

**City of Newburyport Other
Postemployment Benefits Plan**

GASB 45 Actuarial Valuation

as of

July 1, 2016

For the fiscal year ending

June 30, 2017

Delivered October 2017

TABLE OF CONTENTSLETTERSECTIONPAGE

I	PRINCIPAL RESULTS OF THE VALUATION	1
II	SUMMARY OF PLAN PROVISIONS	10
III	ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS	11

EXHIBITS

A	FINANCIAL STATEMENT DISCLOSURES	22
B	RECONCILIATION OF PLAN PARTICIPANTS	33
C	PROJECTED CASH FLOWS (OPEN GROUP)	34
D	PROJECTED CASH FLOWS (OPEN GROUP) - FUNDING	35
E	GLOSSARY OF TERMS	39

October 13, 2017

Personal and Confidential

Mr. Ethan Manning
Finance Director/City Auditor
City of Newburyport
City Hall
60 Pleasant Street
Newburyport, MA 01950

Dear Mr. Manning:

We have performed an actuarial valuation of the City of Newburyport Other Postemployment Benefits Plan for the fiscal year ending June 30, 2017. The figures presented in this report reflect the adoption, by the City of Newburyport, of Statement No. 45 of the Governmental Accounting Standards Board ("GASB 45") effective July 1, 2008.


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

October 13, 2017

ACTUARIAL CERTIFICATION

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the City of Newburyport other postemployment benefit programs as of July 1, 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 City and on participant claims or premium data provided by the City and/or vendors employed by the City.

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 City 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

City of Newburyport
Assuming Partial Funding - 4.00% discount rate
Comparison of Plan Liabilities to Prior Valuation

	<u>July 1, 2016</u>	<u>July 1, 2014</u>
I. Present Value of Future Benefits		
A. Actives	61,807,366	59,327,959
B. Retirees/Disabled	<u>37,041,577</u>	<u>36,350,066</u>
C. Total	98,848,943	95,678,025
II. Present Value of Future Normal Cost	24,526,413	28,862,403
III. Actuarial Accrued Liability (Individual Entry Age Normal)		
A. Actives	37,280,953	30,465,556
B. Retirees/Disabled	<u>37,041,577</u>	<u>36,350,066</u>
C. Total	74,322,530	66,815,622
IV. Plan Assets	483,689	25,000
V. Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	73,838,841	66,790,622
VI. Funded Ratio [IV. / III.]	0.65%	0.04%
VII. Annual Covered Payroll	39,972,872	32,381,749
VIII. UAAL as % of Covered Payroll	184.70%	206.3%
IX. Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	30,378,025	22,544,102
X. Number of Eligible Participants		
A. Actives	550	540
B. Retirees/Disabled	<u>489</u>	<u>493</u>
C. Total	1,039	1,033
	<u>June 30, 2017</u>	<u>June 30, 2015</u>
XI. Normal Cost	2,594,826	2,525,540
XII. Amortization of UAAL - 30 year flat dollar	4,141,817	4,141,817
XIII. Annual Required Contribution ('ARC') [XI. + XII.]	6,736,643	6,667,357
XIV. Interest on Net OPEB Obligation (Asset)	1,215,121	901,764
XV. Adjustment to Annual Required Contribution	(1,689,197)	(1,253,585)
XVI. Amortization of Actuarial (Gains) / Losses	644,516	65,524
XVII. Annual OPEB Expense [XIII. + XIV. + XV. + XVI.]	6,907,083	6,381,060
XVIII. Employer Share of Costs	2,457,447	2,351,510
XIX. Employer Payments (Withdrawals) to/from OPEB Trust	25,000	450,000
XX. Total Employer Contribution [XVIII. + XIX.]	2,482,447	2,801,510
XXI. Percentage of Annual OPEB Expense Contributed	35.9%	43.9%
XXII. Net OPEB Obligation (Asset) at Beginning of Year [IX.]	30,378,025	22,544,102
XXIII. Increase (Decrease) in Net OPEB Obligations (Asset) [XVII. - XX.]	4,424,636	3,579,550
XXIV. Net OPEB Obligation (Asset) at End of Year [XXII. + XXIII.]	34,802,661	26,123,652
XXV. Discount Rate	4.00%	4.00%

SECTION I
PRINCIPAL RESULTS OF THE VALUATION
(continued)

City of Newburyport
Assuming Partial Funding - 4.00% discount rate
Plan Liabilities as of July 1, 2016

	<u>Medical</u>	<u>Dental</u>	<u>Life</u>	<u>Excise Tax</u>	<u>Total</u>
I. Present Value of Future Benefits					
A. Actives	60,623,365	0	348,319	835,682	61,807,366
B. Retirees/Disabled	<u>35,945,721</u>	<u>0</u>	<u>883,002</u>	<u>212,854</u>	<u>37,041,577</u>
C. Total	96,569,086	0	1,231,321	1,048,536	98,848,943
II. Present Value of Future Normal Cost	23,934,143	0	107,991	484,279	24,526,413
III. Actuarial Accrued Liability (Individual Entry Age Normal)					
A. Actives	36,689,222	0	240,328	351,403	37,280,953
B. Retirees/Disabled	<u>35,945,721</u>	<u>0</u>	<u>883,002</u>	<u>212,854</u>	<u>37,041,577</u>
C. Total	72,634,943	0	1,123,330	564,257	74,322,530
IV. Plan Assets	472,708	0	7,311	3,670	483,689
V. Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	72,162,235	0	1,116,019	560,587	73,838,841
VI. Annual Covered Payroll	39,972,872	39,972,872	39,972,872	39,972,872	39,972,872
VII. UAAL as % of Covered Payroll	180.5%	0.0%	2.8%	1.4%	184.7%
VIII. Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	29,688,254	0	459,141	230,630	30,378,025
IX. Number of Eligible Participants					
A. Actives	550	550	550	550	
B. Retirees/Disabled	<u>489</u>	<u>0</u>	<u>384</u>	<u>489</u>	
C. Total	1,039	550	934	1,039	

For Fiscal Year Ending June 30, 2017

X. Normal Cost	2,541,400	0	13,809	39,617	2,594,826
XI. Amortization of UAAL - 30 year flat dollar	4,047,772	0	62,600	31,445	4,141,817
XII. Annual Required Contribution ('ARC') [X. + XI.]	6,589,172	0	76,409	71,062	6,736,643
XIII. Interest on Net OPEB Obligation (Asset)	1,187,531	0	18,365	9,225	1,215,121
XIV. Adjustment to Annual Required Contribution	(1,650,841)	0	(25,531)	(12,825)	(1,689,197)
XV. Amortization of Actuarial (Gains) / Losses	629,882	0	9,741	4,893	644,516
XVI. Annual OPEB Expense [XII. + XIII. + XIV. + XV.]	6,755,744	0	78,984	72,355	6,907,083
XVII. Employer Share of Costs	2,404,838	0	52,609	0	2,457,447
XVIII. Employer Payments (Withdrawals) to/from OPEB Trust	24,432	0	378	190	25,000
XIX. Total Employer Contribution [XVII. + XVIII.]	2,429,270	0	52,987	190	2,482,447
XX. Percentage of Annual OPEB Expense Contributed	36.0%	0.0%	67.1%	0.3%	35.9%
XXI. Net OPEB Obligation (Asset) at Beginning of Year [VIII.]	29,688,254	0	459,141	230,630	30,378,025
XXII. Increase (Decrease) in Net OPEB Obligations (Asset) [XVI. - XIX.]	4,326,474	0	25,997	72,165	4,424,636
XXIII. Net OPEB Obligation (Asset) at End of Year [XXI. + XXII.]	34,014,728	0	485,138	302,795	34,802,661

SECTION I
PRINCIPAL RESULTS OF THE VALUATION
(continued)

City of Newburyport
Assuming Partial Funding - 4.00% discount rate
Plan Liabilities as of July 1, 2016

	General Government Employees and Retirees	School Employees and Retirees	Sewer Enterprise Employees and Retirees	Water Enterprise Employees and Retirees	Total
I. Present Value of Future Benefits					
A. Actives	21,717,385	35,984,682	2,066,372	2,038,927	61,807,366
B. Retirees/Disabled	<u>14,188,915</u>	<u>21,456,867</u>	<u>536,596</u>	<u>859,199</u>	<u>37,041,577</u>
C. Total	35,906,300	57,441,549	2,602,968	2,898,126	98,848,943
II. Present Value of Future Normal Cost	9,147,619	13,753,586	782,024	843,184	24,526,413
III. Actuarial Accrued Liability (Individual Entry Age Normal)					
A. Actives	12,569,766	22,231,096	1,284,348	1,195,743	37,280,953
B. Retirees/Disabled	<u>14,188,915</u>	<u>21,456,867</u>	<u>536,596</u>	<u>859,199</u>	<u>37,041,577</u>
C. Total	26,758,681	43,687,963	1,820,944	2,054,942	74,322,530
IV. Plan Assets	174,696	283,799	11,879	13,315	483,689
V. Unfunded Actuarial Accrued Liability ("UAAL") [III. - IV.]	26,583,985	43,404,164	1,809,065	2,041,627	73,838,841
VI. Annual Covered Payroll	14,261,517	23,313,469	1,048,899	1,348,987	39,972,872
VII. UAAL as % of Covered Payroll	186.4%	186.2%	172.5%	151.3%	184.7%
VIII. Net OPEB Obligation (Asset) @ Beginning of Fiscal Year	11,732,676	16,004,631	1,144,757	1,495,961	30,378,025
IX. Number of Eligible Participants					
A. Actives	181	333	16	20	550
B. Retirees/Disabled	<u>180</u>	<u>278</u>	<u>12</u>	<u>19</u>	<u>489</u>
C. Total	361	611	28	39	1,039
For Fiscal Year Ending June 30, 2017					
X. Normal Cost	892,494	1,516,784	90,184	95,364	2,594,826
XI. Amortization of UAAL - 30 year flat dollar	1,440,452	2,235,139	195,587	270,639	4,141,817
XII. Annual Required Contribution ('ARC') [X. + XI.]	2,332,946	3,751,923	285,771	366,003	6,736,643
XIII. Interest on Net OPEB Obligation (Asset)	469,307	640,185	45,791	59,838	1,215,121
XIV. Adjustment to Annual Required Contribution	(652,406)	(889,952)	(63,655)	(83,184)	(1,689,197)
XV. Amortization of Actuarial (Gains) / Losses	232,048	378,857	15,791	17,820	644,516
XVI. Annual OPEB Expense [XII. + XIII. + XIV. + XV.]	2,381,895	3,881,013	283,698	360,477	6,907,083
XVII. Employer Share of Costs	880,745	1,472,646	35,264	68,792	2,457,447
XVIII. Employer Payments (Withdrawals) to/from OPEB Trust	9,001	14,695	613	691	25,000
XIX. Total Employer Contribution [XVII. + XVIII.]	889,746	1,487,341	35,877	69,483	2,482,447
XX. Percentage of Annual OPEB Expense Contributed	37.0%	37.9%	12.4%	19.1%	35.6%
XXI. Net OPEB Obligation (Asset) at Beginning of Year [VIII.]	11,732,676	16,004,631	1,144,757	1,495,961	30,378,025
XXII. Increase (Decrease) in Net OPEB Obligations (Asset) [XVI. - XIX.]	1,492,149	2,393,672	247,821	290,994	4,424,636
XXIII. Net OPEB Obligation (Asset) at End of Year [XXI. + XXII.]	13,224,825	18,398,303	1,392,578	1,786,955	34,802,661

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

City of Newburyport
Detail of Plan Liabilities by Group and Dependency Status
Assuming Partial Funding - 4.00% discount rate
Plan Liabilities as of July 1, 2016

	<u>Present Value of Future Benefits</u>	<u>Actuarial Accrued Liability (Individual Entry Age Normal)</u>	<u>Normal Cost</u>
Actives			
Under Age 65			
A. Participants	11,579,462	7,211,905	441,959
B. Spouses	<u>8,342,479</u>	<u>5,190,812</u>	<u>313,565</u>
C. Total	19,921,941	12,402,717	755,524
Age 65 and Over			
A. Participants	24,338,692	14,447,732	1,071,877
B. Spouses	<u>17,546,733</u>	<u>10,430,504</u>	<u>767,425</u>
C. Total	41,885,425	24,878,236	1,839,302
Actives Total			
A. Participants	35,918,154	21,659,637	1,513,836
B. Spouses	<u>25,889,212</u>	<u>15,621,316</u>	<u>1,080,990</u>
C. Total	61,807,366	37,280,953	2,594,826
Retirees/Disabled			
Under Age 65			
A. Participants	2,829,040	2,829,040	0
B. Spouses	<u>1,750,496</u>	<u>1,750,496</u>	<u>0</u>
C. Total	4,579,536	4,579,536	0
Age 65 and Over			
A. Participants	22,547,633	22,547,633	<u>0</u>
B. Spouses	<u>9,914,408</u>	<u>9,914,408</u>	<u>0</u>
C. Total	32,462,041	32,462,041	0
Retirees/Disabled Total			
A. Participants	25,376,673	25,376,673	0
B. Spouses	<u>11,664,904</u>	<u>11,664,904</u>	<u>0</u>
C. Total	37,041,577	37,041,577	0
Total Population			
A. Participants	61,294,827	47,036,310	1,513,836
B. Spouses	<u>37,554,116</u>	<u>27,286,220</u>	<u>1,080,990</u>
C. Total	98,848,943	74,322,530	2,594,826

Overview of GASB 43 and 45

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

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

Overview of GASB 43 and 45

(continued)

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

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

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

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

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

Since the liability is being recognized over the employee's whole career with the City, 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 City's financial statements as the Net OPEB Obligation. If you decide to fully fund the OPEB obligation this will appear in the financial statement as a Net OPEB Asset. In addition, the Discount Rate used to calculate the liabilities must reflect the expected investment income of whatever funds are set aside to prefund the benefits; if there is no prefunding then the Discount Rate will be much lower and the liabilities significantly higher than if the benefits are prefunded.

Commentary on Plan Experience and Contribution Amounts

1. GASB 45 – How we got here:

The Plan adopted and implemented GASB 45 (“Accounting and Financial Reporting by Employers for Postemployment Benefits other than Pensions”) effective for the fiscal year ending June 30, 2009. 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 loss of \$1,695,128 or 2.35%. Plan experience was in line with expectation. This slight experience loss was mainly due to updated teacher retirement assumptions. This was mostly offset by premiums for Medicare integrated plans increasing less than the expected 10% increase. The actuarial experience loss is amortized into the annual OPEB costs over a 30-year period. The net impact of plan experience is an increase in the annual OPEB cost.

Commentary on Plan Experience and Contribution Amounts
(continued)

3. **Balance Sheet Items**

	July 1, 2016	July 1, 2014
Actuarial Accrued Liability	\$74,322,530	\$66,815,622
Plan Assets	\$483,689	\$25,000
Unfunded Actuarial Accrued Liability	\$73,838,841	\$66,790,622
Funded %	0.65%	0.04%
Net OPEB Obligation	\$30,378,025	\$22,544,102

4. **Income Statement Items**

	June 30, 2017	June 30, 2015
Normal Cost	\$2,594,826	\$2,525,540
Amortization of UAAL	\$4,141,817	\$4,141,817
Interest on Net OPEB Obligation	\$1,215,121	\$901,764
Adjustment to Annual Required Contribution	\$(1,689,197)	\$(1,253,585)
Amortization of Actuarial (Gains)/Losses	\$644,516	\$65,524
Annual OPEB Expense	\$6,907,083	\$6,381,060
Employer Share of Costs Employer Contributions/(Withdrawals) to/from OPEB Trust	\$2,457,447	\$2,351,510
Total Employer Contribution	\$2,482,447	\$2,801,510
Discount Rate	4.00%	4.00%

Commentary on Plan Experience and Contribution Amounts
(continued)

5. **Implicit Subsidy:**

The implicit subsidy arises because pre-Medicare retirees are charged the same premium as active employees, even though their actual medical costs are higher on average. Consequently, a portion of the premiums being paid for active employees are actually being used to “subsidize” the premiums of retirees. Actuarial Standards of Practice and GASB standards require the liability associated with this implicit subsidy to be valued. The chart below shows a breakdown of how implicit cost impacts reported cash flows and liabilities.

Valuation Date	<u>July 1, 2016</u>	<u>July 1, 2014</u>
Liability		
I. Actuarial Accrued Liability	74,322,530	66,815,622
II. Actuarial Accrued Liability (Excluding Implicit Subsidy)	<u>66,308,052</u>	N/A
III. Liability from Implicit Subsidy [I. - II.]	8,014,478	N/A
For Fiscal Year Ending	<u>June 30, 2017</u>	<u>June 30, 2015</u>
Payments		
IV. Employer Payments (Including Implicit Subsidy)	2,457,447	2,351,510
V. Actual Employer Payments	<u>2,168,509</u>	N/A
VI. Implicit Subsidy [IV. - V.]	288,938	N/A

6. **GASB 75 – Where we’re going:**

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

SECTION II

SUMMARY OF PLAN PROVISIONS

<u>Effective Date</u>	July 1, 2008; GASB 45 is adopted.
<u>Plan Year</u>	July 1 through June 30.
<u>Eligibility</u>	An employee hired before April 2, 2012 shall become eligible to retire under this plan upon attainment of age 55 as an active member and completion of 10 years of service or an employee shall be able to retire with 20 years of service regardless of age. Those hired on or after April 2, 2012 shall be eligible to retire upon attainment of age 60 with 10 years of creditable service.
<u>Creditable Service</u>	Elapsed time from date of hire to termination of service date.
<u>Participant Contributions</u>	Retirees shall pay 25% of premiums for Medical Insurance, 10% for Life Insurance and 100% for Dental Insurance.
<u>Benefits Offered</u>	Various Medical offerings via Blue Cross Blue Shield of Massachusetts as well as Dental and Group Term Life Insurance.
<u>Normal Retirement Date</u>	The normal retirement date is the first day of the month following a participant's 65th birthday.
<u>Early Retirement</u>	Early retirement is available for any participant who has attained benefit eligibility.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

A. ACTUARIAL COST METHOD

The actuarial cost method used to calculate the costs and liabilities of the plan is the Individual Entry Age Normal Actuarial Cost Method. Under this method, the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement. 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 IIIACTUARIAL 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

4.00% per annum (previously 4.00%)

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						
<u>Age</u>	<u>0-4 Years of Service (Males)</u>	<u>0-4 Years of Service (Females)</u>	<u>5-9 Years of Service (Males)</u>	<u>5-9 Years of Service (Females)</u>	<u>10+ Years of Service (Males)</u>	<u>10+ Years of Service (Females)</u>
20	27.00%	27.00%	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		
<u>Service</u>	<u>Male</u>	<u>Female</u>
0	9.00%	9.00%
5	6.00%	6.00%
10	3.50%	3.50%
15	2.00%	2.00%
20	1.50%	1.50%
25	1.50%	1.50%
30	1.50%	1.50%

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Retirement Rates for non-teachers

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

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

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Retirement Rates for teachers

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

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

In the absence of census data specifying which employees are teachers it was assumed that two thirds of school employees are teachers. If available, actual census data was used.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Disability rates

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

<u>Age</u>	<u>Standard</u>	<u>Teachers</u>	<u>Public Safety</u>
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:

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

Participation Rate

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

Percent Married

It was assumed that 80% of male participants and 70% of female participants who elect retiree healthcare coverage for themselves would also elect coverage for a spouse upon retirement. It was further assumed that a male spouse is three years older than a female spouse and same sex spouses are assumed to be the same age. For current retirees, the actual census information was used.

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Compensation Increases

3.00% per year.

Open Group Forecast

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

Open Group Forecast Population Demographics

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

Additional Comments

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

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

Medicare Part B Penalties are not reflected

Medicare Part B Reimbursement is not reflected

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

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

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

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

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

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

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

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

	Number of Participants			
	Single	Two-Person	Family	Total
HMO Blue New England	137		266	403
PPO Blue Care Elect	32		82	114
HMO Limited Network			6	6
Medex II	145	108		253
Total	314	108	354	776

	Per Contract Costs (monthly) - FY 2018		
	Single	Two-Person	Family
HMO Blue New England	771.99	0.00	2,022.72
PPO Blue Care Elect	894.59	0.00	2,344.08
HMO Limited Network	717.95	0.00	1,881.13
Medex II	324.52	649.04	

Gross Expected FY 2018 Incurred Premiums	11,917,033
Adjustment to reflect children's claims	(2,106,216)
Total Expected FY 2018 Incurred Premiums (adults only)	9,810,817

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

	Employer <u>Primary</u>	Medicare <u>Primary</u>
Age 65	13,139	3,234
Average Age	12,844	3,894

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

9,810,817 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	8,061	3,373	19,495
25 to 29	1.312	0.591	8,061	3,631	201,960
30 to 34	1.312	0.712	8,061	4,375	416,382
35 to 39	1.312	0.850	8,061	5,222	505,666
40 to 44	1.312	1.000	8,061	6,144	708,726
45 to 49	1.456	1.193	8,946	7,330	908,108
50 to 54	1.599	1.441	9,824	8,854	1,096,182
55 to 59	1.740	1.753	10,691	10,770	1,212,270
60 to 64	1.968	2.102	12,091	12,915	1,190,669
65 to 69	2.168	2.316	13,320	14,230	460,490
70 & Over	2.396	2.557	14,721	15,710	<u>121,724</u>
Total					6,841,672

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	8,061	6,144	14,205
45 to 49	1.456	1.193	8,946	7,330	14,660
50 to 54	1.599	1.441	9,824	8,854	9,824
55 to 59	1.740	1.753	10,691	10,770	235,834
60 to 64	1.968	2.102	12,091	12,915	748,532
65 to 69	2.168	2.316	13,320	14,230	95,060
70 to 74	2.396	2.557	14,721	15,710	152,155
75 to 79	2.593	2.769	15,931	17,013	97,750
80 to 84	2.724	2.910	16,736	17,879	70,373
85 to 89	2.864	3.059	17,596	18,794	71,582
90 & Over	3.010	3.215	18,493	19,753	<u>18,493</u>
Total					1,528,468

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	3,278	3,502	272,238
70 to 74	2.396	2.557	3,623	3,867	453,511
75 to 79	2.593	2.769	3,921	4,187	300,262
80 to 84	2.724	2.910	4,119	4,401	178,920
85 to 89	2.864	3.059	4,331	4,626	138,686
90 & Over	3.010	3.215	4,552	4,862	<u>97,142</u>
Total					1,440,759

Grand Totals 9,810,899

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD
AND ACTUARIAL ASSUMPTIONS

(continued)

E. DEVELOPMENT OF REPRESENTATIVE DENTAL PER CAPITA CLAIMS COSTS

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

	Per Contract Costs (monthly) - FY 2018		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
Dental Plan	48.98	97.95	171.40

FY 2018 Expected Per Person Rate 588

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 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 & Medicare Supplement coverages through Blue Cross Blue Shield of Massachusetts.
- b. Administrator: City of Newburyport
- 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: 25% Participant paid.

2. A DESCRIPTION OF THE RETIREE DENTAL INSURANCE PROGRAM:

- a. Plan Type: Comprehensive Dental
- b. Administrator: City of Newburyport
- c. Eligibility: Same as above
- d. Cost sharing: 100% Participant paid.

3. A DESCRIPTION OF THE RETIREE LIFE INSURANCE PROGRAM:

- a. Plan Type: Group Term Life Insurance - \$5,000
- b. Administrator: City of Newburyport
- c. Eligibility: Same as above
- d. Cost sharing: 10% Participant paid.

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2016)

(continued)

4. RETIREE MEDICAL AND LIFE INSURANCE CONTRIBUTIONS:

Group	Individual	Family
Medical	25%	25%
Dental	100%	100%
Life	10%	N/A

5. FUNDING POLICY

The contribution requirements of plan members and the City are established and may be amended through City ordinances. For the 2017 fiscal year, total City premiums plus implicit costs for the retiree medical program are \$2,457,447. The City is also projected to make a contribution to an OPEB Trust of \$25,000 for the 2017 fiscal year for a total contribution of \$2,482,447 .

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2016)

(continued)

6. ANNUAL OPEB COST AND NET OPEB OBLIGATION

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

Annual Required Contribution	\$6,736,643
Interest on Net OPEB Obligation (Asset)	\$1,215,121
Adjustment to annual required contribution	(\$1,689,197)
Amortization of Actuarial (Gains) / Losses	\$644,516
Annual OPEB expense	\$6,907,083
Contributions made to pay benefits	\$2,457,447
Contributions made to OPEB Trust	\$25,000
Increase (Decrease) in net OPEB Obligation (Asset)	\$4,424,636
Net OPEB Obligation (Asset) – beginning of year	\$30,378,025
Net OPEB Obligation (Asset) – end of year	\$34,802,661

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2016)

(continued)

The City'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.)	\$7,535,534	\$2,845,356	37.8%	\$4,690,178	\$44,037,436
06/30/2018 (est.)	\$7,226,377	\$2,681,780	37.1%	\$4,544,597	\$39,347,258
06/30/2017	\$6,907,083	\$2,482,447	35.9%	\$4,424,636	\$34,802,661
06/30/2016	\$6,690,077	\$2,435,704	36.4%	\$4,254,373	\$30,378,025
06/30/2015	\$6,381,060	\$2,801,510	43.9%	\$3,579,550	\$26,123,652
06/30/2014	\$4,993,142	\$1,584,126	31.7%	\$3,409,016	\$22,544,102

Schedule of Funding Progress:

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	UAAL as a % of Covered Payroll
07/01/2018 (est.)	\$619,390	\$80,619,406	\$80,000,016	0.8%	\$42,407,220	188.6%
07/01/2017 (est.)	\$571,053	\$77,487,936	\$76,916,883	0.7%	\$41,172,058	186.8%
07/01/2016	\$483,689	\$74,322,530	\$73,838,841	0.7%	\$39,972,872	184.7%
07/01/2015	\$475,010	\$69,669,240	\$69,194,230	0.7%	\$33,353,201	207.5%
07/01/2014	\$25,000	\$66,815,622	\$66,790,622	0.0%	\$32,381,749	206.3%
07/01/2013	\$0	\$52,951,842	\$52,951,842	0.0%	N/A	N/A

EXHIBIT A

Financial Statement Disclosure
(As of July 1, 2016)
(continued)

	Fiscal Year Ending June 30, 2017				Total
	General Government Employees and Retirees	School Employees and Retirees	Sewer Enterprise Employees and Retirees	Water Enterprise Employees and Retirees	
OPEB Obligation (Asset) at beginning of year	11,732,676	16,004,631	1,144,757	1,495,961	30,378,025
Annual Required Contribution	2,332,946	3,751,923	285,771	366,003	6,736,643
Interest on Net OPEB Obligation	469,307	640,185	45,791	59,838	1,215,121
Adjustment to the ARC	(652,406)	(889,952)	(63,655)	(83,184)	(1,689,197)
Amortization of Actuarial (Gains)/Losses	232,048	378,857	15,791	17,820	644,516
Annual OPEB Cost	2,381,895	3,881,013	283,698	360,477	6,907,083
Expected Employer Contribution	880,745	1,472,646	35,264	68,792	2,457,447
Contribution (Withdrawal) to/from Trust Fund over 30 Years	9,001	14,695	613	691	25,000
Total Expected Employer Payments	889,746	1,487,341	35,877	69,483	2,482,447
Increase (Decrease) in OPEB Obligation (Asset)	1,492,149	2,393,672	247,821	290,994	4,424,636
OPEB Obligation (Asset) at end of year	13,224,825	18,398,303	1,392,578	1,786,955	34,802,661
AAL as of July 1, 2016	26,758,681	43,687,963	1,820,944	2,054,942	74,322,530
Plan Assets as of July 1, 2016	174,696	283,799	11,879	13,315	483,689
Unfunded Actuarial Liability as of July 1, 2016	26,583,985	43,404,164	1,809,065	2,041,627	73,838,841

EXHIBIT AFinancial Statement Disclosure

(As of July 1, 2016)

(continued)

7. FUNDED STATUS AND FUNDING PROGRESS

As of July 1, 2016, the most recent valuation date, the plan was 0.65% funded. The actuarial liability for benefits was \$74,322,530, and the actuarial value of assets was \$483,689, resulting in an unfunded actuarial accrued liability (UAAL) of \$73,838,841. The covered payroll (annual payroll of active employees covered by the plan) was \$ 39,972,872 and the ratio of the UAAL to the covered payroll was 184.7%.

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

8. EFFECT OF 1% CHANGE IN HEALTHCARE TREND RATES

In the event that healthcare trend rates were 1% higher than forecast and employee contributions were to increase at the forecast rates, the Actuarial Accrued Liability would increase to \$93,718,524 or by 26.1% and the corresponding Normal Cost would increase to \$3,815,632 or by 47.0%. 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 \$59,782,734 or by 19.6% and the corresponding Normal Cost would decrease to \$1,780,251 or by 31.4%.

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2016)

(continued)

9. ACTUARIAL METHODS AND ASSUMPTIONS

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

Actuarial Cost Method: Individual Entry Age Normal
 Investment Rate of Return: 4.00% per annum (previously 4.00%)
 Healthcare Trend Rates

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

General Inflation Assumption: 2.75% per annum
 Annual Compensation Increases: 3.00% per annum
 Actuarial Value of Assets: Market Value
 Amortization of UAAL: Level dollar amortization over 30 years
 Remaining Amortization Period: 22 years at July 1, 2016

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2016)

(continued)

10. Remaining Amortization Bases

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

Changes in Unfunded Actuarial Liability Since Prior Valuation
--

Expected Unfunded Actuarial Liability

1. Actuarial Accrued Liability at prior valuation date	66,815,622
2. Actuarial Value of Assets at prior valuation date	<u>25,000</u>
3. Unfunded Actuarial Accrued Liability at prior valuation date [1. - 2.]	66,790,622
4. Normal Cost for prior periods	5,051,080
5. Employer Contributions for prior periods	(5,237,214)
6. Interest to current valuation date	<u>5,539,225</u>
7. Expected Unfunded Actuarial Accrued Liability before assumption changes [3. + 4. + 5. + 6.]	72,143,713

Net Actuarial (Gain) / Loss due to assumption changes

8. Actuarial Cost Method Change	N/A
9. Interest Rate Change	N/A
10. Mortality Assumption Change	<u>N/A</u>
11. Expected Unfunded Actuarial Accrued Liability including assumption changes [7. + 8. + 9. + 10.]	72,143,713

Actual Unfunded Actuarial Liability

12. Actuarial Accrued Liability at current valuation date	74,322,530
13. Actuarial Value of Assets at current valuation date	<u>483,689</u>
14. Unfunded Actuarial Accrued Liability at current valuation date [12. - 13.]	73,838,841

Net Actuarial (Gain) / Loss from Plan Experience [14. - 11.] 1,695,128

15. Unfunded Actuarial Accrued Liability at current valuation date [14.]	73,838,841
16. Remaining Initial Unfunded to be amortized	<u>62,248,030</u>
17. Actuarial (Gain) / Loss to be amortized: [15. - 16.]	11,590,811

EXHIBIT A

Financial Statement Disclosure

(As of July 1, 2016)

(continued)

10. Remaining Amortization Bases (Continued)

Amortization of Initial Unfunded and Plan Experience under GASB 45						
Date Established	Description	Initial Amount	Initial Amortization Period	Remaining Balance at Valuation Date	Remaining Amortization Period	Annual Amortization Payment
July 1, 2008	GASB 45 Liability	74,485,260	30	62,248,030	22	4,141,817
July 1, 2016	Cumulative (Gain) / Loss	11,590,811	30	11,590,811	30	644,516
July 1, 2016	Adjustment to ARC	(30,378,025)	30	(30,378,025)	30	(1,689,196)

11. Recognition of OPEB trust assets

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

EXHIBIT AFinancial Statement Disclosure

(As of July 1, 2016)

(continued)

12. Impact of Patient Protection and Affordable Care Act ("PPACA") Excise Tax

Under the Patient Protection and Affordable Care Act ("PPACA"), an excise tax will be imposed for tax years beginning after December 31, 2019 (formerly December 31, 2017, but amended by Consolidated Appropriations Act) for high cost employer sponsored health coverage. The law specifies a 40% excise tax, to be paid by the provider of such coverage, of the excess value beyond a basic dollar amount plus an additional "kicker" for qualified retirees or those engaged in a high risk profession. The 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 \$564,257 and the increase in annual OPEB Cost is \$72,355. Given your premiums through the 2018 fiscal year and the excise tax threshold, your average single premiums are \$5,246 below the excise tax threshold and your average family premiums are \$7,010 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 July 1, 2016)

ACTIVE EMPLOYEES

	<u>July 1, 2016</u>	<u>July 1, 2014</u>
A. Average Age at Hire	36.69	37.17
B. Average Service	<u>9.68</u>	<u>9.71</u>
C. Average Current Age	46.37	46.88

RETIRED EMPLOYEES & DEPENDENTS

	<u>July 1, 2016</u>	<u>July 1, 2014</u>
I. Retirees		
A. Under Age 65	60	72
B. Age 65 & Over	<u>278</u>	<u>275</u>
C. Total Retirees	338	347
II. Dependents of Retirees		
A. Under Age 65	37	40
B. Age 65 & Over	<u>114</u>	<u>106</u>
C. Total Retirees	151	146
III. Retirees & Dependents		
A. Under Age 65	97	112
B. Age 65 & Over	<u>392</u>	<u>381</u>
C. Total Retirees	489	493

EXHIBIT C

Projected Cash Flows (Open Group) – Partial Funding Approach

Total Medical, Dental & Life Insurance - Partial Funding - 4.00% discount rate												
Fiscal Year Ending	Valuation Date	I. Total Actuarial Accrued Liability ("AAL") as of Valuation Date	II. Plan Assets as of		III. Unfunded Accrued Actuarial Liability ("UAL") [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.]
			Valuation Date with Expected 4.00% Return	Valuation Date								
						30,378,025						
June 30, 2017	July 1, 2016	74,322,530	483,689	73,838,841	0.65%	34,802,661	2,594,826	6,907,083	2,457,447	25,000	2,482,447	
June 30, 2018	July 1, 2017	77,487,936	571,053	76,916,883	0.74%	39,347,258	2,737,134	7,226,377	2,656,780	25,000	2,681,780	
June 30, 2019	July 1, 2018	80,619,406	619,390	80,000,016	0.77%	44,037,436	2,864,507	7,535,534	2,820,356	25,000	2,845,356	
June 30, 2020	July 1, 2019	83,890,100	669,661	83,220,439	0.80%	48,955,833	3,004,808	7,863,442	2,920,045	25,000	2,945,045	
June 30, 2021	July 1, 2020	87,333,856	721,943	86,611,913	0.83%	54,057,718	3,148,450	8,203,819	3,076,934	25,000	3,101,934	
June 30, 2022	July 1, 2021	90,901,247	776,316	90,124,931	0.85%	59,368,013	3,287,773	8,547,218	3,211,923	25,000	3,236,923	
June 30, 2023	July 1, 2022	94,611,817	832,864	93,778,953	0.88%	64,961,600	3,446,349	8,918,206	3,299,619	25,000	3,324,619	
June 30, 2024	July 1, 2023	98,548,889	891,674	97,657,215	0.90%	70,783,300	3,610,199	9,305,800	3,459,101	25,000	3,484,101	
June 30, 2025	July 1, 2024	102,642,993	952,836	101,690,157	0.93%	76,892,540	3,790,234	9,718,702	3,584,462	25,000	3,609,462	
June 30, 2026	July 1, 2025	106,915,381	1,016,445	105,898,936	0.95%	83,264,189	3,963,435	10,136,273	3,739,625	25,000	3,764,625	
June 30, 2027	July 1, 2026	111,385,964	1,082,598	110,303,366	0.97%	89,870,511	4,149,342	10,577,046	3,945,724	25,000	3,970,724	
June 30, 2028	July 1, 2027	115,997,034	1,151,397	114,845,637	0.99%	96,751,275	4,320,273	11,012,229	4,106,465	25,000	4,131,465	
June 30, 2029	July 1, 2028	120,763,482	1,222,948	119,540,534	1.01%	103,911,597	4,524,992	11,492,178	4,306,856	25,000	4,331,856	
June 30, 2030	July 1, 2029	125,542,468	1,297,361	124,245,107	1.03%	111,360,785	4,734,582	11,988,182	4,513,994	25,000	4,538,994	
June 30, 2031	July 1, 2030	130,525,918	1,374,751	129,151,167	1.05%	119,089,899	4,953,728	12,505,295	4,751,181	25,000	4,776,181	
June 30, 2032	July 1, 2031	135,849,628	1,455,236	134,394,392	1.07%	127,132,168	5,191,451	13,052,183	4,984,914	25,000	5,009,914	
June 30, 2033	July 1, 2032	141,139,353	1,538,941	139,600,412	1.09%	135,530,057	5,432,134	13,614,556	5,191,667	25,000	5,216,667	
June 30, 2034	July 1, 2033	146,855,360	1,625,994	145,229,366	1.11%	144,306,195	5,693,416	14,211,754	5,410,616	25,000	5,435,616	
June 30, 2035	July 1, 2034	152,593,376	1,716,529	150,876,847	1.12%	153,471,791	5,972,563	14,841,947	5,651,351	25,000	5,676,351	
June 30, 2036	July 1, 2035	158,655,353	1,810,685	156,844,668	1.14%	163,180,584	6,265,307	15,501,314	5,767,520	25,000	5,792,520	
June 30, 2037	July 1, 2036	165,167,012	1,908,607	163,258,405	1.16%	173,384,215	6,575,614	16,199,973	5,971,342	25,000	5,996,342	
June 30, 2038	July 1, 2037	172,121,418	2,010,446	170,110,972	1.17%	184,059,734	6,891,850	16,924,354	6,223,835	25,000	6,248,835	
June 30, 2039	July 1, 2038	179,375,768	2,116,359	177,259,409	1.18%	191,125,354	7,237,139	13,554,848	6,464,228	25,000	6,489,228	
June 30, 2040	July 1, 2039	187,066,522	2,226,508	184,840,014	1.19%	198,573,393	7,605,168	14,205,501	6,732,462	25,000	6,757,462	
June 30, 2041	July 1, 2040	195,058,377	2,341,063	192,717,314	1.20%	206,411,871	8,000,398	14,898,653	7,035,175	25,000	7,060,175	
June 30, 2042	July 1, 2041	203,720,466	2,460,201	201,260,265	1.21%	214,668,059	8,425,661	15,637,455	7,356,267	25,000	7,381,267	
June 30, 2043	July 1, 2042	212,765,448	2,584,104	210,181,344	1.21%	223,526,521	8,867,356	16,409,397	7,525,936	25,000	7,550,936	
June 30, 2044	July 1, 2043	222,570,536	2,712,963	219,857,573	1.22%	232,986,670	9,346,361	17,242,741	7,757,593	25,000	7,782,593	
June 30, 2045	July 1, 2044	232,889,262	2,846,977	230,042,285	1.22%	242,990,198	9,836,148	18,110,934	8,082,406	25,000	8,107,406	
June 30, 2046	July 1, 2045	243,766,897	2,986,351	240,780,546	1.23%	253,702,866	10,366,389	19,041,316	8,303,649	25,000	8,328,649	
June 30, 2047	July 1, 2046	255,360,552	3,131,300	252,229,252	1.23%	266,183,561	10,916,204	21,064,319	8,558,624	25,000	8,583,624	
June 30, 2048	July 1, 2047	267,721,203	3,282,047	264,439,156	1.23%	279,397,670	11,493,540	22,140,883	8,901,774	25,000	8,926,774	

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical, Dental & Life Insurance - Funding over 30 years at 7.00% discount rate increasing at 0.00% per year											
Fiscal Year Ending	Valuation Date	I. Total Actuarial Accrued Liability ("AAL") as of Valuation Date	II. Plan Assets as of Valuation Date with Expected 7.00% Return	III. Unfunded Accrued		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.]
				Actuarial Liability ("UAAL") [I. - II.]	IV. Funded Ratio [II. / I.]						
June 30, 2017	July 1, 2016	49,777,490	483,689	49,293,801	0.97%	30,378,025	1,230,504	5,352,845	2,457,447	25,000	2,482,447
June 30, 2018	July 1, 2017	51,949,085	571,053	51,378,032	1.10%	34,338,673	1,301,562	5,624,830	2,656,780	1,877,800	4,534,580
June 30, 2019	July 1, 2018	54,135,438	2,553,438	51,582,000	4.72%	35,405,496	1,365,393	5,764,979	2,820,356	1,877,800	4,698,156
June 30, 2020	July 1, 2019	56,368,108	4,674,590	51,693,518	8.29%	36,517,052	1,435,137	5,909,401	2,920,045	1,877,800	4,797,845
June 30, 2021	July 1, 2020	58,725,025	6,944,223	51,780,802	11.82%	37,620,274	1,505,883	6,057,956	3,076,934	1,877,800	4,954,734
June 30, 2022	July 1, 2021	61,154,572	9,372,730	51,781,842	15.33%	38,732,309	1,572,460	6,201,758	3,211,923	1,877,800	5,089,723
June 30, 2023	July 1, 2022	63,678,411	11,971,233	51,707,178	18.80%	39,910,831	1,648,800	6,355,941	3,299,619	1,877,800	5,177,419
June 30, 2024	July 1, 2023	66,369,524	14,751,631	51,617,893	22.23%	41,090,982	1,727,414	6,517,052	3,459,101	1,877,800	5,336,901
June 30, 2025	July 1, 2024	69,159,836	17,726,657	51,433,179	25.63%	42,314,624	1,813,656	6,685,904	3,584,462	1,877,800	5,462,262
June 30, 2026	July 1, 2025	72,075,745	20,909,934	51,165,811	29.01%	43,550,915	1,895,812	6,853,716	3,739,625	1,877,800	5,617,425
June 30, 2027	July 1, 2026	75,123,579	24,316,041	50,807,538	32.37%	44,755,544	1,983,709	7,028,153	3,945,724	1,877,800	5,823,524
June 30, 2028	July 1, 2027	78,247,172	27,960,575	50,286,597	35.73%	45,959,279	2,059,234	7,188,000	4,106,465	1,877,800	5,984,265
June 30, 2029	July 1, 2028	81,472,231	31,860,227	49,612,004	39.11%	47,140,437	2,152,786	7,365,814	4,306,856	1,877,800	6,184,656
June 30, 2030	July 1, 2029	84,679,062	36,032,854	48,646,208	42.55%	48,292,678	2,248,326	7,544,035	4,513,994	1,877,800	6,391,794
June 30, 2031	July 1, 2030	87,999,493	40,497,565	47,501,928	46.02%	49,388,775	2,348,711	7,725,078	4,751,181	1,877,800	6,628,981
June 30, 2032	July 1, 2031	91,525,008	45,274,806	46,250,202	49.47%	50,437,897	2,458,742	7,911,836	4,984,914	1,877,800	6,862,714
June 30, 2033	July 1, 2032	94,977,876	50,386,454	44,591,422	53.05%	51,464,314	2,569,352	8,095,884	5,191,667	1,877,800	7,069,467
June 30, 2034	July 1, 2033	98,719,715	55,855,917	42,863,798	56.58%	52,464,663	2,690,384	8,288,765	5,410,616	1,877,800	7,288,416
June 30, 2035	July 1, 2034	102,444,320	61,708,243	40,736,077	60.24%	53,423,855	2,819,938	8,488,343	5,651,351	1,877,800	7,529,151
June 30, 2036	July 1, 2035	106,344,549	67,970,231	38,374,318	63.92%	54,469,779	2,955,695	8,691,244	5,767,520	1,877,800	7,645,320
June 30, 2037	July 1, 2036	110,540,970	74,670,559	35,870,411	67.55%	55,529,131	3,099,731	8,908,494	5,971,342	1,877,800	7,849,142
June 30, 2038	July 1, 2037	115,037,083	81,839,910	33,197,173	71.14%	56,556,442	3,246,027	9,128,946	6,223,835	1,877,800	8,101,635
June 30, 2039	July 1, 2038	119,718,037	89,511,115	30,206,922	74.77%	52,315,818	3,405,996	4,101,404	6,464,228	1,877,800	8,342,028
June 30, 2040	July 1, 2039	124,650,919	97,719,304	26,931,615	78.39%	47,680,365	3,576,245	3,974,809	6,732,462	1,877,800	8,610,262
June 30, 2041	July 1, 2040	129,774,639	106,502,067	23,272,572	82.07%	42,605,589	3,759,517	3,838,199	7,035,175	1,877,800	8,912,975
June 30, 2042	July 1, 2041	135,272,088	115,899,623	19,372,465	85.68%	37,060,322	3,956,558	3,688,800	7,356,267	1,877,800	9,234,067
June 30, 2043	July 1, 2042	140,985,985	125,955,008	15,030,977	89.34%	31,181,617	4,161,135	3,525,031	7,525,936	1,877,800	9,403,736
June 30, 2044	July 1, 2043	147,200,601	136,714,270	10,486,331	92.88%	24,903,862	4,382,894	3,357,638	7,757,593	1,877,800	9,635,393
June 30, 2045	July 1, 2044	153,769,098	148,226,680	5,542,418	96.40%	18,110,333	4,609,494	3,166,677	8,082,406	1,877,800	9,960,206
June 30, 2046	July 1, 2045	160,686,187	160,544,959	141,228	99.91%	12,622,573	4,854,541	2,957,117	8,303,649	141,228	8,444,877
June 30, 2047	July 1, 2046	168,081,309	171,929,194	(3,847,885)	102.29%	14,020,313	5,108,280	6,108,479	8,558,624	(3,847,885)	4,710,739
June 30, 2048	July 1, 2047	176,012,597	179,983,954	(3,971,357)	102.26%	15,570,885	5,374,664	6,480,989	8,901,774	(3,971,357)	4,930,417

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical, Dental & Life Insurance - Funding over 30 years at 7.00% discount rate increasing at 2.75% per year											
Fiscal Year Ending	Valuation Date	I. Total Actuarial Accrued Liability ("AAL") as of Valuation Date	II. Plan Assets as of Valuation Date with Expected 7.00% Return	III. Unfunded	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.]
				Accrued Actuarial Liability ("UAAL") [I. - II.]							
						30,378,025					
June 30, 2017	July 1, 2016	49,777,490	483,689	49,293,801	0.97%	33,248,423	1,230,504	5,352,845	2,457,447	25,000	2,482,447
June 30, 2018	July 1, 2017	51,949,085	571,053	51,378,032	1.10%	34,799,073	1,301,562	5,624,830	2,656,780	1,417,400	4,074,180
June 30, 2019	July 1, 2018	54,135,438	2,077,196	52,058,242	3.84%	36,287,317	1,365,393	5,764,979	2,820,356	1,456,379	4,276,735
June 30, 2020	July 1, 2019	56,368,108	3,729,090	52,639,018	6.62%	37,780,244	1,435,137	5,909,401	2,920,045	1,496,429	4,416,474
June 30, 2021	July 1, 2020	58,725,025	5,538,044	53,186,981	9.43%	39,223,685	1,505,883	6,057,956	3,076,934	1,537,581	4,614,515
June 30, 2022	July 1, 2021	61,154,572	7,516,193	53,638,379	12.29%	40,633,656	1,572,460	6,201,758	3,211,923	1,579,864	4,791,787
June 30, 2023	July 1, 2022	63,678,411	9,676,551	54,001,860	15.20%	42,066,668	1,648,800	6,355,941	3,299,619	1,623,310	4,922,929
June 30, 2024	July 1, 2023	66,369,524	12,033,074	54,336,450	18.13%	43,456,668	1,727,414	6,517,052	3,459,101	1,667,951	5,127,052
June 30, 2025	July 1, 2024	69,159,836	14,600,731	54,559,105	21.11%	44,844,290	1,813,656	6,685,904	3,584,462	1,713,820	5,298,282
June 30, 2026	July 1, 2025	72,075,745	17,395,571	54,680,174	24.14%	46,197,431	1,895,812	6,853,716	3,739,625	1,760,950	5,500,575
June 30, 2027	July 1, 2026	75,123,579	20,434,802	54,688,777	27.20%	47,470,484	1,983,709	7,028,153	3,945,724	1,809,376	5,755,100
June 30, 2028	July 1, 2027	78,247,172	23,736,871	54,510,301	30.34%	48,692,885	2,059,234	7,188,000	4,106,465	1,859,134	5,965,599
June 30, 2029	July 1, 2028	81,472,231	27,321,555	54,150,676	33.53%	49,841,583	2,152,786	7,365,814	4,306,856	1,910,260	6,217,116
June 30, 2030	July 1, 2029	84,679,062	31,210,052	53,469,010	36.86%	50,908,832	2,248,326	7,544,035	4,513,994	1,962,792	6,476,786
June 30, 2031	July 1, 2030	87,999,493	35,425,083	52,574,410	40.26%	51,865,960	2,348,711	7,725,078	4,751,181	2,016,769	6,767,950
June 30, 2032	July 1, 2031	91,525,008	39,991,001	51,534,007	43.69%	52,720,652	2,458,742	7,911,836	4,984,914	2,072,230	7,057,144
June 30, 2033	July 1, 2032	94,977,876	44,933,902	50,043,974	47.31%	53,495,653	2,569,352	8,095,884	5,191,667	2,129,216	7,320,883
June 30, 2034	July 1, 2033	98,719,715	50,281,753	48,437,962	50.93%	54,186,033	2,690,384	8,288,765	5,410,616	2,187,769	7,598,385
June 30, 2035	July 1, 2034	102,444,320	56,064,522	46,379,798	54.73%	54,775,092	2,819,938	8,488,343	5,651,351	2,247,933	7,899,284
June 30, 2036	July 1, 2035	106,344,549	62,314,319	44,030,230	58.60%	55,389,065	2,955,695	8,691,244	5,767,520	2,309,751	8,077,271
June 30, 2037	July 1, 2036	110,540,970	69,065,546	41,475,424	62.48%	55,952,948	3,099,731	8,908,494	5,971,342	2,373,269	8,344,611
June 30, 2038	July 1, 2037	115,037,083	76,355,063	38,682,020	66.37%	56,419,525	3,246,027	9,128,946	6,223,835	2,438,534	8,662,369
June 30, 2039	July 1, 2038	119,718,037	84,222,357	35,495,680	70.35%	51,551,107	3,405,996	4,101,404	6,464,228	2,505,594	8,969,822
June 30, 2040	July 1, 2039	124,650,919	92,709,729	31,941,190	74.38%	46,218,956	3,576,245	3,974,809	6,732,462	2,574,498	9,306,960
June 30, 2041	July 1, 2040	129,774,639	101,862,491	27,912,148	78.49%	40,376,683	3,759,517	3,838,199	7,035,175	2,645,297	9,680,472
June 30, 2042	July 1, 2041	135,272,088	111,729,182	23,542,906	82.60%	33,991,173	3,956,558	3,688,800	7,356,267	2,718,043	10,074,310
June 30, 2043	July 1, 2042	140,985,985	122,361,790	18,624,195	86.79%	27,197,479	4,161,135	3,525,031	7,525,936	2,792,789	10,318,725
June 30, 2044	July 1, 2043	147,200,601	133,815,999	13,384,602	90.91%	19,927,933	4,382,894	3,357,638	7,757,593	2,869,591	10,627,184
June 30, 2045	July 1, 2044	153,769,098	146,151,447	7,617,651	95.05%	12,063,699	4,609,494	3,166,677	8,082,406	2,948,505	11,030,911
June 30, 2046	July 1, 2045	160,686,187	159,432,006	1,254,181	99.22%	5,462,986	4,854,541	2,957,117	8,303,649	1,254,181	9,557,830
June 30, 2047	July 1, 2046	168,081,309	171,889,581	(3,808,272)	102.27%	6,821,113	5,108,280	6,108,479	8,558,624	(3,808,272)	4,750,352
June 30, 2048	July 1, 2047	176,012,597	179,982,544	(3,969,947)	102.26%	8,370,275	5,374,664	6,480,989	8,901,774	(3,969,947)	4,931,827

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical, Dental & Life Insurance - Funding Annual Normal Cost - 4.00% 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 with Expected 4.00% Return	X. Unfunded Accrued Actuarial Liability ("UAAL") [I. - IX.]	XI. Present Value at 2.75% of Unfunded Accrued Actuarial Liability ("UAAL")
2017	74,322,530	2,594,826	2,457,447	137,379	2,594,826	2,457,447	137,379	2,594,826	483,689	73,838,841	73,838,841
2018	77,487,936	2,737,134	2,656,780	80,354	2,737,134	2,585,674	78,203	2,663,877	640,416	76,847,520	74,790,774
2019	80,619,406	2,864,507	2,820,356	44,151	2,864,507	2,671,408	41,819	2,713,227	746,387	79,873,019	75,654,792
2020	83,890,100	3,004,808	2,920,045	84,763	3,004,808	2,691,808	78,138	2,769,946	820,393	83,069,707	76,576,795
2021	87,333,856	3,148,450	3,076,934	71,516	3,148,450	2,760,520	64,162	2,824,682	937,972	86,395,884	77,511,427
2022	90,901,247	3,287,773	3,211,923	75,850	3,287,773	2,804,503	66,229	2,870,732	1,047,007	89,854,240	78,456,589
2023	94,611,817	3,446,349	3,299,619	146,730	3,446,349	2,803,966	124,689	2,928,655	1,164,737	93,447,080	79,409,919
2024	98,548,889	3,610,199	3,459,101	151,098	3,610,199	2,860,819	124,964	2,985,783	1,358,056	97,190,833	80,380,831
2025	102,642,993	3,790,234	3,584,462	205,772	3,790,234	2,885,156	165,627	3,050,783	1,563,476	101,079,517	81,359,545
2026	106,915,381	3,963,435	3,739,625	223,810	3,963,435	2,929,487	175,325	3,104,812	1,831,787	105,083,594	82,318,689
2027	111,385,964	4,149,342	3,945,724	203,618	4,149,342	3,008,212	155,238	3,163,450	2,128,868	109,257,096	83,297,381
2028	115,997,034	4,320,273	4,106,465	213,808	4,320,273	3,046,969	158,644	3,205,613	2,417,641	113,579,393	84,275,125
2029	120,763,482	4,524,992	4,306,856	218,136	4,524,992	3,110,129	157,524	3,267,653	2,728,155	118,035,327	85,237,370
2030	125,542,468	4,734,582	4,513,994	220,588	4,734,582	3,172,467	155,031	3,327,498	3,055,417	122,487,051	86,084,782
2031	130,525,918	4,953,728	4,751,181	202,547	4,953,728	3,249,795	138,542	3,388,337	3,398,222	127,127,696	86,954,998
2032	135,849,628	5,191,451	4,984,914	206,537	5,191,451	3,318,411	137,490	3,455,901	3,736,698	132,112,930	87,946,359
2033	141,139,353	5,432,134	5,191,667	240,467	5,432,134	3,363,547	155,792	3,519,339	4,092,703	137,046,650	88,788,994
2034	146,855,360	5,693,416	5,410,616	282,800	5,693,416	3,411,580	178,315	3,589,895	4,496,878	142,358,482	89,761,940
2035	152,593,376	5,972,563	5,651,351	321,212	5,972,563	3,468,002	197,115	3,665,117	4,959,553	147,633,823	90,596,812
2036	158,655,353	6,265,307	5,767,520	497,787	6,265,307	3,444,565	297,296	3,741,861	5,479,147	153,176,206	91,482,185
2037	165,167,012	6,575,614	5,971,342	604,272	6,575,614	3,470,846	351,233	3,822,079	6,196,100	158,970,912	92,401,933
2038	172,121,418	6,891,850	6,223,835	668,015	6,891,850	3,520,786	377,892	3,898,678	7,048,216	165,073,202	93,380,917
2039	179,375,768	7,237,139	6,464,228	772,911	7,237,139	3,558,905	425,529	3,984,434	7,998,160	171,377,608	94,352,585
2040	187,066,522	7,605,168	6,732,462	872,706	7,605,168	3,607,379	467,612	4,074,991	9,090,997	177,975,525	95,362,621
2041	195,058,377	8,000,398	7,035,175	965,223	8,000,398	3,668,690	503,343	4,172,033	10,327,343	184,731,034	96,333,187
2042	203,720,466	8,425,661	7,356,267	1,069,394	8,425,661	3,733,462	542,740	4,276,202	11,705,660	192,014,806	97,451,596
2043	212,765,448	8,867,356	7,525,936	1,341,420	8,867,356	3,717,345	662,578	4,379,923	13,243,280	199,522,168	98,551,573
2044	222,570,536	9,346,361	7,757,593	1,588,768	9,346,361	3,729,216	763,750	4,492,966	15,114,431	207,456,105	99,727,928
2045	232,889,262	9,836,148	8,082,406	1,753,742	9,836,148	3,781,372	820,492	4,601,864	17,307,776	215,581,486	100,860,288
2046	243,766,897	10,366,389	8,303,649	2,062,740	10,366,389	3,780,906	939,229	4,720,135	19,753,829	224,013,068	102,000,023
2047	255,360,552	10,916,204	8,558,624	2,357,580	10,916,204	3,792,705	1,044,748	4,837,453	22,606,722	232,753,830	103,143,513

EXHIBIT D

Projected Cash Flows (Open Group) – Funded Approach

Total Medical, Dental & 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	489	74,322,530	74,322,530	2,457,447	2,457,447
2018	506	77,487,936	75,414,050	2,656,780	2,585,674
2019	516	80,619,406	76,361,761	2,820,356	2,671,408
2020	525	83,890,100	77,333,065	2,920,045	2,691,808
2021	531	87,333,856	78,352,943	3,076,934	2,760,520
2022	538	90,901,247	79,370,787	3,211,923	2,804,503
2023	544	94,611,817	80,399,695	3,299,619	2,803,966
2024	547	98,548,889	81,503,999	3,459,101	2,860,819
2025	552	102,642,993	82,617,997	3,584,462	2,885,156
2026	554	106,915,381	83,753,644	3,739,625	2,929,487
2027	558	111,385,964	84,920,426	3,945,724	3,008,212
2028	564	115,997,034	86,068,998	4,106,465	3,046,969
2029	568	120,763,482	87,207,465	4,306,856	3,110,129
2030	571	125,542,468	88,232,151	4,513,994	3,172,467
2031	572	130,525,918	89,279,372	4,751,181	3,249,795
2032	573	135,849,628	90,433,845	4,984,914	3,318,411
2033	572	141,139,353	91,440,551	5,191,667	3,363,547
2034	572	146,855,360	92,597,377	5,410,616	3,411,580
2035	571	152,593,376	93,640,286	5,651,351	3,468,002
2036	570	158,655,353	94,754,523	5,767,520	3,444,565
2037	567	165,167,012	96,003,419	5,971,342	3,470,846
2038	564	172,121,418	97,368,050	6,223,835	3,520,786
2039	562	179,375,768	98,756,002	6,464,228	3,558,905
2040	560	187,066,522	100,233,748	6,732,462	3,607,379
2041	560	195,058,377	101,718,670	7,035,175	3,668,690
2042	559	203,720,466	103,392,467	7,356,267	3,733,462
2043	557	212,765,448	105,092,932	7,525,936	3,717,345
2044	557	222,570,536	106,993,710	7,757,593	3,729,216
2045	555	232,889,262	108,957,771	8,082,406	3,781,372
2046	554	243,766,897	110,994,547	8,303,649	3,780,906
2047	553	255,360,552	113,161,551	8,558,624	3,792,705
2048	551	267,721,203	115,463,846	8,901,774	3,839,192
2049	550	281,045,843	117,966,471	9,292,726	3,900,538
2050	550	295,177,604	120,582,142	9,680,416	3,954,519
2051	550	310,050,477	123,267,948	10,091,808	4,012,238
2052	549	325,934,281	126,114,776	10,563,543	4,087,385
2053	549	342,667,172	129,040,667	10,981,054	4,135,215
2054	549	360,651,276	132,178,172	11,431,451	4,189,610
2055	548	379,587,902	135,395,055	12,001,442	4,280,789
2056	548	399,846,208	138,803,875	12,531,672	4,350,284

EXHIBIT E

GLOSSARY

AAI – 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 been applicable to those retirees if that benefit was acquired for them as a separate group.”

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

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

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

EXHIBIT E**GLOSSARY***(continued)*

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

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

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

OPEB - Other Post Employment Benefits

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

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

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

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