038	December 31, 2037	132,315,989	47,211,555	85,104,434	35.68%	99,141,940	4,724,729	9,234,007	5,547,641	900,000	6,447,641
June 30, 2039	December 31, 2038	138,561,747	51,209,096	87,352,651	36.96%	102,077,328	4,954,973	9,617,500	5,782,112	900,000	6,682,112
June 30, 2040	December 31, 2039	145,177,447	55,466,477	89,710,970	38.21%	105,156,444	5,199,357	10,023,331	6,044,214	900,000	6,944,214
June 30, 2041	December 31, 2040	151,981,477	60,000,588	91,980,889	39.48%	108,381,810	5,455,938	10,449,263	6,323,897	900,000	7,223,897
June 30, 2042	December 31, 2041	159,257,448	64,829,416	94,428,032	40.71%	111,736,459	5,738,261	10,908,981	6,654,332	900,000	7,554,332
June 30, 2043	December 31, 2042	166,820,654	69,972,118	96,848,536	41.94%	115,325,463	6,030,112	11,385,338	6,896,334	900,000	7,796,334
June 30, 2044	December 31, 2043	174,894,324	75,449,095	99,445,229	43.14%	119,019,445	6,343,467	11,896,088	7,302,106	900,000	8,202,106
June 30, 2045	December 31, 2044	183,293,580	81,282,076	102,011,504	44.35%	122,978,811	6,675,608	12,431,398	7,572,032	900,000	8,472,032
June 30, 2046	December 31, 2045	192,230,942	87,494,200	104,736,742	45.52%	127,197,450	7,020,008	12,993,564	7,874,925	900,000	8,774,925
June 30, 2047	December 31, 2046	201,742,106	94,110,113	107,631,993	46.65%	132,468,948	7,390,004	14,385,864	8,214,366	900,000	9,114,366
June 30, 2048	December 31, 2047	211,779,146	101,156,060	110,623,086	47.76%	138,007,955	7,771,189	15,056,981	8,617,973	900,000	9,517,973

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical & Life Insurance - Funding over 30 years at 6.50% 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	VIII. Employer Share of Premiums / Claims	IX. Excess Employer Payments (beyond claims)	X. Total Employer Contribution [VIII. + IX.]
						17,285,822					
June 30, 2017	December 31, 2016	38,425,274	2,196,276	36,228,998	5.72%	17,567,206	1,291,244	3,427,102	1,276,118	1,869,600	3,145,718
June 30, 2018	December 31, 2017	40,939,025	4,268,439	36,670,586	10.43%	17,888,270	1,381,955	3,616,781	1,426,117	1,869,600	3,295,717
June 30, 2019	December 31, 2018	43,553,029	6,475,293	37,077,736	14.87%	18,258,432	1,475,774	3,814,973	1,575,211	1,869,600	3,444,811
June 30, 2020	December 31, 2019	46,278,076	8,825,593	37,452,483	19.07%	18,668,474	1,561,974	4,011,659	1,732,017	1,869,600	3,601,617
June 30, 2021	December 31, 2020	49,104,487	11,328,662	37,775,825	23.07%	19,117,896	1,650,542	4,216,329	1,897,307	1,869,600	3,766,907
June 30, 2022	December 31, 2021	52,033,329	13,994,430	38,038,899	26.90%	19,657,534	1,740,977	4,428,558	2,019,320	1,869,600	3,888,920
June 30, 2023	December 31, 2022	55,118,143	16,833,473	38,284,670	30.54%	20,253,020	1,838,131	4,656,609	2,191,523	1,869,600	4,061,123
June 30, 2024	December 31, 2023	58,322,469	19,857,054	38,465,415	34.05%	20,899,614	1,934,555	4,890,915	2,374,721	1,869,600	4,244,321
June 30, 2025	December 31, 2024	61,628,671	23,077,168	38,551,503	37.45%	21,664,893	2,037,360	5,138,394	2,503,515	1,869,600	4,373,115
June 30, 2026	December 31, 2025	65,125,449	26,506,589	38,618,860	40.70%	22,513,834	2,144,423	5,401,440	2,682,899	1,869,600	4,552,499
June 30, 2027	December 31, 2026	68,754,323	30,158,923	38,595,400	43.86%	23,439,156	2,247,868	5,670,023	2,875,101	1,869,600	4,744,701
June 30, 2028	December 31, 2027	72,479,489	34,048,658	38,430,831	46.98%	24,443,459	2,330,837	5,926,943	3,053,040	1,869,600	4,922,640
June 30, 2029	December 31, 2028	76,327,186	38,191,226	38,135,960	50.04%	25,540,464	2,437,353	6,216,528	3,249,923	1,869,600	5,119,523
June 30, 2030	December 31, 2029	80,202,009	42,603,061	37,598,948	53.12%	26,689,984	2,553,317	6,525,708	3,506,588	1,869,600	5,376,188
June 30, 2031	December 31, 2030	84,306,495	47,301,665	37,004,830	56.11%	27,902,134	2,676,942	6,850,230	3,768,480	1,869,600	5,638,080
June 30, 2032	December 31, 2031	88,402,511	52,305,679	36,096,832	59.17%	29,175,450	2,796,621	7,179,293	4,036,377	1,869,600	5,905,977
June 30, 2033	December 31, 2032	92,657,361	57,634,954	35,022,407	62.20%	30,551,501	2,924,400	7,525,002	4,279,351	1,869,600	6,148,951
June 30, 2034	December 31, 2033	97,055,291	63,310,631	33,744,660	65.23%	31,977,942	3,064,625	7,894,567	4,598,526	1,869,600	6,468,126
June 30, 2035	December 31, 2034	101,464,395	69,355,227	32,109,168	68.35%	33,437,296	3,208,498	8,275,951	4,946,997	1,869,600	6,816,597
June 30, 2036	December 31, 2035	106,033,516	75,792,722	30,240,794	71.48%	35,122,669	3,361,401	8,673,574	5,118,601	1,869,600	6,988,201
June 30, 2037	December 31, 2036	110,805,694	82,648,654	28,157,040	74.59%	37,000,671	3,522,595	9,099,422	5,351,820	1,869,600	7,221,420
June 30, 2038	December 31, 2037	115,894,324	89,950,222	25,944,102	77.61%	34,389,064	3,693,421	4,805,634	5,547,641	1,869,600	7,417,241
June 30, 2039	December 31, 2038	121,314,698	97,726,392	23,588,306	80.56%	31,554,233	3,871,647	4,816,881	5,782,112	1,869,600	7,651,712
June 30, 2040	December 31, 2039	127,053,421	106,008,013	21,045,408	83.44%	28,465,793	4,060,801	4,825,374	6,044,214	1,869,600	7,913,814
June 30, 2041	December 31, 2040	132,956,890	114,827,939	18,128,951	86.36%	25,099,212	4,259,468	4,826,916	6,323,897	1,869,600	8,193,497
June 30, 2042	December 31, 2041	139,266,154	124,221,160	15,044,994	89.20%	21,405,872	4,478,327	4,830,592	6,654,332	1,869,600	8,523,932
June 30, 2043	December 31, 2042	145,813,976	134,224,941	11,589,035	92.05%	17,475,311	4,704,582	4,835,373	6,896,334	1,869,600	8,765,934
June 30, 2044	December 31, 2043	152,806,905	144,878,968	7,927,937	94.81%	13,144,120	4,947,427	4,840,515	7,302,106	1,869,600	9,171,706
June 30, 2045	December 31, 2044	160,064,155	156,225,506	3,838,649	97.60%	8,537,539	5,204,887	4,835,051	7,572,032	1,869,600	9,441,632
June 30, 2046	December 31, 2045	167,789,122	168,309,569	(520,447)	100.31%	6,001,924	5,471,800	4,818,863	7,874,925	(520,447)	7,354,478
June 30, 2047	December 31, 2046	176,007,437	178,712,596	(2,705,159)	101.54%	6,739,732	5,758,506	6,247,015	8,214,366	(2,705,159)	5,509,207
June 30, 2048	December 31, 2047	184,681,115	187,537,222	(2,856,107)	101.55%	7,577,492	6,053,839	6,599,626	8,617,973	(2,856,107)	5,761,866

Odyssey
ADVISORS

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

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical & Life Insurance - Funding over 30 years at 6.50% 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 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	VIII. Employer Share of Premiums / Claims	IX. Excess Employer Payments (beyond claims)	X. Total Employer Contribution [VIII. + IX.]
						17,285,822					
June 30, 2017	December 31, 2016	38,425,274	2,196,276	36,228,998	5.72%	18,002,206	1,291,244	3,427,102	1,276,118	1,434,600	2,710,718
June 30, 2018	December 31, 2017	40,939,025	3,819,524	37,119,501	9.33%	18,718,818	1,381,955	3,616,781	1,426,117	1,474,052	2,900,169
June 30, 2019	December 31, 2018	43,553,029	5,588,998	37,964,031	12.83%	19,443,992	1,475,774	3,814,973	1,575,211	1,514,588	3,089,799
June 30, 2020	December 31, 2019	46,278,076	7,515,320	38,762,756	16.24%	20,167,395	1,561,974	4,011,659	1,732,017	1,556,239	3,288,256
June 30, 2021	December 31, 2020	49,104,487	9,609,836	39,494,651	19.57%	20,887,381	1,650,542	4,216,329	1,897,307	1,599,036	3,496,343
June 30, 2022	December 31, 2021	52,033,329	11,884,662	40,148,667	22.84%	21,653,610	1,740,977	4,428,558	2,019,320	1,643,009	3,662,329
June 30, 2023	December 31, 2022	55,118,143	14,352,731	40,765,412	26.04%	22,430,504	1,838,131	4,656,609	2,191,523	1,688,192	3,879,715
June 30, 2024	December 31, 2023	58,322,469	17,027,853	41,294,616	29.20%	23,212,081	1,934,555	4,890,915	2,374,721	1,734,617	4,109,338
June 30, 2025	December 31, 2024	61,628,671	19,924,768	41,703,903	32.33%	24,064,641	2,037,360	5,138,394	2,503,515	1,782,319	4,285,834
June 30, 2026	December 31, 2025	65,125,449	23,059,210	42,066,239	35.41%	24,951,849	2,144,423	5,401,440	2,682,899	1,831,333	4,514,232
June 30, 2027	December 31, 2026	68,754,323	26,447,973	42,306,350	38.47%	25,865,076	2,247,868	5,670,023	2,875,101	1,881,695	4,756,796
June 30, 2028	December 31, 2027	72,479,489	30,108,979	42,370,510	41.54%	26,805,537	2,330,837	5,926,943	3,053,040	1,933,442	4,986,482
June 30, 2029	December 31, 2028	76,327,186	34,061,352	42,265,834	44.63%	27,785,530	2,437,353	6,216,528	3,249,923	1,986,612	5,236,535
June 30, 2030	December 31, 2029	80,202,009	38,325,500	41,876,509	47.79%	28,763,406	2,553,317	6,525,708	3,506,588	2,041,244	5,547,832
June 30, 2031	December 31, 2030	84,306,495	42,923,198	41,383,297	50.91%	29,747,778	2,676,942	6,850,230	3,768,480	2,097,378	5,865,858
June 30, 2032	December 31, 2031	88,402,511	47,877,676	40,524,835	54.16%	30,735,638	2,796,621	7,179,293	4,036,377	2,155,056	6,191,433
June 30, 2033	December 31, 2032	92,657,361	53,213,718	39,443,643	57.43%	31,766,969	2,924,400	7,525,002	4,279,351	2,214,320	6,493,671
June 30, 2034	December 31, 2033	97,055,291	58,957,762	38,097,529	60.75%	32,787,796	3,064,625	7,894,567	4,598,526	2,275,214	6,873,740
June 30, 2035	December 31, 2034	101,464,395	65,138,011	36,326,384	64.20%	33,778,968	3,208,498	8,275,951	4,946,997	2,337,782	7,284,779
June 30, 2036	December 31, 2035	106,033,516	71,784,546	34,248,970	67.70%	34,931,870	3,361,401	8,673,574	5,118,601	2,402,071	7,520,672
June 30, 2037	December 31, 2036	110,805,694	78,929,451	31,876,243	71.23%	36,211,344	3,522,595	9,099,422	5,351,820	2,468,128	7,819,948
June 30, 2038	December 31, 2037	115,894,324	86,606,945	29,287,379	74.73%	32,933,335	3,693,421	4,805,634	5,547,641	2,536,002	8,083,643
June 30, 2039	December 31, 2038	121,314,698	94,853,521	26,461,177	78.19%	29,362,362	3,871,647	4,816,881	5,782,112	2,605,742	8,387,854
June 30, 2040	December 31, 2039	127,053,421	103,708,095	23,345,326	81.63%	25,466,122	4,060,801	4,825,374	6,044,214	2,677,400	8,721,614
June 30, 2041	December 31, 2040	132,956,890	113,212,167	19,744,723	85.15%	21,218,112	4,259,468	4,826,916	6,323,897	2,751,029	9,074,926
June 30, 2042	December 31, 2041	139,266,154	123,409,988	15,856,166	88.61%	16,567,690	4,478,327	4,830,592	6,654,332	2,826,682	9,481,014
June 30, 2043	December 31, 2042	145,813,976	134,348,740	11,465,236	92.14%	11,602,313	4,704,582	4,835,373	6,896,334	2,904,416	9,800,750
June 30, 2044	December 31, 2043	152,806,905	146,078,732	6,728,173	95.60%	6,156,435	4,947,427	4,840,515	7,302,106	2,984,287	10,286,393
June 30, 2045	December 31, 2044	160,064,155	158,653,599	1,410,556	99.12%	2,008,898	5,204,887	4,835,051	7,572,032	1,410,556	8,982,588
June 30, 2046	December 31, 2045	167,789,122	170,421,760	(2,632,638)	101.57%	1,585,474	5,471,800	4,818,863	7,874,925	(2,632,638)	5,242,287
June 30, 2047	December 31, 2046	176,007,437	178,782,323	(2,774,886)	101.58%	2,393,009	5,758,506	6,247,015	8,214,366	(2,774,886)	5,439,480
June 30, 2048	December 31, 2047	184,681,115	187,539,524	(2,858,409)	101.55%	3,233,071	6,053,839	6,599,626	8,617,973	(2,858,409)	5,759,564

Odyssey ADVISORS

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

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical & Life Insurance - Funding Annual Normal Cost - 5.50% 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")
2017	44,287,881	1,643,379	1,276,118	367,261	1,643,379	1,276,118	367,261	1,643,379	2,196,276	42,091,605	42,091,605
2018	47,146,737	1,757,972	1,426,117	331,855	1,757,972	1,387,948	322,973	1,710,921	2,684,332	44,462,405	43,272,414
2019	50,052,398	1,875,955	1,575,211	300,744	1,875,955	1,492,021	284,861	1,776,882	3,163,825	46,888,573	44,412,309
2020	53,122,564	1,984,380	1,732,017	252,363	1,984,380	1,596,639	232,638	1,829,277	3,638,579	49,483,985	45,616,207
2021	56,309,872	2,096,160	1,897,307	198,853	2,096,160	1,702,199	178,404	1,880,603	4,091,064	52,218,808	46,848,925
2022	59,616,522	2,210,741	2,019,320	191,421	2,210,741	1,763,177	167,140	1,930,317	4,514,926	55,101,596	48,112,179
2023	63,096,246	2,333,964	2,191,523	142,441	2,333,964	1,862,323	121,044	1,983,367	4,954,668	58,141,578	49,407,836
2024	66,714,399	2,457,021	2,374,721	82,300	2,457,021	1,963,992	68,065	2,032,057	5,369,616	61,344,783	50,734,668
2025	70,451,847	2,588,113	2,503,515	84,598	2,588,113	2,015,095	68,093	2,083,188	5,747,245	64,704,602	52,081,145
2026	74,400,886	2,724,379	2,682,899	41,480	2,724,379	2,101,686	32,494	2,134,180	6,147,941	68,252,945	53,466,890
2027	78,500,486	2,856,616	2,875,101	(18,485)	2,856,616	2,191,971	(14,093)	2,177,878	6,527,558	71,972,928	54,872,010
2028	82,712,584	2,965,216	3,053,040	(87,824)	2,965,216	2,265,335	(65,165)	2,200,170	6,868,089	75,844,495	56,276,092
2029	87,061,256	3,103,417	3,249,923	(146,506)	3,103,417	2,346,881	(105,797)	2,241,084	7,158,010	79,903,246	57,700,883
2030	91,442,135	3,253,064	3,506,588	(253,524)	3,253,064	2,464,455	(178,178)	2,286,277	7,405,195	84,036,940	59,061,767
2031	96,095,949	3,412,449	3,768,480	(356,031)	3,412,449	2,577,630	(243,524)	2,334,106	7,558,957	88,536,992	60,559,061
2032	100,757,518	3,567,167	4,036,377	(469,210)	3,567,167	2,686,979	(312,349)	2,374,630	7,618,669	93,138,849	62,001,673
2033	105,611,246	3,732,301	4,279,351	(547,050)	3,732,301	2,772,481	(354,420)	2,418,061	7,568,486	98,042,760	63,519,378
2034	110,636,465	3,913,328	4,598,526	(685,198)	3,913,328	2,899,529	(432,041)	2,467,488	7,437,703	103,198,762	65,070,384
2035	115,696,024	4,099,071	4,946,997	(847,926)	4,099,071	3,035,769	(520,337)	2,515,432	7,161,579	108,534,445	66,603,130
2036	120,958,741	4,296,382	5,118,601	(822,219)	4,296,382	3,057,007	(491,058)	2,565,949	6,707,540	114,251,201	68,234,811
2037	126,452,679	4,504,313	5,351,820	(847,507)	4,504,313	3,110,748	(492,614)	2,618,134	6,254,236	120,198,443	69,865,413
2038	132,315,989	4,724,729	5,547,641	(822,912)	4,724,729	3,138,267	(465,516)	2,672,751	5,750,712	126,565,277	71,597,216
2039	138,561,747	4,954,973	5,782,112	(827,139)	4,954,973	3,183,363	(455,384)	2,727,979	5,244,089	133,317,658	73,398,537
2040	145,177,447	5,199,357	6,044,214	(844,857)	5,199,357	3,238,603	(452,690)	2,785,913	4,705,375	140,472,072	75,267,568
2041	151,981,477	5,455,938	6,323,897	(867,959)	5,455,938	3,297,774	(452,622)	2,845,152	4,119,314	147,862,163	77,106,878
2042	159,257,448	5,738,261	6,654,332	(916,071)	5,738,261	3,377,215	(464,926)	2,912,289	3,477,917	155,779,531	79,061,423
2043	166,820,654	6,030,112	6,896,334	(866,222)	6,030,112	3,406,361	(427,860)	2,978,501	2,753,131	164,067,523	81,039,178
2044	174,894,324	6,343,467	7,302,106	(958,639)	6,343,467	3,510,255	(460,835)	3,049,420	2,038,331	172,855,993	83,095,024
2045	183,293,580	6,675,608	7,572,032	(896,424)	6,675,608	3,542,592	(419,394)	3,123,198	1,191,800	182,101,780	85,196,732
2046	192,230,942	7,020,008	7,874,925	(854,917)	7,020,008	3,585,695	(389,270)	3,196,425	360,925	191,870,017	87,364,305
2047	201,742,106	7,390,004	8,214,366	(824,362)	7,390,004	3,640,149	(365,311)	3,274,838	(474,141)	202,216,247	89,610,960

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical & Life Insurance - Partial 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"
2017	336	44,287,881	44,287,881	1,276,118	1,276,118
2018	385	47,146,737	45,884,902	1,426,117	1,387,948
2019	420	50,052,398	47,409,047	1,575,211	1,492,021
2020	443	53,122,564	48,970,387	1,732,017	1,596,639
2021	465	56,309,872	50,519,288	1,897,307	1,702,199
2022	489	59,616,522	52,054,405	2,019,320	1,763,177
2023	513	63,096,246	53,618,238	2,191,523	1,862,323
2024	536	66,714,399	55,175,562	2,374,721	1,963,992
2025	560	70,451,847	56,707,139	2,503,515	2,015,095
2026	581	74,400,886	58,282,964	2,682,899	2,101,686
2027	597	78,500,486	59,848,606	2,875,101	2,191,971
2028	610	82,712,584	61,372,166	3,053,040	2,265,335
2029	630	87,061,256	62,869,928	3,249,923	2,346,881
2030	648	91,442,135	64,266,191	3,506,588	2,464,455
2031	664	96,095,949	65,729,367	3,768,480	2,577,630
2032	677	100,757,518	67,073,351	4,036,377	2,686,979
2033	689	105,611,246	68,422,806	4,279,351	2,772,481
2034	701	110,636,465	69,760,112	4,598,526	2,899,529
2035	710	115,696,024	70,997,897	4,946,997	3,035,769
2036	717	120,958,741	72,240,788	5,118,601	3,057,007
2037	721	126,452,679	73,500,691	5,351,820	3,110,748
2038	724	132,315,989	74,850,359	5,547,641	3,138,267
2039	727	138,561,747	76,285,690	5,782,112	3,183,363
2040	729	145,177,447	77,788,796	6,044,214	3,238,603
2041	732	151,981,477	79,255,010	6,323,897	3,297,774
2042	734	159,257,448	80,826,540	6,654,332	3,377,215
2043	735	166,820,654	82,399,054	6,896,334	3,406,361
2044	736	174,894,324	84,074,887	7,302,106	3,510,255
2045	737	183,293,580	85,754,318	7,572,032	3,542,592
2046	736	192,230,942	87,528,646	7,874,925	3,585,695
2047	737	201,742,106	89,400,847	8,214,366	3,640,149
2048	736	211,779,146	91,336,937	8,617,973	3,716,793
2049	736	222,500,438	93,392,563	8,973,485	3,766,540
2050	736	233,719,096	95,475,906	9,359,551	3,823,443
2051	736	245,646,735	97,662,707	9,767,075	3,883,133
2052	736	258,332,567	99,957,432	10,285,802	3,979,918
2053	736	271,721,250	102,324,046	10,757,358	4,050,976
2054	736	285,827,082	104,755,213	11,119,470	4,075,270
2055	735	300,888,196	107,323,688	11,609,308	4,140,919
2056	734	316,897,060	110,008,646	12,079,722	4,193,393

EXHIBIT E

GLOSSARY

AAL – Actuarial Accrued Liability. That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

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."

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 be 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.