

**Town of Hanover Other
Postemployment Benefits Plan**

GASB 75 Actuarial Valuation

With a Valuation Date of July 1, 2017

As of the Measurement Date:
July 1, 2017

For the Reporting Date:
June 30, 2018

Delivered September 26, 2018

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September 26, 2018

Personal and Confidential

Ms. Chelsea Stevens
Acting Finance Director
Town of Hanover
550 Hanover Street
Hanover, MA 02339

Dear Ms. Stevens:

We have performed an actuarial valuation of the Town of Hanover Other Postemployment Benefits Plan for the Reporting Date & fiscal year ending June 30, 2018 with a Measurement Date of July 1, 2017 and a Valuation Date of July 1, 2017. The figures presented in this report reflect the adoption, by the Town of Hanover, of Statement Nos. 74 and 75 of the Governmental Accounting Standards Board ("GASB 74/75") effective for the fiscal year ending June 30, 2017 and June 30, 2018 respectively.

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

September 26, 2018**ACTUARIAL CERTIFICATION**

This is to certify that Odyssey Advisors has conducted an actuarial valuation of certain benefit obligations of the Town of Hanover other postemployment benefit programs with a Valuation Date of July 1, 2017 with a Measurement Date of July 1, 2017 for the Reporting Date & fiscal year ending June 30, 2018 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 Numbers 74 & 75 for the determination of the liability for postemployment benefits other than pensions.

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

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

To the best of our knowledge, this report is complete and accurate and in our opinion represents the information necessary to comply with GASB Statements Number 74 and 75 with respect to the benefit obligations addressed. The signing actuaries are members of the Society of Actuaries, the American Academy of Actuaries and other professional actuarial organizations and meet their "General Qualification Standards for Statements of Actuarial Opinion" to render the actuarial opinion contained herein. Further, in our opinion, the assumptions as approved by the Town are reasonably related to the experience and expectations of the postemployment benefits programs.



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

EXECUTIVE SUMMARY

GASB 74 and 75 Impact

The Town adopted GASB 74 for the fiscal year ending June 30, 2017 and GASB 75 for the fiscal year ending June 30, 2018. The adoption of GASB 74/75 introduces a new actuarial cost method and discount rate as well as new disclosures and methodologies for reporting plan liabilities and OPEB expenses. Significant changes have been made to the recognition of OPEB expenses, which makes the comparison of Net OPEB Expense in the current valuation to the expenses reported under GASB 45 misleading. The liability reported on the Town's balance sheet is likely to increase dramatically as GASB 74/75 require the recognition of liabilities immediately rather than over a 30 year period as GASB 45 allowed.

What caused plan liabilities to change from FY 17 to FY 18?

There was no plan experience for the year ending on the Measurement Date of July 1, 2017, because this was an interim valuation. Changes in assumptions decreased disclosed liabilities by \$1.4 million.

Over the one year period, the TOL went from \$35,307,132 as of January 1, 2017 to \$35,795,255 as of July 1, 2017 for an increase of \$488,123. The Net OPEB Expense was \$1,310,328 for the year ending on the July 1, 2017 Measurement Date. As this is the first year using GASB 75 methodology, there is no baseline for comparison. For a projection of future costs and liabilities refer to Exhibit D.

EXECUTIVE SUMMARY

(continued)

Assumption changes

A key assumption has changed since the prior valuation - the impact is detailed below.

- ✓ Due to the GASB 75 standards the discount rate was changed from 4.50% to 4.75% decreasing the disclosed liability by \$1.4 million.
- ✓ Assumption changes caused Normal Cost to decrease by \$83 thousand.

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

Several key drivers of plan costs and liabilities are:

- ✓ Premiums for Post 65 (Medicare Integrated) plans - represent 79% of the total plan liabilities
- ✓ Age at which plan participants retire
- ✓ Percentage of plan participants who elect coverage for themselves and/or a spouse
- ✓ Medical care cost inflation rate – We currently assume medical costs increase at 5.0% per year
- ✓ Discount Rate (4.75%) – Higher discount rates yield lower liabilities and vice versa
- ✓ Cost Sharing - Under Massachusetts law you may charge retirees up to 50% of premiums for health insurance

EXECUTIVE SUMMARY

(continued)

What is Implicit Subsidy? How does it impact us?

The implicit subsidy arises because retirees who are not eligible for Medicare 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 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.

Impact of Implicit Subsidy		
	As of the Measurement Date	
Impact on Liability	<u>July 1, 2017</u>	<u>January 1, 2017</u>
I. Actuarial Accrued Liability	35,795,255	35,307,132
II. Actuarial Accrued Liability (Excluding Implicit Subsidy)	<u>31,415,512</u>	<u>30,907,555</u>
III. Liability from Implicit Subsidy [I. - II.]	4,379,743	4,399,577

	For the Measurement Period Ending	
Impact on Payments	<u>July 1, 2017</u>	<u>January 1, 2017</u>
IV. Employer Payments (Including Implicit Subsidy)	1,084,038	1,084,038
V. Actual Employer Payments	<u>956,367</u>	<u>956,367</u>
VI. Implicit Subsidy [IV. - V.]	127,671	127,671

EXECUTIVE SUMMARY

(continued)

What are some key plan metrics?

While an actuarial valuation under GASB 74/75 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		
Valuation Date	July 1, 2017	January 1, 2017
Measurement Date & Period Ending	July 1, 2017	January 1, 2017
Reporting Date/Fiscal Year End	June 30, 2018	June 30, 2017
Total OPEB Liability	35,795,255	35,307,132
Per Eligible Active Plan Participant	34,711	33,289
Per Retiree/Spouse Plan Participant	43,800	44,907
Total Annual Service Cost (annual benefit accrual)	1,141,235	1,211,539
Per Eligible Active Plan Participant	1,883	1,999
Expected Employer Share of Retiree Costs	1,084,038	1,084,038
Per Retiree/Spouse Plan Participant	3,217	3,217
Net OPEB Liability as a % of Payroll	87.90%	90.20%
Average Annual Medical Plan Premium (Single Coverage)	6,595	6,595
Average Annual Medical Plan Premium (Family Coverage)	26,450	26,450
<u>Projected 2022 Excise Tax Thresholds</u>		
Annual Medical Plan Premium (Single Coverage)	12,511	
Annual Medical Plan Premium (Family Coverage)	32,676	

EXECUTIVE SUMMARY

(continued)

Liabilities & Benefit Payments in today's dollars

With the growth of medical care costs over time, the nominal accrued liabilities ("TOL") 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.

For the Period Ending on the Measurement Date of:	Number of Retirees, Spouses & Surviving Spouses	Present Value at 3.00% of Total OPEB Liability	Present Value at 3.00% of Employer Share of Premiums / Claims including "implicit cost"
July 1, 2017	337	35,795,255	1,084,038
July 1, 2022	377	39,544,018	1,219,443
July 1, 2027	395	43,729,898	1,417,080
July 1, 2032	413	47,826,835	1,697,462
July 1, 2037	420	52,109,895	1,806,716
July 1, 2042	429	57,146,122	2,012,041
July 1, 2047	443	63,014,099	2,183,362

A full projection of plan costs and liabilities in today's dollars is shown in Exhibit D of this report.

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

If you're looking to fund your OPEB liability, there are a variety of manner to do so. The amount of funding in combination with your Investment Policy will impact the discount rate and disclosed liabilities. Below are a few sample funding options, but it's important to develop a funding policy that fits your organization as each situation is different.

	Current Funding Policy	Alternative Funding Policy - Level Dollar	Alternative Funding Policy - Increasing 3.00% per Year
Net OPEB Liability	\$34,105,971	\$25,375,352	\$25,375,352
Trust Contribution made during Fiscal Year 2019	\$370,000	\$1,244,948	\$1,022,984
Discount Rate*	4.75%	6.75%	6.75%

*Final discount rate will be chosen based on liabilities and cash flows at each measurement date

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

Town of Hanover
Assuming Funding - 4.75% discount rate
Comparison of Plan Liabilities to Prior Valuation

Valuation Date		July 1, 2017	January 1, 2017
For the Measurement Period ending on the Measurement Date of:		July 1, 2017	January 1, 2017
For the Reporting Period & Fiscal Year ending on:		June 30, 2018	June 30, 2017
I.	Present Value of Future Benefits		
A.	Actives	33,262,764	32,515,697
B.	Retirees/Disabled	14,760,635	15,133,760
C.	Total	48,023,399	47,649,457
II.	Present Value of Future Normal Cost	12,228,144	12,342,325
III.	Total OPEB Liability (Individual Entry Age Normal)		
A.	Actives	21,034,620	20,173,372
B.	Retirees/Disabled	14,760,635	15,133,760
C.	Total	35,795,255	35,307,132
IV.	Fiduciary Net Position [Plan Assets]	1,689,284	1,318,317
V.	Net OPEB Liability (Asset) [III. - IV.]	34,105,971	33,988,815
VI.	Funded Ratio [IV. / III.]	4.72%	3.73%
VII.	Annual Covered Payroll	38,821,498	37,690,774
VIII.	Net OPEB Liability (Asset) as % of Covered Payroll	87.9%	90.2%
IX.	Number of Eligible Participants		
A.	Actives	606	606
B.	Retirees/Disabled	337	337
C.	Total	943	943
X.	Service Cost	1,141,235	1,211,539
XI.	Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	1,648,038	N/A
XII.	Projected Earnings on OPEB Plan Investments	(80,956)	N/A
XIII.	Net Recognition of Deferred (Inflows)/Outflows	(21,971)	N/A
XIV.	Financial Statement Expense [X.+XI.+XII.+XIII.]	2,686,346	N/A
XV.	Employer Share of Costs	(1,084,038)	(1,084,038)
XVI.	Employer (Payments)/Withdrawals to/from OPEB Trust	(291,980)	(180,000)
XVII.	Total Employer Contribution [XV. + XVI.]	(1,376,018)	(1,264,038)
XVIII.	Other Changes	0	N/A
XIX.	Net OPEB Expense [XIV.+XVII.+XVIII.]	1,310,328	N/A
XX.	Discount Rate	4.75%	4.50%

SECTION I
PRINCIPAL RESULTS OF THE VALUATION
(continued)

Town of Hanover
Comparison of Discount Rates

As of the July 1, 2017 Measurement Date

	<u>Funding - 4.75% discount</u> <u>rate</u>	<u>Funding - 6.75%</u> <u>discount rate</u>
I. Present Value of Future Benefits		
A. Actives	33,262,764	19,892,400
B. Retirees/Disabled	<u>14,760,635</u>	<u>13,341,930</u>
C. Total	48,023,399	33,234,330
II. Present Value of Future Normal Cost	12,228,144	6,169,694
III. Total OPEB Liability (Individual Entry Age Normal)		
A. Actives	21,034,620	13,722,706
B. Retirees/Disabled	<u>14,760,635</u>	<u>13,341,930</u>
C. Total	35,795,255	27,064,636
IV. Fiduciary Net Position [Plan Assets]	1,689,284	1,689,284
V. Net OPEB Liability (Asset) [III. - IV.]	34,105,971	25,375,352
VI. Funded Ratio [IV. / III.]	4.72%	6.24%
VII. Annual Covered Payroll	38,821,498	38,821,498
VIII. Net OPEB Liability (Asset) as % of Covered Payroll	87.9%	65.4%
IX. Number of Eligible Participants		
A. Actives	606	606
B. Retirees/Disabled	<u>337</u>	<u>337</u>
C. Total	943	943

For the Reporting Date and Fiscal Year Ending June 30, 2018

X. Service Cost	1,141,235	678,980
XI. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	1,648,038	1,749,676
XII. Recognition of Deferred (Inflows)/Outflows from Plan Design Changes	0	0
XIII. Recognition of Deferred (Inflows)/Outflows from Expected & Actual Experience	0	0
XIV. Recognition of Deferred (Inflows)/Outflows from Changes in Assumptions	0	0
XV. Projected Earnings on OPEB Plan Investments	(80,956)	(113,351)
XVI. Recognition of Deferred (Inflows)/Outflows from Earnings on Investments	(21,971)	(21,971)
XVII. Financial Statement Expense [X.+XI.+XII.+XIII.+XIV.+XV.+XVI.]	2,686,346	2,293,334
XVIII. Employer Share of Costs	(1,084,038)	(1,084,038)
XIX. Employer (Payments)/Withdrawals to/from OPEB Trust	(291,980)	(1,244,948)
XX. Total Employer Contribution [XVIII. + XIX.]	(1,376,018)	(2,328,986)
XXI. Other Changes	0	0
XXII. Net OPEB Expense [XVII.+XX.+XXI.]	1,310,328	(35,652)

SECTION I
PRINCIPAL RESULTS OF THE VALUATION
(continued)

Town of Hanover
Plan Liabilities as of the July 1, 2017 Measurement Date
Assuming Funding - 4.75% discount rate

	<u>Medical</u>	<u>Dental</u>	<u>Life</u>	<u>Excise Tax</u>	<u>Total</u>
I. Present Value of Future Benefits					
A. Actives	32,355,474	0	65,343	841,947	33,262,764
B. Retirees/Disabled	<u>14,572,626</u>	<u>0</u>	<u>130,262</u>	<u>57,747</u>	<u>14,760,635</u>
C. Total	46,928,100	0	195,605	899,694	48,023,399
II. Present Value of Future Normal Cost	11,790,573	0	19,034	418,537	12,228,144
III. Total OPEB Liability					
A. Actives	20,564,901	0	46,309	423,410	21,034,620
B. Retirees/Disabled	<u>14,572,626</u>	<u>0</u>	<u>130,262</u>	<u>57,747</u>	<u>14,760,635</u>
C. Total	35,137,527	0	176,571	481,157	35,795,255
IV. Fiduciary Net Position [Plan Assets]	1,658,244	0	8,333	22,707	1,689,284
V. Net OPEB Liability (Asset) [III. - IV.]	33,479,283	0	168,238	458,450	34,105,971
VI. Annual Covered Payroll	38,821,498	38,821,498	38,821,498	38,821,498	38,821,498
VII. Net OPEB Liability (Asset) as % of Covered Payroll	86.2%	0.0%	0.4%	1.2%	87.9%
VIII. Number of Eligible Participants					
IX. A. Actives	606	0	606	606	
B. Retirees/Disabled	<u>337</u>	<u>0</u>	<u>225</u>	<u>337</u>	
C. Total	943	0	831	943	
For the Reporting Date and Fiscal Year Ending June 30, 2018					
X. Service Cost	1,105,579	0	2,189	33,467	1,141,235
XI. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	1,615,325	0	8,270	24,443	1,648,038
XII. Recognition of Deferred (Inflows)/Outflows from Plan Design Changes	0	0	0	0	0
XIII. Recognition of Deferred (Inflows)/Outflows from Expected & Actual Experience	0	0	0	0	0
XIV. Recognition of Deferred (Inflows)/Outflows from Changes in Assumptions	0	0	0	0	0
XV. Projected Earnings on OPEB Plan Investments	(79,469)	0	(399)	(1,088)	(80,956)
XVI. Recognition of Deferred (Inflows)/Outflows from Earnings on Investments	(21,567)	0	(108)	(296)	(21,971)
XVII. Financial Statement Expense [X.+XI.+XII.+XIII.+XIV.+XV.+XVI.]	2,619,868	0	9,952	56,526	2,686,346
XVIII. Employer Share of Costs	(1,075,239)	0	(8,799)	0	(1,084,038)
XIX. Employer (Payments)/Withdrawals to/from OPEB Trust	(287,390)	0	(1,342)	(3,248)	(291,980)
XX. Total Employer Contribution [XVIII. + XIX.]	(1,362,629)	0	(10,141)	(3,248)	(1,376,018)
XXI. Other Changes	0	0	0	0	0
XXII. Net OPEB Expense [XVII.+XX.+XXI.]	1,257,239	0	(189)	53,278	1,310,328

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Hanover

Plan Liabilities as of the July 1, 2017 Measurement Date

Assuming Funding - 4.75% discount rate

	Town Employees	School Employees	Police Employees	Fire Employees	DPW Employees	Water Enterprise Employees	Retirees	Total
I. Present Value of Future Benefits								
A. Actives	4,880,153	19,701,438	3,282,708	3,245,186	1,008,543	1,144,736	0	33,262,764
B. Retirees/Disabled	0	0	0	0	0	0	14,760,635	14,760,635
C. Total	4,880,153	19,701,438	3,282,708	3,245,186	1,008,543	1,144,736	14,760,635	48,023,399
II. Present Value of Future Normal Cost	1,770,941	7,250,502	1,125,656	1,258,830	400,228	421,987	0	12,228,144
III. Total OPEB Liability								
A. Actives	3,109,212	12,450,936	2,157,052	1,986,356	608,315	722,749	0	21,034,620
B. Retirees/Disabled	0	0	0	0	0	0	14,760,635	14,760,635
C. Total	3,109,212	12,450,936	2,157,052	1,986,356	608,315	722,749	14,760,635	35,795,255
IV. Fiduciary Net Position [Plan Assets]	147,435	583,834	101,409	92,710	29,032	34,265	700,599	1,689,284
V. Net OPEB Liability (Asset) [III. - IV.]	2,961,777	11,867,102	2,055,643	1,893,646	579,283	688,484	14,060,036	34,105,971
VI. Annual Covered Payroll	5,326,684	24,863,784	3,370,515	2,593,403	1,186,066	1,481,046	N/A	38,821,498
VII. Net OPEB Liability (Asset) as % of Covered Payroll	55.6%	47.7%	61.0%	73.0%	48.8%	46.5%	N/A	87.9%
VIII. Number of Eligible Participants								
A. Actives	109	383	37	36	20	21	0	606
B. Retirees/Disabled	0	0	0	0	0	0	337	337
C. Total	109	383	37	36	20	21	337	943
For the Reporting Date and Fiscal Year Ending June 30, 2018								
IX. Service Cost	112,335	727,246	100,132	102,906	50,124	48,492	0	1,141,235
X. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	143,150	573,250	99,312	91,453	28,007	33,276	679,590	1,648,038
XI. Recognition of Deferred (Inflows)/Outflows from Plan Design Changes	0	0	0	0	0	0	0	0
XII. Recognition of Deferred (Inflows)/Outflows from Expected & Actual Experience	0	0	0	0	0	0	0	0
XIII. Recognition of Deferred (Inflows)/Outflows from Changes in Assumptions	0	0	0	0	0	0	0	0
XIV. Projected Earnings on OPEB Plan Investments	(7,066)	(27,979)	(4,860)	(4,443)	(1,391)	(1,642)	(33,575)	(80,956)
XV. Recognition of Deferred (Inflows)/Outflows from Earnings on Investments	(1,917)	(7,593)	(1,319)	(1,206)	(378)	(446)	(9,112)	(21,971)
XVI. Financial Statement Expense [IX.+X.+XI.+XII.+XIII.+XIV.+XV.]	246,502	1,264,924	193,265	188,710	76,362	79,680	636,903	2,686,346
XVII. Employer Share of Costs	(36,471)	(43,795)	(6,835)	(4,581)	(5,412)	(4,752)	(982,192)	(1,084,038)
XVIII. Employer (Payments)/Withdrawals to/from OPEB Trust	(26,747)	(106,776)	(18,294)	(16,948)	(5,308)	(6,230)	(111,677)	(291,980)
XIX. Total Employer Contribution [XVII. + XVIII.]	(63,218)	(150,571)	(25,129)	(21,529)	(10,720)	(10,982)	(1,093,869)	(1,376,018)
XX. Other Changes	0	0	0	0	0	0	0	0
XXI. Net OPEB Expense [XVI.+XIX.+XX.]	183,284	1,114,353	168,136	167,181	65,642	68,698	(456,966)	1,310,328

SECTION I

PRINCIPAL RESULTS OF THE VALUATION

(continued)

Town of Hanover
Assuming Funding - 4.75% discount rate
For the Period ending on the July 1, 2017 Measurement Date

	<u>Present Value of Future</u> <u>Benefits</u>	<u>Total OPEB Liability</u> <u>(Individual Entry Age</u> <u>Normal)</u>	<u>Service Cost</u>
Actives			
Under Age 65			
A. Participants	6,801,506	4,297,578	217,336
B. Spouses	<u>3,318,177</u>	<u>2,125,952</u>	<u>106,098</u>
C. Total	10,119,683	6,423,530	323,434
Age 65 and Over			
A. Participants	16,061,455	10,203,549	551,755
B. Spouses	<u>7,081,626</u>	<u>4,407,541</u>	<u>266,046</u>
C. Total	23,143,081	14,611,090	817,801
Actives Total			
A. Participants	22,862,961	14,501,127	769,091
B. Spouses	<u>10,399,803</u>	<u>6,533,493</u>	<u>372,144</u>
C. Total	33,262,764	21,034,620	1,141,235
Retirees/Disabled			
Under Age 65			
A. Participants	852,034	852,034	0
B. Spouses	<u>193,831</u>	<u>193,831</u>	<u>0</u>
C. Total	1,045,865	1,045,865	0
Age 65 and Over			
A. Participants	12,990,489	12,990,489	0
B. Spouses	<u>724,281</u>	<u>724,281</u>	<u>0</u>
C. Total	13,714,770	13,714,770	0
Retirees/Disabled Total			
A. Participants	13,842,523	13,842,523	0
B. Spouses	<u>918,112</u>	<u>918,112</u>	<u>0</u>
C. Total	14,760,635	14,760,635	0
Total Population			
A. Participants	36,705,484	28,343,650	769,091
B. Spouses	<u>11,317,915</u>	<u>7,451,605</u>	<u>372,144</u>
C. Total	48,023,399	35,795,255	1,141,235

OVERVIEW OF GASB 74 AND 75

Before Statements 74 and 75, GASB statement 45 established the reporting standards for Other Postemployment Benefit (“OPEB”) plans. It was designed to recognize the Other Postemployment Benefits earned by employees throughout their working career vs. when they are paid in retirement – accrual accounting vs. “pay-as-you-go” accounting. Additionally, each eligible active employee earns benefits each year representing benefits to be paid in retirement or a “Service 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.

In 2012 GASB issued GASB Statements 67 and 68 to update and standardize the financial reporting of pension liabilities. This increased the transparency of pension liabilities by moving them to the balance sheet and made financial statement disclosures of pension liabilities more comparable between municipal entities. GASB Statements 74 and 75 are designed to have the same effect on OPEB plans.

GASB 74 and 75 require retiree medical plans to disclose information about asset and liability levels and show historical contribution information. GASB 74 only applies in situations where a separate trust is established to prefund these benefits. GASB 75 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 74 and 75 apply to those benefits provided after retirement, except for pension benefits, such as medical, 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 74 and 75 extend this practice to all other post-employment benefits.

OVERVIEW OF GASB 74 AND 75

(continued)

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

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

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

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

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

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

Once the Accrued Liability and the Service Cost have been calculated, the next step is to determine an actuarially determined contribution. This is an amount that if paid annually would fully prefund the benefits for current active and retired employees. This consists of two pieces:

- ✓ Service Cost – because the benefits earned by active employees each year should be paid for each year
- ✓ Past Service Cost – a catch-up payment to fund the Accrued Liability over a period of time determined by an actuary

The final step is to keep track going forward of how much of the contribution is actually paid. There is no requirement to actually fund these benefits, but the cumulative deficiency must be disclosed on the Town's financial statements as the Net OPEB Liability (NOL). If you decide to fully fund the NOL 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.

OVERVIEW OF GASB 74 AND 75

(continued)

GASB 74/75 – How we got here:

GASB 74 and 75 were designed to recognize the Other Postemployment Benefits (“OPEB”) earned by employees throughout their working career vs. when they are paid in retirement – accrual accounting vs. “pay-as-you-go” accounting while increasing disclosures to better reflect the plan’s liabilities and future funding requirements. Additionally, each eligible active employee earns benefits each year representing benefits to be paid in retirement or a “Service 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. Additionally, GASB 74 and 75 require increased disclosures comparable to those required under GASB 67 and 68 and interest rates used in the valuation are more closely tied to the plan’s underlying investment and funding policy.

GASB 74 and 75 Impact

The Town has adopted GASB 74 for the fiscal year ending June 30, 2017 and GASB 75 for the fiscal year ending June 30, 2018. The adoption of GASB 74/75 introduces a new actuarial cost method and discount rate as well as new disclosures and methodologies for reporting plan liabilities and OPEB expenses. Significant changes have been made to the recognition of OPEB expenses, making the comparison of Net OPEB Expense in the current valuation to the expenses reported under GASB 45 misleading. The liability reported on the Town’s balance sheet will increase dramatically as GASB 74/75 require the recognition of liabilities immediately rather than recognizing liabilities (Net OPEB Obligation) over a 30 year period as GASB 45 allowed. Please keep these changes in mind when considering any comparison to previously reported liabilities and expenses.

SECTION II

SUMMARY OF PLAN PROVISIONS

Effective Date

GASB 45 is adopted July 1, 2008

GASB 74 is adopted for the fiscal year ending June 30, 2017

GASB 75 is adopted for the fiscal year ending June 30, 2018

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. Surviving Spouses pay 100%.

Benefits Offered

Comprehensive Medical Insurance offered through Blue Cross Blue Shield of Massachusetts as well as group term Life Insurance.

Excise Tax

Under the Patient Protection and Affordable Care Act ("PPACA"), a 40% tax will be imposed on the cost of medical benefits in excess of a specified threshold.

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 into the OPEB expense. Gains and losses arising from plan design changes are recognized immediately. Gains and losses arising from differences between expected and actual investment returns are amortized over a five (5) year period. Gain and losses arising from differences between expected and actual plan experience and changes in actuarial assumptions are amortized over the remaining lifetime of all active and retired plan participants (6.42 years for the Town for the 2018 fiscal year).

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 measurement 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

Mortality Experience Study

The mortality assumptions reflect PERAC's recent experience analysis published in 2014 (based on the years 2006-2011), updated to reflect data through January 1, 2015 for post-retirement mortality, and professional judgement. As such, mortality assumptions reflect observed current mortality as well as expected mortality improvements.

Discount Rate

4.75% per annum (previously 4.50%)

Long Term Rate of Return

6.71% (based on investment policy)

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Municipal Bond Rate

3.13% as of July 1, 2017 (source: S&P Municipal Bond 20-Year High Grade Index - SAPIHG)

Excise Tax

The PPACA Excise tax is expected to take effect for tax years beginning after December 31, 2021. The projected 2022 threshold amounts are \$12,511 for single coverage and \$32,676 for family coverage. For qualified retirees and those engaged in high risk professions, a "kicker" amount of \$1,650 for single coverage and \$3,450 for family coverage is expected to be added to the above thresholds.

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

SECTION III

ACTUARIAL COST METHOD, ASSET VALUATION METHOD AND ACTUARIAL ASSUMPTIONS

(continued)

C. ACTUARIAL ASSUMPTIONS (continued)

Retirement Rates

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

<u>Age</u>	<u>Standard Male</u>	<u>Standard Female</u>	<u>Male Teachers</u>	<u>Female Teachers</u>	<u>Public Safety</u>
45	0.00%	0.00%	0.00%	0.00%	1.00%
46	0.00%	0.00%	0.00%	0.00%	1.00%
47	0.00%	0.00%	0.00%	0.00%	1.00%
48	0.00%	0.00%	0.00%	0.00%	1.00%
49	0.00%	0.00%	0.00%	0.00%	1.00%
50	1.00%	1.50%	2.00%	1.50%	2.00%
51	1.00%	1.50%	2.00%	1.50%	2.00%
52	1.00%	2.50%	2.00%	1.50%	2.00%
53	1.00%	2.50%	2.00%	1.50%	5.00%
54	2.00%	2.50%	2.00%	2.00%	7.50%
55	2.00%	5.50%	6.00%	5.00%	15.00%
56	2.50%	6.50%	20.00%	15.00%	10.00%
57	2.50%	6.50%	40.00%	35.00%	10.00%
58	5.00%	6.50%	50.00%	35.00%	10.00%
59	6.50%	6.50%	50.00%	35.00%	15.00%
60	12.00%	5.00%	40.00%	35.00%	20.00%
61	20.00%	13.00%	40.00%	35.00%	20.00%
62	30.00%	15.00%	35.00%	35.00%	25.00%
63	25.00%	12.50%	35.00%	35.00%	25.00%
64	22.00%	18.00%	35.00%	35.00%	30.00%
65	40.00%	15.00%	35.00%	35.00%	100.00%
66	25.00%	20.00%	40.00%	35.00%	100.00%
67	25.00%	20.00%	40.00%	30.00%	100.00%
68	30.00%	25.00%	40.00%	30.00%	100.00%
69	30.00%	20.00%	40.00%	30.00%	100.00%
70	100.00%	100.00%	100.00%	100.00%	100.00%
71	100.00%	100.00%	100.00%	100.00%	100.00%
72	100.00%	100.00%	100.00%	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)

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 70% of employees eligible to receive retirement benefits would enroll in the retiree medical plans upon retirement. For life insurance plans, it was assumed that 70% of eligible employees would elect coverage upon retirement.

Percent Married

It was assumed that 70% of male employees and 70% of female employees who elect retiree healthcare coverage for themselves would also elect coverage for a spouse upon retirement. If provided, the actual census information was used. Otherwise it was assumed that a male spouse is three years older than a female spouse and same sex spouses are assumed to be the same age.

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 74 and 75 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. Actuarial Standard of Practice No. 6 (“ASOP 6”) requires us to recognize this implicit subsidy while the plan sponsor may only pay the premiums billed by an insurance provider. 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 on factors developed by actuaries that reflect how the cost of medical benefits varies by age and gender, as well as the other assumptions discussed on the prior page.

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

SECTION III

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

D. DEVELOPMENT OF REPRESENTATIVE MEDICAL PER CAPITA CLAIMS COSTS

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

	Number of Participants			
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>	<u>Total</u>
Blue Care Elect Ratesaver	14		9	23
Blue Care Elect Benchmark	2			2
Network Blue Ratesaver	79		88	167
Network Blue Benchmark	10		4	14
Harvard Pilgrim Ratesaver	43		51	94
Harvard Pilgrim Benchmark	3		1	4
Medex II	254	13		267
Total	405	13	153	571

	Per Contract Costs (monthly) - FY 2018		
	<u>Single</u>	<u>Two-Person</u>	<u>Family</u>
Blue Care Elect Ratesaver	1,156.00		2,739.00
Blue Care Elect Benchmark	1,038.00		2,461.00
Network Blue Ratesaver	794.00		2,117.00
Network Blue Benchmark	733.00		1,951.00
Harvard Pilgrim Ratesaver	857.00		2,281.00
Harvard Pilgrim Benchmark	807.00		2,150.00
Medex II	374.00	748.00	

Gross Expected FY 2018 Incurred Premiums	6,834,480
Adjustment to reflect children's claims	(981,456)
Total Expected FY 2018 Incurred Premiums (adults only)	5,853,024

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

	<u>Employer</u> <u>Primary</u>	<u>Medicare</u> <u>Primary</u>
Age 65	14,264	3,726
Average Age	13,607	4,488

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

ALL ACTIVE EMPLOYEES AND SPOUSES

Age Bracket	Aged (F) Average Claims	Aged (M) Average Claims
24 & Under	8,751	3,662
25 to 29	8,751	3,942
30 to 34	8,751	4,749
35 to 39	8,751	5,670
40 to 44	8,751	6,670
45 to 49	9,712	7,957
50 to 54	10,665	9,611
55 to 59	11,606	11,693
60 to 64	13,127	14,020
65 to 69	14,461	15,448
70 & Over	15,981	17,055

ALL RETIREES AND SPOUSES - NOT MEDICARE ELIGIBLE

Age Bracket	Aged (F) Average Claims	Aged (M) Average Claims
44 & Under	8,751	6,670
45 to 49	9,712	7,957
50 to 54	10,665	9,611
55 to 59	11,606	11,693
60 to 64	13,127	14,020
65 to 69	14,461	15,448
70 to 74	15,981	17,055
75 to 79	17,295	18,469
80 to 84	18,169	19,410
85 to 89	19,103	20,404
90 & Over	20,077	21,444

ALL RETIREES AND SPOUSES - MEDICARE ELIGIBLE

Age Bracket	Aged (F) Average Claims	Aged (M) Average Claims
65 to 69	3,778	4,035
70 to 74	4,175	4,455
75 to 79	4,518	4,825
80 to 84	4,746	5,070
85 to 89	4,990	5,330
90 & Over	5,245	5,602

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	N/A		N/A

FY 2018 Expected Per Person Rate

N/A

EXHIBIT AFINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

The GASB Standards for accounting and financial reporting for postemployment benefits other than pensions require the following disclosures in the financial statements related to the retiree medical, dental and life insurance benefits;

1. A DESCRIPTION OF THE RETIREE MEDICAL INSURANCE PROGRAM:

- a. Plan Type: Comprehensive Medical Insurance offered through Blue Cross Blue Shield of Massachusetts.
- b. Administrator: Town of Hanover
- 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: Retirees pay 50% of premiums. Surviving spouses pay 100% of premiums.

2. A DESCRIPTION OF THE RETIREE DENTAL INSURANCE PROGRAM:

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

3. A DESCRIPTION OF THE RETIREE LIFE INSURANCE PROGRAM:

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

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

4. RETIREE MEDICAL AND LIFE INSURANCE CONTRIBUTIONS:

Group	Individual	Family
Medical	50% (Surviving spouses pay 100%)	50% (Surviving spouses pay 100%)
Dental	N/A	N/A
Life	50%	N/A

5. FUNDING POLICY

The contribution requirements of plan members and the Town are established and may be amended through Town ordinances. For the period ending on the July 1, 2017 Measurement Date total Town premiums plus implicit costs for the retiree medical program were \$1,084,038. The Town also made a contribution to an OPEB Trust of \$291,980 for a total contribution during the measurement period of \$1,376,018 to be reported on the financial statement for the fiscal year ending June 30, 2018.

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

6. INVESTMENT POLICY

The chart below shows how the long-term rate of return on assets is developed based on the Town's Investment Policy.

Investment Target Allocation & Expected Long-Term Real Rate of Return			
Asset Class	Target Allocation	Asset Class	Long-Term Expected Real Rate of Return
Domestic Equity - Large Cap	20.25%	Domestic Equity - Large Cap	4.00%
Domestic Equity - Small/Mid Cap	7.50%	Domestic Equity - Small/Mid Cap	6.00%
International Equity - Developed Market	10.00%	International Equity - Developed Market	4.50%
International Equity-Emerging Market	4.75%	International Equity-Emerging Market	7.00%
Domestic Fixed Income	27.25%	Domestic Fixed Income	2.00%
International Fixed Income	6.00%	International Fixed Income	3.00%
Alternatives	19.50%	Alternatives	6.50%
Real Estate	2.75%	Real Estate	6.25%
Cash	2.00%	Cash	0.00%
Total	100.00%		
		I. Real Rate of Return	4.21%
		II. Inflation Assumption	2.75%
		III. Total Nominal Return [I. + II.]	6.96%
		IV. Investment Expense	0.25%
		V. Net Investment Return [III.-IV.]	6.71%

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

7. **ACTUARIALLY DETERMINED CONTRIBUTION (ADC)**

The Town's Actuarially Determined Contribution (ADC) is an amount actuarially determined in accordance with the parameters of GASB Statement No. 74/75 which represents a level of funding that, if paid on an ongoing basis, is projected to cover the service cost each year and amortize any unfunded actuarial liabilities (or funding excess). The following table shows the components of the Town's annual ADC for the fiscal year and the amount actually contributed to the plan:

Actuarially Determined Contribution - Deficiency / (Excess)	
<u>For the Period Ending on the July 1, 2017 to be Reported on June 30, 2018</u>	
I. Service Cost	1,141,235
II. 30 year level flat dollar amortization of NOL at 4.75%	<u>2,058,062</u>
III. Actuarial Determined Contribution [I. + II.]	3,199,297
IV. Contributions in relation to the actuarially determined contribution	<u>(1,376,018)</u>
V. Contribution deficiency / (excess) [III. + IV.]	<u>1,823,279</u>
Covered employee payroll	38,821,498
Contributions as a % of covered employee payroll	3.54%

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

8. FUNDED STATUS AND FUNDING PROGRESS

As of the July 1, 2017 Measurement Date, the plan was 4.72% funded. The Total OPEB Liability (TOL) for benefits was \$35,795,255, and the Fiduciary Net Position was \$1,689,284, resulting in a Net OPEB Liability (NOL) of \$34,105,971. The covered payroll (annual payroll of active employees covered by the plan) was \$ 38,821,498 and the ratio of the NOL to the covered payroll was 87.9%.

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 actuarially determined 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 Total OPEB Liabilities for benefits.

Fiscal Year	Measurement Date	Fiduciary Net Position	Total OPEB Liability	Net OPEB Liability	Funded Ratio	Covered Payroll	NOL as a % of Covered Payroll
2020	07/01/2019 (est.)	\$2,564,461	\$39,459,345	\$36,894,884	6.5%	\$41,185,727	89.6%
2019	07/01/2018 (est.)	\$2,056,472	\$37,616,691	\$35,560,219	5.5%	\$39,986,143	88.9%
2018	07/01/2017	\$1,689,284	\$35,795,255	\$34,105,971	4.7%	\$38,821,498	87.9%
2017	1/1/2017	\$1,318,317	\$35,307,132	\$33,988,815	3.7%	\$37,690,774	90.2%
2016	1/1/2016	\$0	\$40,360,094	\$40,360,094	0.0%	N/A	N/A
2015	1/1/2015	\$0	\$37,818,945	\$37,818,945	0.0%	\$35,989,000	105.1%

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

9. FIDUCIARY NET POSITION

Statement of Fiduciary Net Position		
July 1, 2017 and July 1, 2018		
	<u>July 1, 2018</u>	<u>July 1, 2017</u>
Assets		
I. Cash and cash equivalents	0	0
<u>Receivables & Prepaid expenses:</u>		
II. Contributions	0	0
III. Investment Income	0	0
IV. Receivables from brokers for unsettled trades	0	0
V. Prepaid expenses	0	0
VI. Total Receivables [II.+III.+IV.+V.]	0	0
<u>OPEB Trust Investments:</u>		
VII. Fixed Income	683,777	561,688
VIII. Stocks	874,001	717,946
IX. Cash and cash equivalents	41,129	33,785
X. Real estate	56,553	46,455
XI. Alternative investments	<u>401,012</u>	<u>329,410</u>
XII. Total Investments [VII.+VIII.+IX.+X.+XI.]	2,056,472	1,689,284
Invested securities lending cash collateral	0	0
Capital assets, net of accumulated depreciation	0	0
Total Assets	2,056,472	1,689,284
Liabilities		
XIII. Accrued expenses and benefits payable	0	0
XIV. Securities lending cash collateral	0	0
XV. Payable to brokers for unsettled trades	0	0
XVI. Total liabilities [XIII.+XIV.+XV.]	<u>0</u>	<u>0</u>
XVII. Net Position restricted for OPEB [XII.-XVI.]	2,056,472	1,689,284

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

9. FIDUCIARY NET POSITION (CONTINUED)

Statement of Changes in Fiduciary Net Position	
<u>For the Year Ending on the July 1, 2017 Measurement Date</u>	
Additions	
<u>Contributions</u>	
Employer Contributions to OPEB Trust	<u>291,980</u>
Total Contributions	291,980
<u>Investment Income / (loss)</u>	
Interest	28,623
Dividends	14,359
Equity fund income, net	0
Net increase in fair value of investments	147,831
Securities lending income	0
Less investment expenses:	
Direct investment expense	0
Securities lending management fees	0
Securities lending borrower rebates	0
Net investment income	190,813
Other income	0
Total Additions	<u>482,793</u>
Deductions	
Service benefits	0
Disability benefits	0
Death benefits	0
Refunds	0
Administrative expenses	0
Total deductions	0
Net increase (decrease)	482,793
Net Position restricted for OPEB	
As of July 1, 2016	<u>1,206,491</u>
As of June 30, 2017	1,689,284

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

10. OPEB LIABILITY, OPEB EXPENSE AND ADC

	Fiscal Year Ending June 30, 2018							
	Town Employees	School Employees	Police Employees	Fire Employees	DPW Employees	Water Enterprise Employees	Retirees Retirees	Total
I. Total OPEB Liability	3,109,212	12,450,936	2,157,052	1,986,356	608,315	722,749	14,760,635	35,795,255
II. Fiduciary Net Position as of July 1, 2017	147,435	583,834	101,409	92,710	29,032	34,265	700,599	1,689,284
III. Net OPEB Liability (Asset) [I. - II.]	2,961,777	11,867,102	2,055,643	1,893,646	579,283	688,484	14,060,036	34,105,971
IV. Service Cost	112,335	727,246	100,132	102,906	50,124	48,492	-	1,141,235
V. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	143,150	573,250	99,312	91,453	28,007	33,276	679,590	1,648,038
VI. Projected Earnings on OPEB Plan Investments	(7,066)	(27,979)	(4,860)	(4,443)	(1,391)	(1,642)	(33,575)	(80,956)
VII. Net Recognition of Deferred (Inflows)/Outflows	(1,917)	(7,593)	(1,319)	(1,206)	(378)	(446)	(9,112)	(21,971)
VIII. Financial Statement Expense [IV. + V. + VI. + VII. + VIII. + VI. + VII.]	246,502	1,264,924	193,265	188,710	76,362	79,680	636,903	2,686,346
IX. Employer Share of Costs	(36,471)	(43,795)	(6,835)	(4,581)	(5,412)	(4,752)	(982,192)	(1,084,038)
X. Employer (Payments) Withdrawals to/from OPEB Trust	(26,747)	(106,776)	(18,294)	(16,948)	(5,308)	(6,230)	(111,677)	(291,980)
XI. Total Employer Contribution [IX. + X.]	(63,218)	(150,571)	(25,129)	(21,529)	(10,720)	(10,982)	(1,093,869)	(1,376,018)
XII. Net OPEB Expense [VIII. + XI.]	183,284	1,114,353	168,136	167,181	65,642	68,698	(456,966)	1,310,328
XIII. Actuarial Determined Contribution (ADC)	291,058	1,443,344	224,176	217,175	85,080	90,037	848,427	3,199,297
XIV. Total Expected Contribution	63,218	150,571	25,129	21,529	10,720	10,982	1,093,869	1,376,018
XV. Percentage of ADC Contributed [XIV. / XIII.]	22%	10%	11%	10%	13%	12%	129%	43%

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)
(continued)

11. OPEB LIABILITY, OPEB EXPENSE AND DEFERRED INFLOW/OUTFLOW

Valuation Date	July 1, 2017
For the Measurement Period ending on the Measurement Date of:	July 1, 2017
For the Reporting Period & Fiscal Year ending on:	June 30, 2018

Source of Deferred Inflow/Outflow	
I. Deferred (Inflow)/Outflow from Actual vs. Expected Experience	0
II. Deferred (Inflow)/Outflow from Investment Experience	(87,886)
III. Deferred (Inflow)/Outflow from Changes in Benefit Terms	0
IV. Deferred (Inflow)/Outflow from Changes in Assumptions	0

Change in Deferred Inflow/Outflow	
I. Deferred Outflow at the beginning of the period	0
II. Deferred Outflow created during the period	0
III. Deferred Outflow recognized during the period	0
IV. Change in Deferred Outflow (II. - III.)	0
V. Deferred Outflow at end of the period (I. + IV.)	0
VI. Deferred Inflow at the beginning of the period	0
VII. Deferred Inflow created during the period	(109,857)
VIII. Deferred Inflow recognized during the period	(21,971)
IX. Deferred Inflow at end of the period (VII. - VIII.)	(87,886)
X. Deferred Inflow at end of the period (VI. + IX.)	(87,886)

Net OPEB Liability	
I. Net OPEB Liability at beginning of period	32,883,529
II. Service Cost	1,141,235
III. Interest on Total OPEB Liability, Service Cost, and Payments	1,648,038
IV. Projected Investment Income	(80,956)
V. Total Employer Contributions	(1,376,018)
VI. Net OPEB Expense - Before Recognition of Deferred (Inflow)/Outflow (II. + III. + IV. + V.)	1,332,299
VII. Deferred Outflow created during the period	0
VIII. Deferred Inflow created during the period	(109,857)
IX. Net OPEB Liability at end of period (I. + VI. + VII. + VIII.)	34,105,971

Net OPEB Expense	
I. Service Cost	1,141,235
II. Interest on Total OPEB Liability, Service Cost, and Payments	1,648,038
III. Projected Investment Income	(80,956)
IV. Recognition of Deferred (Inflow)/Outflow	(21,971)
V. Financial Statement Expense (I. + II. + III. + IV.)	2,686,346
VI. Benefit Payments	(1,084,038)
VII. Contributions to Trust	(291,980)
VIII. Total Employer Payments (VI. + VII.)	(1,376,018)
IX. Total Employer Payments (V. + VIII.)	1,310,328

Valuation Date	July 1, 2017
For the Measurement Period ending on the Measurement Date of:	July 1, 2017
For the Reporting Period & Fiscal Year ending on:	June 30, 2018

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

12. EFFECT OF 1% CHANGE IN HEALTHCARE TREND

Impact of a 1% Change in the Healthcare Trend Rate as of the July 1, 2017 Measurement Date

	<u>1% Decrease (4.00%)</u>	<u>Current Trend Rate (5.00%)</u>	<u>1% Increase (6.00%)</u>
I. Total OPEB Liability	25,534,106	35,795,255	49,065,541
II. Fiduciary Net Position	<u>1,689,284</u>	<u>1,689,284</u>	<u>1,689,284</u>
III. Net OPEB Liability (Asset) [I.-II.]	23,844,822	34,105,971	47,376,257
IV. Service Cost	631,124	1,141,235	1,852,312

13. EFFECT OF 1% CHANGE IN DISCOUNT RATES

Impact of a 1% Change in the Discount Rate as of the July 1, 2017 Measurement Date

	<u>1% Decrease (3.75%)</u>	<u>Current Discount Rate (4.75%)</u>	<u>1% Increase (5.75%)</u>
I. Total OPEB Liability	41,931,106	35,795,255	31,096,498
II. Fiduciary Net Position	<u>1,689,284</u>	<u>1,689,284</u>	<u>1,689,284</u>
III. Net OPEB Liability (Asset) [I.-II.]	40,241,822	34,105,971	29,407,214
IV. Service Cost	1,506,294	1,141,235	874,402

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

14. 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
Discount Rate:	4.75% per annum (previously 4.50%)
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

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

15. RECOGNITION OF OPEB TRUST ASSETS

The State of Massachusetts has 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 75. This legislation was amended effective November 9, 2016 to clarify who may adopt such a Trust and provide guidance on the ongoing operation of such a Trust. To the best of our knowledge, the Town of Hanover has established an irrevocable trust for the purposes of prefunding liabilities under GASB 74/75.

16. OPEB EXPENSE DEVELOPMENT

Components of the Town's OPEB Expenses for the Fiscal Year Ending June 30, 2018	
Description	Amount
I. Service Cost	1,141,235
II. Interest on Total OPEB Liability (Asset), Service Cost, and Benefit Payments	1,648,038
III. Deferred (Inflows)/Outflows from Plan Design Changes*	0
IV. Deferred (Inflows)/Outflows from Plan Experience**	0
V. Deferred (Inflows)/Outflows from Changes of Assumptions**	0
VI. Projected earnings on OPEB plan investments	(80,956)
VII. Deferred (Inflows)/Outflows from Earnings on Plan Investments***	(21,971)
VIII. Total Employer Contributions	(1,376,018)
IX. OPEB Plan administrative expense	0
X. Other changes in fiduciary net position	0
XI. Net OPEB expense [I.+II.+III.+IV.+V.+VI.+VII.+VIII.+IX.+ X.]	1,310,328

* Recognized Immediately

** Amortized over 6.42 years

*** Amortized over 5 years

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

17. CHANGES IN NET OPEB LIABILITY

Changes in Net OPEB Liability			
	Increase (Decrease)		
	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
I. Balances at July 1, 2017 GASB 45	35,307,132	1,206,491	34,100,641
II. Change in Assumptions for GASB 75	(1,217,112)	0	(1,217,112)
III. Balances at July 1, 2017 GASB 75 [I. + II.]	34,090,020	1,206,491	32,883,529
Changes for the year:			
IV. Service Cost	1,141,235	0	1,141,235
V. Interest on Total OPEB Liability, Service Cost, and Benefit Payments	1,648,038	0	1,648,038
VI. Changes in Benefit terms *	0	0	0
VII. Change in assumptions **	0	0	0
VIII. Differences between actual and expected experience **	0	0	0
IX. Net Investment Income	0	190,813	(190,813)
X. Employer Contributions to Trust	0	1,376,018	(1,376,018)
XI. Benefit Payments Withdrawn from Trust	0	(1,084,038)	1,084,038
XII. Benefit payments excluding Implicit Cost	(956,367)	0	(956,367)
XIII. Implicit Cost amount	(127,671)	0	(127,671)
XIV. Total Benefit payments including Implicit Cost [XII. + XIII.]	(1,084,038)	0	(1,084,038)
XV. Administrative expense	0	0	0
XVI. Other Charges	0	0	0
XVII. Net Changes [IV.+V.+VI.+VII.+VIII.+IX.+X.+XI.+XIV.+XV.+XVI.]	1,705,235	482,793	1,222,442
XVII. Balances at July 1, 2017 [III.+XVII.]	35,795,255	1,689,284	34,105,971

* Recognized Immediately

** Amortized over 6.42 years

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

18. MONEY WEIGHTED RATE OF RETURN

Determination of Beginning & Ending Balances of OPEB Plan Investments for Purposes of Calculating the Annual Money-Weighted Rate of Return		
	Assets as of July 1, 2016	Assets as of July 1, 2017
Assets		
Cash and cash equivalents	0	0
Receivables:		
Investment income	0	0
Receivables from brokers for unsettled trades	0	0
Investments		
Fixed income	401,159	561,688
Stocks	512,759	717,946
Cash and cash equivalents	24,129	33,785
Real estate	33,178	46,455
Alternative investments	235,265	329,410
Invested securities lending cash collateral	0	0
Liabilities		
Securities lending cash collateral	0	0
Payable to brokers for unsettled trades	0	0
Total OPEB plan investments	1,206,490	1,689,284

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

18. MONEY WEIGHTED RATE OF RETURN (CONTINUED)

	Plan Investments / Net External	Periods Invested	Period Weight
I. Beginning value - July 1, 2016	1,206,491	12	1.0000
Monthly net external cash flows:			
July	0	11	0.9167
August	0	10	0.8333
September	0	9	0.7500
October	0	8	0.6667
November	0	7	0.5833
December	0	6	0.5000
January	0	5	0.4167
February	0	4	0.3333
March	0	3	0.2500
April	0	2	0.1667
May	0	1	0.0833
<u>June</u>	<u>291,980</u>	0	0.0000
II. Total net external cash flow	291,980		
III. Earnings and increase in fair value	190,813		
IV. Ending value - June 30, 2017 [I.+II.+III.]	1,689,284		
Money Weighted Rate of Return	15.82%		
Asset Value - June 30, 2017	1,689,284		

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

19. PLAN CASH FLOWS

Aggregate External (Noninvestment Cash Flows)	
<u>For the Year Ending on the July 1, 2017 Measurement Date</u>	
Additions	
<u>Contributions</u>	
Member contributions	0
Employer contributions	291,980
Other income	0
Deductions	
Service benefits	0
Disability benefits	0
Death benefits	0
Refunds	0
Administrative expenses	0
Beginning balances of noninvestment-related assets and liabilities	
Contribution receivable	0
Prepaid expenses	0
Accrued expenses & benefits payable	0
Ending balances of noninvestment-related assets and liabilities	
Contribution receivable	0
Prepaid expenses	0
Accrued expenses & benefits payable	0
Change in capital assets - depreciation	0
Aggregate external cash flows	291,980

EXHIBIT AFINANCIAL STATEMENT DISCLOSURE(As of the July 1, 2017 Measurement Date)
(continued)**19. PLAN CASH FLOWS (CONTINUED)**

Reconciliation of Beginning & Ending Balances of OPEB Plan Investments, Aggregate External Cash Flows, and Net Investment Income	
<u>For the Year Ending on the July 1, 2017 Measurement Date</u>	
I. Total OPEB plan investments on July 1, 2016	1,318,317
II. Aggregate external cash flows	291,980
III. Net investment income	<u>190,813</u>
IV. Total OPEB plan investments on July 1, 2017 [I.+II.+III.]	<u><u>1,689,284</u></u>

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

20. PLAN PROJECTION DISCLOSURES

Projection of Contributions using a July 1, 2017 Valuation Date

For the Period Ending on the Measurement Date	I. Payroll for current employees	II. Payroll for future employees	III. Total employee payroll [I.+II.]	IV. Contributions from current employees	V. Employer Payments for current plan members	VI. Employer Payments for future employees	VII. Total Payments [IV.+V.+VI.]
July 1, 2017	38,821,498	0	38,821,498	0	1,084,038	0	1,084,038
July 1, 2018	35,991,195	3,994,948	39,986,143	0	1,158,250	0	1,158,250
July 1, 2019	33,636,717	7,549,010	41,185,727	0	1,209,333	0	1,209,333
July 1, 2020	31,692,963	10,728,336	42,421,299	0	1,284,877	0	1,284,877
July 1, 2021	30,151,050	13,542,888	43,693,938	0	1,358,040	0	1,358,040
July 1, 2022	28,801,251	16,203,505	45,004,756	0	1,413,669	0	1,413,669
July 1, 2023	27,532,742	18,822,157	46,354,899	0	1,497,257	0	1,497,257
July 1, 2024	26,084,236	21,661,310	47,745,546	0	1,602,662	0	1,602,662
July 1, 2025	24,859,934	24,317,978	49,177,912	0	1,689,661	0	1,689,661
July 1, 2026	23,684,009	26,969,240	50,653,249	0	1,796,498	0	1,796,498
July 1, 2027	22,435,865	29,736,981	52,172,846	0	1,904,437	0	1,904,437
July 1, 2028	21,377,352	32,360,679	53,738,031	0	2,000,612	15,515	2,016,127
July 1, 2029	20,274,384	35,075,788	55,350,172	0	2,116,161	43,734	2,159,895
July 1, 2030	19,150,508	37,860,169	57,010,677	0	2,216,001	85,001	2,301,002
July 1, 2031	18,035,971	40,685,026	58,720,997	0	2,337,589	140,624	2,478,213
July 1, 2032	16,953,498	43,529,129	60,482,627	0	2,436,563	208,028	2,644,591
July 1, 2033	15,902,286	46,394,820	62,297,106	0	2,526,866	253,026	2,779,892
July 1, 2034	14,805,572	49,360,447	64,166,019	0	2,596,463	306,121	2,902,584
July 1, 2035	13,794,010	52,296,990	66,091,000	0	2,670,215	366,824	3,037,039
July 1, 2036	12,926,461	55,147,269	68,073,730	0	2,739,890	413,738	3,153,628
July 1, 2037	11,985,791	58,130,151	70,115,942	0	2,795,917	467,213	3,263,130
July 1, 2038	11,086,224	61,133,196	72,219,420	0	2,892,060	549,378	3,441,438
July 1, 2039	10,210,864	64,175,139	74,386,003	0	2,947,821	663,755	3,611,576
July 1, 2040	9,417,409	67,200,174	76,617,583	0	2,984,992	810,629	3,795,621
July 1, 2041	8,664,226	70,251,884	78,916,110	0	2,991,831	993,128	3,984,959
July 1, 2042	7,895,718	73,387,875	81,283,593	0	3,006,867	1,205,899	4,212,766
July 1, 2043	7,187,670	76,534,431	83,722,101	0	3,045,866	1,367,148	4,413,014
July 1, 2044	6,466,707	79,767,057	86,233,764	0	3,087,046	1,548,583	4,635,629
July 1, 2045	5,738,393	83,082,384	88,820,777	0	3,173,413	1,749,490	4,922,903
July 1, 2046	5,017,659	86,467,741	91,485,400	0	3,152,008	1,926,901	5,078,909
July 1, 2047	4,362,680	89,867,282	94,229,962	0	3,177,717	2,121,876	5,299,593
July 1, 2048	3,854,073	93,202,788	97,056,861	0	3,190,129	2,354,442	5,544,571
July 1, 2049	3,406,332	96,562,235	99,968,567	0	3,177,057	2,612,899	5,789,956
July 1, 2050	2,989,249	99,978,375	102,967,624	0	3,196,233	2,898,372	6,094,605
July 1, 2051	2,508,712	103,547,941	106,056,653	0	3,240,110	3,217,012	6,457,122
July 1, 2052	2,105,419	107,132,934	109,238,353	0	3,264,473	3,567,125	6,831,598
July 1, 2053	1,742,164	110,773,340	112,515,504	0	3,220,276	3,916,038	7,136,314
July 1, 2054	1,418,403	114,472,566	115,890,969	0	3,201,169	4,289,501	7,490,670
July 1, 2055	1,141,123	118,226,575	119,367,698	0	3,161,461	4,691,213	7,852,674
July 1, 2056	909,750	122,038,979	122,948,729	0	3,100,226	5,107,837	8,208,063

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

Projection of Contributions using a July 1, 2017 Valuation Date (Continued)
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For the Period Ending on the Measurement Date	I. Payroll for current employees	II. Payroll for future employees	III. Total employee payroll [I.+II.]	IV. Contributions from current employees	V. Employer Payments for current plan members	VI. Employer Payments for future employees	VII. Total Payments [IV.+V.+VI.]
July 1, 2057	702,891	125,934,300	126,637,191	0	3,028,415	5,546,398	8,574,813
July 1, 2058	494,255	129,942,052	130,436,307	0	2,932,705	6,026,631	8,959,336
July 1, 2059	337,865	134,011,531	134,349,396	0	2,897,750	6,535,784	9,433,534
July 1, 2060	229,112	138,150,766	138,379,878	0	2,829,879	7,078,926	9,908,805
July 1, 2061	139,176	142,392,098	142,531,274	0	2,746,649	7,659,118	10,405,767
July 1, 2062	75,591	146,731,621	146,807,212	0	2,700,427	8,273,738	10,974,165
July 1, 2063	34,364	151,177,064	151,211,428	0	2,647,080	8,915,881	11,562,961
July 1, 2064	21,907	155,725,864	155,747,771	0	2,584,030	9,591,964	12,175,994
July 1, 2065	8,483	160,411,721	160,420,204	0	2,514,013	10,307,480	12,821,493
July 1, 2066	4,209	165,228,601	165,232,810	0	2,451,726	11,051,294	13,503,020
July 1, 2067	3,229	170,186,565	170,189,794	0	2,376,720	11,829,743	14,206,463
July 1, 2068	0	175,295,488	175,295,488	0	2,303,162	12,657,357	14,960,519
July 1, 2069	0	180,554,353	180,554,353	0	2,213,566	13,520,859	15,734,425
July 1, 2070	0	185,970,984	185,970,984	0	2,118,519	14,425,681	16,544,200
July 1, 2071	0	191,550,114	191,550,114	0	2,046,565	15,373,904	17,420,469
July 1, 2072	0	197,296,617	197,296,617	0	1,976,175	16,365,217	18,341,392
July 1, 2073	0	203,215,516	203,215,516	0	1,907,043	17,409,543	19,316,586
July 1, 2074	0	209,311,981	209,311,981	0	1,822,954	18,502,391	20,325,345
July 1, 2075	0	215,591,340	215,591,340	0	1,733,370	19,648,295	21,381,665
July 1, 2076	0	222,059,080	222,059,080	0	1,639,112	20,849,864	22,488,976
July 1, 2077	0	228,720,852	228,720,852	0	1,541,493	22,105,013	23,646,506
July 1, 2078	0	235,582,478	235,582,478	0	1,448,916	23,425,456	24,874,372
July 1, 2079	0	242,649,952	242,649,952	0	1,344,866	24,808,152	26,153,018
July 1, 2080	0	249,929,451	249,929,451	0	1,240,125	26,258,669	27,498,794
July 1, 2081	0	257,427,335	257,427,335	0	1,134,875	27,782,018	28,916,893
July 1, 2082	0	265,150,155	265,150,155	0	1,028,676	29,380,678	30,409,354
July 1, 2083	0	273,104,660	273,104,660	0	926,236	31,061,857	31,988,093
July 1, 2084	0	281,297,800	281,297,800	0	820,121	32,825,547	33,645,668
July 1, 2085	0	289,736,734	289,736,734	0	718,578	34,679,439	35,398,017
July 1, 2086	0	298,428,836	298,428,836	0	622,098	36,626,839	37,248,937
July 1, 2087	0	307,381,701	307,381,701	0	530,270	38,671,538	39,201,808
July 1, 2088	0	316,603,152	316,603,152	0	446,107	40,821,396	41,267,503
July 1, 2089	0	326,101,247	326,101,247	0	369,893	43,081,787	43,451,680
July 1, 2090	0	335,884,284	335,884,284	0	302,044	45,457,530	45,759,574
July 1, 2091	0	345,960,813	345,960,813	0	243,043	47,955,209	48,198,252
July 1, 2092	0	356,339,637	356,339,637	0	192,903	50,581,456	50,774,359
July 1, 2093	0	367,029,826	367,029,826	0	150,563	53,342,509	53,493,072
July 1, 2094	0	378,040,721	378,040,721	0	115,881	56,245,626	56,361,507
July 1, 2095	0	389,381,943	389,381,943	0	87,554	59,297,498	59,385,052

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)

(continued)

20. PLAN PROJECTION DISCLOSURES (CONTINUED)

Projection of OPEB Plan's Fiduciary Net Position using a July 1, 2017 Valuation Date								
For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Portion of Employer Contributions for Current Plan Members	III. Total Benefit Payments	IV. Administrative Expense	V. Total Contributions to Trust	VI. Contributions to Trust for Current Plan Members	VII. Investment Earnings	VIII. Ending Fiduciary Net Position for Current Plan Members
July 1, 2017	1,206,491	1,084,038	1,084,038	0	291,980	291,980	190,813	1,689,284
July 1, 2018	1,689,284	1,158,250	1,158,250	0	381,385	343,281	(14,197)	2,018,368
July 1, 2019	2,018,368	1,209,333	1,209,333	0	370,000	302,182	135,432	2,455,982
July 1, 2020	2,455,982	1,284,877	1,284,877	0	370,000	276,427	164,796	2,897,205
July 1, 2021	2,897,205	1,358,040	1,358,040	0	370,000	255,319	194,402	3,346,926
July 1, 2022	3,346,926	1,413,669	1,413,669	0	370,000	236,785	224,579	3,808,290
July 1, 2023	3,808,290	1,497,257	1,497,257	0	370,000	219,763	255,536	4,283,589
July 1, 2024	4,283,589	1,602,662	1,602,662	0	370,000	202,138	287,429	4,773,156
July 1, 2025	4,773,156	1,689,661	1,689,661	0	370,000	187,039	320,279	5,280,474
July 1, 2026	5,280,474	1,796,498	1,796,498	0	370,000	173,001	354,320	5,807,795
July 1, 2027	5,807,795	1,904,437	1,904,437	0	370,000	159,111	389,703	6,356,609
July 1, 2028	6,356,609	2,000,612	2,016,127	0	370,000	147,189	426,528	6,914,811
July 1, 2029	6,914,811	2,116,161	2,159,895	0	370,000	135,528	463,984	7,470,589
July 1, 2030	7,470,589	2,216,001	2,301,002	0	370,000	124,287	501,277	8,011,152
July 1, 2031	8,011,152	2,337,589	2,478,213	0	370,000	113,644	537,548	8,521,720
July 1, 2032	8,521,720	2,436,563	2,644,591	0	370,000	103,712	571,807	8,989,211
July 1, 2033	8,989,211	2,526,866	2,779,892	0	370,000	94,448	603,176	9,433,809
July 1, 2034	9,433,809	2,596,463	2,902,584	0	370,000	85,373	633,009	9,846,070
July 1, 2035	9,846,070	2,670,215	3,037,039	0	370,000	77,224	660,671	10,217,141
July 1, 2036	10,217,141	2,739,890	3,153,628	0	370,000	70,259	685,570	10,559,232
July 1, 2037	10,559,232	2,795,917	3,263,130	0	370,000	63,249	708,524	10,863,792
July 1, 2038	10,863,792	2,892,060	3,441,438	0	370,000	56,798	728,960	11,100,172
July 1, 2039	11,100,172	2,947,821	3,611,576	0	370,000	50,789	744,822	11,232,028
July 1, 2040	11,232,028	2,984,992	3,795,621	0	370,000	45,478	753,669	11,220,546
July 1, 2041	11,220,546	2,991,831	3,984,959	0	370,000	40,622	752,899	11,020,939
July 1, 2042	11,020,939	3,006,867	4,212,766	0	370,000	35,941	739,505	10,590,486
July 1, 2043	10,590,486	3,045,866	4,413,014	0	370,000	31,765	710,622	9,965,725
July 1, 2044	9,965,725	3,087,046	4,635,629	0	370,000	27,746	668,700	9,113,588
July 1, 2045	9,113,588	3,173,413	4,922,903	0	370,000	23,904	611,522	7,999,524
July 1, 2046	7,999,524	3,152,008	5,078,909	0	370,000	20,293	536,768	6,629,684
July 1, 2047	6,629,684	3,177,717	5,299,593	0	370,000	17,130	444,852	4,969,790
July 1, 2048	4,969,790	3,190,129	5,544,571	0	370,000	14,692	333,473	2,963,513
July 1, 2049	2,963,513	3,177,057	5,789,956	0	370,000	12,607	198,852	562,073
July 1, 2050	562,073	3,196,233	6,094,605	0	370,000	10,741	37,715	48,456
July 1, 2051	48,456	3,240,110	6,457,122	0	370,000	8,752	3,251	12,003
July 1, 2052	12,003	3,264,473	6,831,598	0	370,000	7,131	805	7,936
July 1, 2053	7,936	3,220,276	7,136,314	0	370,000	5,729	533	6,262
July 1, 2054	6,262	3,201,169	7,490,670	0	370,000	4,528	420	4,948
July 1, 2055	4,948	3,161,461	7,852,674	0	370,000	3,537	332	3,869
July 1, 2056	3,869	3,100,226	8,208,063	0	370,000	2,738	260	2,998

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

Projection of OPEB Plan's Fiduciary Net Position using a July 1, 2017 Valuation Date (Continued)								
For the Period Ending on the Measurement Date	I. Beginning Fiduciary Net Position for Current Plan Members	II. Portion of Employer Contributions for Current Plan Members	III. Total Benefit Payments	IV. Administrative Expense	V. Total Contributions to Trust	VI. Contributions to Trust for Current Plan Members	VII. Investment Earnings	VIII. Ending Fiduciary Net Position for Current Plan Members
July 1, 2057	2,998	3,028,415	8,574,813	0	370,000	2,054	201	2,255
July 1, 2058	2,255	2,932,705	8,959,336	0	370,000	1,402	151	1,553
July 1, 2059	1,553	2,897,750	9,433,534	0	370,000	930	104	1,034
July 1, 2060	1,034	2,829,879	9,908,805	0	370,000	613	69	682
July 1, 2061	682	2,746,649	10,405,767	0	370,000	361	46	407
July 1, 2062	407	2,700,427	10,974,165	0	370,000	191	27	218
July 1, 2063	218	2,647,080	11,562,961	0	370,000	84	15	99
July 1, 2064	99	2,584,030	12,175,994	0	370,000	52	7	59
July 1, 2065	59	2,514,013	12,821,493	0	370,000	20	4	24
July 1, 2066	24	2,451,726	13,503,020	0	370,000	9	2	11
July 1, 2067	11	2,376,720	14,206,463	0	370,000	7	1	8
July 1, 2068	8	2,303,162	14,960,519	0	370,000	0	1	1
July 1, 2069	1	2,213,566	15,734,425	0	370,000	0	0	0
July 1, 2070	0	2,118,519	16,544,200	0	370,000	0	0	0
July 1, 2071	0	2,046,565	17,420,469	0	370,000	0	0	0
July 1, 2072	0	1,976,175	18,341,392	0	370,000	0	0	0
July 1, 2073	0	1,907,043	19,316,586	0	370,000	0	0	0
July 1, 2074	0	1,822,954	20,325,345	0	370,000	0	0	0
July 1, 2075	0	1,733,370	21,381,665	0	370,000	0	0	0
July 1, 2076	0	1,639,112	22,488,976	0	370,000	0	0	0
July 1, 2077	0	1,541,493	23,646,506	0	370,000	0	0	0
July 1, 2078	0	1,448,916	24,874,372	0	370,000	0	0	0
July 1, 2079	0	1,344,866	26,153,018	0	370,000	0	0	0
July 1, 2080	0	1,240,125	27,498,794	0	370,000	0	0	0
July 1, 2081	0	1,134,875	28,916,893	0	370,000	0	0	0
July 1, 2082	0	1,028,676	30,409,354	0	370,000	0	0	0
July 1, 2083	0	926,236	31,988,093	0	370,000	0	0	0
July 1, 2084	0	820,121	33,645,668	0	370,000	0	0	0
July 1, 2085	0	718,578	35,398,017	0	370,000	0	0	0
July 1, 2086	0	622,098	37,248,937	0	370,000	0	0	0
July 1, 2087	0	530,270	39,201,808	0	370,000	0	0	0
July 1, 2088	0	446,107	41,267,503	0	370,000	0	0	0
July 1, 2089	0	369,893	43,451,680	0	370,000	0	0	0
July 1, 2090	0	302,044	45,759,574	0	370,000	0	0	0
July 1, 2091	0	243,043	48,198,252	0	370,000	0	0	0
July 1, 2092	0	192,903	50,774,359	0	370,000	0	0	0
July 1, 2093	0	150,563	53,493,072	0	370,000	0	0	0
July 1, 2094	0	115,881	56,361,507	0	370,000	0	0	0
July 1, 2095	0	87,554	59,385,052	0	370,000	0	0	0

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

20. PLAN PROJECTION DISCLOSURES (CONTINUED)

Actuarial Present Values of Projected Benefit Payments using a July 1, 2017 Valuation Date							
For the Period Ending on the Measurement Date	Beginning Fiduciary Net Position for Current Plan Members	Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments	Present Value of Unfunded Benefit Payments	Present Value of Benefit Payments using Single Equivalent Discount Rate
July 1, 2017	1,206,491	1,084,038	1,084,038	0	1,084,038	0	1,084,038
July 1, 2018	1,689,284	1,158,250	1,158,250	0	1,085,418	0	1,107,591
July 1, 2019	2,018,368	1,209,333	1,209,333	0	1,062,027	0	1,105,861
July 1, 2020	2,455,982	1,284,877	1,284,877	0	1,057,417	0	1,123,553
July 1, 2021	2,897,205	1,358,040	1,358,040	0	1,047,351	0	1,135,590
July 1, 2022	3,346,926	1,413,669	1,413,669	0	1,021,697	0	1,130,405
July 1, 2023	3,808,290	1,497,257	1,497,257	0	1,014,065	0	1,144,880
July 1, 2024	4,283,589	1,602,662	1,602,662	0	1,017,199	0	1,171,879
July 1, 2025	4,773,156	1,689,661	1,689,661	0	1,004,983	0	1,181,457
July 1, 2026	5,280,474	1,796,498	1,796,498	0	1,001,338	0	1,201,219
July 1, 2027	5,807,795	1,904,437	1,904,437	0	994,753	0	1,217,698
July 1, 2028	6,356,609	2,000,612	2,000,612	0	979,279	0	1,223,244
July 1, 2029	6,914,811	2,116,161	2,116,161	0	970,705	0	1,237,303
July 1, 2030	7,470,589	2,216,001	2,216,001	0	952,584	0	1,239,009
July 1, 2031	8,011,152	2,337,589	2,337,589	0	941,665	0	1,249,828
July 1, 2032	8,521,720	2,436,563	2,436,563	0	919,816	0	1,245,767
July 1, 2033	8,989,211	2,526,866	2,526,866	0	893,923	0	1,235,432
July 1, 2034	9,433,809	2,596,463	2,596,463	0	860,786	0	1,213,936
July 1, 2035	9,846,070	2,670,215	2,670,215	0	829,572	0	1,193,816
July 1, 2036	10,217,141	2,739,890	2,739,890	0	797,693	0	1,171,390
July 1, 2037	10,559,232	2,795,917	2,795,917	0	762,820	0	1,143,062
July 1, 2038	10,863,792	2,892,060	2,892,060	0	739,435	0	1,130,655
July 1, 2039	11,100,172	2,947,821	2,947,821	0	706,299	0	1,102,050
July 1, 2040	11,232,028	2,984,992	2,984,992	0	670,232	0	1,067,138
July 1, 2041	11,220,546	2,991,831	2,991,831	0	629,527	0	1,022,803
July 1, 2042	11,020,939	3,006,867	3,006,867	0	592,907	0	982,984
July 1, 2043	10,590,486	3,045,866	3,045,866	0	562,831	0	952,182
July 1, 2044	9,965,725	3,087,046	3,087,046	0	534,570	0	922,847
July 1, 2045	9,113,588	3,173,413	3,173,413	0	514,972	0	907,174
July 1, 2046	7,999,524	3,152,008	3,152,008	0	479,335	0	861,645
July 1, 2047	6,629,684	3,177,717	3,177,717	0	452,858	0	830,680
July 1, 2048	4,969,790	3,190,129	3,190,129	0	426,039	0	797,451
July 1, 2049	2,963,513	3,177,057	2,963,513	213,544	370,888	79,697	759,448
July 1, 2050	562,073	3,196,233	562,073	2,634,160	65,921	953,284	730,615
July 1, 2051	48,456	3,240,110	48,456	3,191,654	5,326	1,120,004	708,251
July 1, 2052	12,003	3,264,473	12,003	3,252,470	1,236	1,106,727	682,367
July 1, 2053	7,936	3,220,276	7,936	3,212,340	766	1,059,919	643,688
July 1, 2054	6,262	3,201,169	6,262	3,194,907	566	1,022,193	611,882
July 1, 2055	4,948	3,161,461	4,948	3,156,513	419	979,278	577,862
July 1, 2056	3,869	3,100,226	3,869	3,096,357	307	931,479	541,885

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE (As of the July 1, 2017 Measurement Date) (continued)

20. PLAN PROJECTION DISCLOSURES (CONTINUED)

Actuarial Present Values of Projected Benefit Payments using a July 1, 2017 Valuation Date (Continued)							
For the Period Ending on the Measurement Date	Beginning Fiduciary Net Position for Current Plan Members	Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments	Present Value of Unfunded Benefit Payments	Present Value of Benefit Payments using Single Equivalent Discount Rate
July 1, 2057	2,998	3,028,415	2,998	3,025,417	223	882,533	506,182
July 1, 2058	2,255	2,932,705	2,255	2,930,450	157	828,903	468,745
July 1, 2059	1,553	2,897,750	1,553	2,896,197	102	794,367	442,901
July 1, 2060	1,034	2,829,879	1,034	2,828,845	63	752,360	413,610
July 1, 2061	682	2,746,649	682	2,745,967	39	708,167	383,887
July 1, 2062	407	2,700,427	407	2,700,020	22	675,197	360,919
July 1, 2063	218	2,647,080	218	2,646,862	11	641,828	338,316
July 1, 2064	99	2,584,030	99	2,583,931	5	607,564	315,813
July 1, 2065	59	2,514,013	59	2,513,954	3	573,181	293,817
July 1, 2066	24	2,451,726	24	2,451,702	1	542,033	274,005
July 1, 2067	11	2,376,720	11	2,376,709	0	509,516	254,005
July 1, 2068	8	2,303,162	8	2,303,154	0	478,772	235,378
July 1, 2069	1	2,213,566	1	2,213,565	0	446,192	216,327
July 1, 2070	0	2,118,519	0	2,118,519	0	414,081	197,983
July 1, 2071	0	2,046,565	0	2,046,565	0	387,884	182,894
July 1, 2072	0	1,976,175	0	1,976,175	0	363,183	168,879
July 1, 2073	0	1,907,043	0	1,907,043	0	339,848	155,843
July 1, 2074	0	1,822,954	0	1,822,954	0	315,009	142,456
July 1, 2075	0	1,733,370	0	1,733,370	0	290,444	129,531
July 1, 2076	0	1,639,112	0	1,639,112	0	266,320	117,130
July 1, 2077	0	1,541,493	0	1,541,493	0	242,862	105,336
July 1, 2078	0	1,448,916	0	1,448,916	0	221,353	94,680
July 1, 2079	0	1,344,866	0	1,344,866	0	199,225	84,037
July 1, 2080	0	1,240,125	0	1,240,125	0	178,137	74,103
July 1, 2081	0	1,134,875	0	1,134,875	0	158,074	64,848
July 1, 2082	0	1,028,676	0	1,028,676	0	138,936	56,208
July 1, 2083	0	926,236	0	926,236	0	121,306	48,397
July 1, 2084	0	820,121	0	820,121	0	104,151	40,978
July 1, 2085	0	718,578	0	718,578	0	88,487	34,334
July 1, 2086	0	622,098	0	622,098	0	74,283	28,424
July 1, 2087	0	530,270	0	530,270	0	61,398	23,169
July 1, 2088	0	446,107	0	446,107	0	50,086	18,639
July 1, 2089	0	369,893	0	369,893	0	40,270	14,779
July 1, 2090	0	302,044	0	302,044	0	31,886	11,540
July 1, 2091	0	243,043	0	243,043	0	24,879	8,880
July 1, 2092	0	192,903	0	192,903	0	19,147	6,740
July 1, 2093	0	150,563	0	150,563	0	14,492	5,030
July 1, 2094	0	115,881	0	115,881	0	10,815	3,702
July 1, 2095	0	87,554	0	87,554	0	7,924	2,675

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)
(continued)

21. CHANGES TO NET OPEB EXPENSE

Deferred (Inflows)/Outflows in OPEB Expense arising from the recognition of the effects of differences between expected & actual experience								
Fiscal Year	Differences between actual & expected experience	Recognition Period (years)	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
2010								
2011								
2012								
2013								
2014								
2015								
2016								
2017								
2018	0	6.42	0	0	0	0	0	0
2019								
Net increase (decrease) in OPEB expense			0	0	0	0	0	0

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)
(continued)

21. CHANGES TO NET OPEB EXPENSE (CONTINUED)

Deferred (Inflows)/Outflows in OPEB Expense arising from the recognition of the effects of Changes in Assumptions								
Fiscal Year	Differences from changes in Actuarial Assumptions	Recognition Period (years)	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
2010								
2011								
2012								
2013								
2014								
2015								
2016								
2017								
2018	0	6.42	0	0	0	0	0	0
2019								
Net increase (decrease) in OPEB expense			0	0	0	0	0	0

EXHIBIT A

FINANCIAL STATEMENT DISCLOSURE

(As of the July 1, 2017 Measurement Date)
(continued)

21. CHANGES TO NET OPEB EXPENSE (CONTINUED)

Deferred (Inflows)/Outflows in OPEB Expense arising from the recognition of differences between Projected & Actual Earnings on OPEB Plan Investments								
Fiscal Year	Differences between actual & expected earnings	Recognition Period (years)	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>
2010								
2011								
2012								
2013								
2014								
2015								
2016								
2017								
2018	(109,857)	5.00	(21,971)	(21,971)	(21,971)	(21,971)	(21,973)	0
2019								
Net increase (decrease) in OPEB expense			(21,971)	(21,971)	(21,971)	(21,971)	(21,973)	0

EXHIBIT A

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)

Notes to Required Supplementary Information:

Valuation Date:	Actuarially Determined Contribution was calculated as of July 1, 2017.
Actuarial Cost Method:	Individual Entry Age Normal
Asset-Valuation Method:	Market Value of Assets as of the Measurement Date, July 1, 2017.
<u>Actuarial Assumptions:</u>	
Investment Rate of Return:	6.71%, net of OPEB plan investment expense, including inflation.
Municipal Bond Rate	3.13% as of July 1, 2017 (source: S&P Municipal Bond 20-Year High Grade Index – SAPIHG)
Single Equivalent Discount Rate:	4.75%, net of OPEB plan investment expense, including inflation.
Inflation:	2.75% as of July 1, 2017 and for future periods
Salary Increases:	3.00% annually as of July 1, 2017 and for future periods
Cost of Living Adjustment:	Not Applicable
Pre-Retirement Mortality:	RP-2000 Employees Mortality Table projected generationally with scale BB and a base year 2009 for males and females
Post-Retirement Mortality:	RP-2000 Healthy Annuitant Mortality Table projected generationally with scale BB and a base year 2009 for males and females

EXHIBIT BREQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)

(continued)

Notes to Required Supplementary Information (Continued):

Disabled Mortality:

RP-2000 Healthy Annuitant Table projected
generationally with Scale BB and a base
year 2012 for males and femalesPlan Membership

Plan Membership: At July 1, 2017, OPEB plan membership consisted of the following

Inactive employees or beneficiaries currently receiving benefits:	337
Active Employees:	<u>606</u>
Total:	943

Changes in Assumptions:

Effective July 1, 2017

- Discount rate is 4.75% previously 4.50%

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)
 (continued)

Notes to Required Supplementary Information (Continued):

Deferred Outflows of Resources and Deferred Inflows of Resources Arising between Expected & Actual Experience					
Fiscal Year	Experience Losses	Experience Gains	Amounts recognized in OPEB Expense through June 30, 2018	Balances at June 30, 2018	
				Deferred Outflows of Resources	Deferred Inflows of Resources
2009				0	0
2010				0	0
2011				0	0
2012				0	0
2013				0	0
2014				0	0
2015				0	0
2016				0	0
2017				0	0
2018	0	0	0	0	0
Total				0	0

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)
(continued)

Notes to Required Supplementary Information (Continued):

Deferred Outflows of Resources and Deferred Inflows of Resources Arising from Changes of Assumptions					
Fiscal Year	Increase in the Total OPEB Liability	Decrease in the Total OPEB Liability	Amounts recognized in OPEB Expense through June 30, 2018	Balances at June 30, 2018	
				Deferred Outflows of Resources	Deferred Inflows of Resources
2009				0	0
2010				0	0
2011				0	0
2012				0	0
2013				0	0
2014				0	0
2015				0	0
2016				0	0
2017				0	0
2018	0	0	0	0	0
Total				0	0

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)
(continued)

Notes to Required Supplementary Information (Continued):

Deferred Outflows of Resources and Deferred Inflows of Resources between Projected & Actual Earnings on OPEB Plan Investments					
Fiscal Year	Increase in the Total OPEB Liability	Decrease in the Total OPEB Liability	Amounts recognized in OPEB Expense through June 30, 2018	Balances at June 30, 2018	
				Deferred Outflows of Resources	Deferred Inflows of Resources
2009				0	0
2010				0	0
2011				0	0
2012				0	0
2013				0	0
2014				0	0
2015				0	0
2016				0	0
2017				0	0
2018	0	(109,857)	(21,971)	0	(87,886)
Total				0	(87,886)

EXHIBIT B

REQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)

(continued)

Notes to Required Supplementary Information (Continued):

OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources related to OPEB as of June 30, 2018		
	Deferred Outflows of Resources	Deferred Inflows of Resources
I. Differences between actual & expected experience	0	0
II. Changes of assumptions	0	0
III. Net difference between projected & actual earnings on OPEB plan investments	<u>0</u>	<u>(87,886)</u>
IV. Total [I.+II.+III.]	0	(87,886)
 Year ended June 30:		
2019	(21,971)	
2020	(21,971)	
2021	(21,971)	
2022	(21,973)	
2023	0	
Thereafter	0	

EXHIBIT BREQUIRED SUPPLEMENTARY INFORMATION

(As of the July 1, 2017 Measurement Date)

(continued)

Notes to Required Supplementary Information (Continued):Contributions:

The contribution requirements of plan members and the Town are established and may be amended through Town ordinances. The Town contributed \$291,980 beyond the pay-as-you-go cost for the period ending on the July 1, 2017 Measurement Date. For the year ending on the July 1, 2017 Measurement Date total Town premiums plus implicit costs for the retiree medical program were \$1,084,038 .

EXHIBIT C

PLAN DEMOGRAPHICS (As of the July 1, 2017 Valuation Date)

ACTIVE EMPLOYEES

Valuation Date	<u>July 1, 2017</u>	<u>January 1, 2015</u>
A. Average Age at Hire	35.59	N/A
B. Average Service	<u>10.51</u>	<u>N/A</u>
C. Average Current Age	46.10	N/A

RETIRED EMPLOYEES & DEPENDENTS

	<u>July 1, 2017</u>	<u>January 1, 2015</u>
I. Retirees		
A. Under Age 65	36	N/A
B. Age 65 & Over	<u>274</u>	<u>N/A</u>
C. Total Retirees	310	N/A
II. Dependents of Retirees		
A. Under Age 65	9	N/A
B. Age 65 & Over	<u>18</u>	<u>N/A</u>
C. Total Retirees	27	N/A
III. Retirees & Dependents		
A. Under Age 65	45	N/A
B. Age 65 & Over	<u>292</u>	<u>N/A</u>
C. Total Retirees	337	N/A

EXHIBIT D

PROJECTED CASH FLOWS (OPEN GROUP)

Total Medical & Life Insurance - Funding - 4.75% discount rate

For the Fiscal Year	Period Ending on the Measurement Date of:	I. Total OPEB Liability ("TOL") as of Measurement Date	II. Fiduciary Net Position as of Measurement Date with expected 6.71% return	III. Net OPEB Liability (Asset) [I. - II.]	IV. Funded Ratio [II. / I.]	V. Service Cost	VI. Employer Share of Premiums / Claims	VII. Excess Employer Payments (beyond claims)	VIII. Total Employer Payments [VI. + VII.]
2018	July 1, 2017	35,795,255	1,689,284	34,105,971	4.72%	1,141,235	1,084,038	291,980	1,376,018
2019	July 1, 2018	37,616,691	2,056,472	35,560,219	5.47%	1,247,351	1,158,250	381,385	1,539,635
2020	July 1, 2019	39,459,345	2,564,461	36,894,884	6.50%	1,333,347	1,209,333	370,000	1,579,333
2021	July 1, 2020	41,468,386	3,106,536	38,361,850	7.49%	1,421,592	1,284,877	370,000	1,654,877
2022	July 1, 2021	43,588,300	3,684,985	39,903,315	8.45%	1,510,789	1,358,040	370,000	1,728,040
2023	July 1, 2022	45,842,355	4,302,247	41,540,108	9.38%	1,598,550	1,413,669	370,000	1,783,669
2024	July 1, 2023	48,209,034	4,960,928	43,248,106	10.29%	1,688,641	1,497,257	370,000	1,867,257
2025	July 1, 2024	50,665,424	5,663,806	45,001,618	11.18%	1,774,623	1,602,662	370,000	1,972,662
2026	July 1, 2025	53,251,345	6,413,847	46,837,498	12.04%	1,874,581	1,689,661	370,000	2,059,661
2027	July 1, 2026	55,952,397	7,214,216	48,738,181	12.89%	1,975,859	1,796,498	370,000	2,166,498
2028	July 1, 2027	58,769,326	8,068,290	50,701,036	13.73%	2,074,249	1,904,437	370,000	2,274,437
2029	July 1, 2028	61,714,515	8,979,672	52,734,843	14.55%	2,181,453	2,016,127	370,000	2,386,127
2030	July 1, 2029	64,753,807	9,952,208	54,801,599	15.37%	2,294,044	2,159,895	370,000	2,529,895
2031	July 1, 2030	67,912,167	10,990,001	56,922,166	16.18%	2,414,249	2,301,002	370,000	2,671,002
2032	July 1, 2031	71,158,705	12,097,430	59,061,275	17.00%	2,538,559	2,478,213	370,000	2,848,213
2033	July 1, 2032	74,512,651	13,279,168	61,233,483	17.82%	2,673,312	2,644,591	370,000	3,014,591
2034	July 1, 2033	78,031,509	14,540,200	63,491,309	18.63%	2,815,178	2,779,892	370,000	3,149,892
2035	July 1, 2034	81,723,346	15,885,847	65,837,499	19.44%	2,960,734	2,902,584	370,000	3,272,584
2036	July 1, 2035	85,602,020	17,321,787	68,280,233	20.24%	3,116,313	3,037,039	370,000	3,407,039
2037	July 1, 2036	89,735,760	18,854,079	70,881,681	21.01%	3,282,600	3,153,628	370,000	3,523,628
2038	July 1, 2037	94,116,266	20,489,188	73,627,078	21.77%	3,455,051	3,263,130	370,000	3,633,130
2039	July 1, 2038	98,730,542	22,234,013	76,496,529	22.52%	3,634,964	3,441,438	370,000	3,811,438
2040	July 1, 2039	103,577,389	24,095,915	79,481,474	23.26%	3,831,220	3,611,576	370,000	3,981,576
2041	July 1, 2040	108,670,557	26,082,751	82,587,806	24.00%	4,040,298	3,795,621	370,000	4,165,621
2042	July 1, 2041	114,001,209	28,202,904	85,798,305	24.74%	4,261,166	3,984,959	370,000	4,354,959
2043	July 1, 2042	119,651,290	30,465,319	89,185,971	25.46%	4,495,074	4,212,766	370,000	4,582,766
2044	July 1, 2043	125,613,364	32,879,542	92,733,822	26.18%	4,746,314	4,413,014	370,000	4,783,014
2045	July 1, 2044	131,905,290	35,455,759	96,449,531	26.88%	5,011,602	4,635,629	370,000	5,005,629
2046	July 1, 2045	138,457,331	38,204,840	100,252,491	27.59%	5,290,158	4,922,903	370,000	5,292,903
2047	July 1, 2046	145,488,264	41,138,385	104,349,879	28.28%	5,585,992	5,078,909	370,000	5,448,909
2048	July 1, 2047	152,951,757	44,268,771	108,682,986	28.94%	5,898,582	5,299,593	370,000	5,669,593
2049	July 1, 2048	160,843,950	47,609,206	113,234,744	29.60%	6,222,190	5,544,571	370,000	5,914,571

EXHIBIT D

PROJECTED CASH FLOWS (OPEN GROUP)

Total Medical & Life Insurance - 6.75% discount rate increasing at 0.00% per year

For the Fiscal Year	Period Ending on the Measurement Date of:	I. Total OPEB Liability ("TOL") as of Measurement Date	II. Fiduciary Net Position as of Measurement Date with expected 6.71% return	III. Net OPEB Liability (Asset) ("NOL") [I. - II.]	IV Funded Ratio [II. / I.]	V. Service Cost	VI. Employer Share of Premiums / Claims	VII. Annual Funding / (Payments)	VIII. Total Employer Payments [VI. + VII.]
2018	July 1, 2017	27,064,636	1,689,284	25,375,352	6.24%	678,981	1,084,038	291,980	1,376,018
2019	July 1, 2018	28,449,328	2,056,472	26,392,856	7.23%	747,995	1,158,250	1,244,948	2,403,198
2020	July 1, 2019	29,932,090	3,439,409	26,492,681	11.49%	803,761	1,209,333	1,244,948	2,454,281
2021	July 1, 2020	31,493,647	4,915,141	26,578,506	15.61%	860,505	1,284,877	1,244,948	2,529,825
2022	July 1, 2021	33,142,258	6,489,895	26,652,363	19.58%	917,343	1,358,040	1,244,948	2,602,988
2023	July 1, 2022	34,902,530	8,170,315	26,732,215	23.41%	973,264	1,413,669	1,244,948	2,658,617
2024	July 1, 2023	36,752,529	9,963,491	26,789,038	27.11%	1,030,429	1,497,257	1,244,948	2,742,205
2025	July 1, 2024	38,670,873	11,876,989	26,793,884	30.71%	1,084,593	1,602,662	1,244,948	2,847,610
2026	July 1, 2025	40,691,748	13,918,883	26,772,865	34.21%	1,146,764	1,689,661	1,244,948	2,934,609
2027	July 1, 2026	42,801,168	16,097,788	26,703,380	37.61%	1,210,081	1,796,498	1,244,948	3,041,446
2028	July 1, 2027	45,001,047	18,422,898	26,578,149	40.94%	1,270,952	1,904,437	1,244,948	3,149,385
2029	July 1, 2028	47,300,253	20,904,022	26,396,231	44.19%	1,337,275	2,016,127	1,244,948	3,261,075
2030	July 1, 2029	49,665,750	23,551,630	26,114,120	47.42%	1,406,641	2,159,895	1,244,948	3,404,843
2031	July 1, 2030	52,117,659	26,376,892	25,740,767	50.61%	1,480,656	2,301,002	1,244,948	3,545,950
2032	July 1, 2031	54,620,347	29,391,729	25,228,618	53.81%	1,556,868	2,478,213	1,244,948	3,723,161
2033	July 1, 2032	57,194,559	32,608,862	24,585,697	57.01%	1,639,618	2,644,591	1,244,948	3,889,539
2034	July 1, 2033	59,887,096	36,041,865	23,845,231	60.18%	1,726,584	2,779,892	1,244,948	4,024,840
2035	July 1, 2034	62,711,791	39,705,222	23,006,569	63.31%	1,815,454	2,902,584	1,244,948	4,147,532
2036	July 1, 2035	65,681,940	43,614,390	22,067,550	66.40%	1,910,473	3,037,039	1,244,948	4,281,987
2037	July 1, 2036	68,849,274	47,785,864	21,063,410	69.41%	2,012,060	3,153,628	1,244,948	4,398,576
2038	July 1, 2037	72,213,766	52,237,243	19,976,523	72.34%	2,117,470	3,263,130	1,244,948	4,508,078
2039	July 1, 2038	75,750,219	56,987,310	18,762,909	75.23%	2,227,128	3,441,438	1,244,948	4,686,386
2040	July 1, 2039	79,462,667	62,056,107	17,406,560	78.09%	2,346,845	3,611,576	1,244,948	4,856,524
2041	July 1, 2040	83,356,753	67,465,020	15,891,733	80.94%	2,474,398	3,795,621	1,244,948	5,040,569
2042	July 1, 2041	87,431,291	73,236,871	14,194,420	83.77%	2,609,076	3,984,959	1,244,948	5,229,907
2043	July 1, 2042	91,729,443	79,396,013	12,333,430	86.55%	2,751,751	4,212,766	1,244,948	5,457,714
2044	July 1, 2043	96,261,187	85,968,433	10,292,754	89.31%	2,904,907	4,413,014	1,244,948	5,657,962
2045	July 1, 2044	101,034,570	92,981,863	8,052,707	92.03%	3,066,545	4,635,629	1,244,948	5,880,577
2046	July 1, 2045	105,990,918	100,465,894	5,525,024	94.79%	3,236,210	4,922,903	1,244,948	6,167,851
2047	July 1, 2046	111,317,010	108,452,103	2,864,907	97.43%	3,416,299	5,078,909	1,244,948	6,323,857
2048	July 1, 2047	116,974,192	116,974,187	5	100.00%	3,606,382	5,299,593	5	5,299,598
2049	July 1, 2048	122,952,203	124,823,160	(1,870,957)	101.52%	3,802,767	5,544,571	(1,870,957)	3,673,614

EXHIBIT D

PROJECTED CASH FLOWS (OPEN GROUP)

Total Medical & Life Insurance - 6.75% discount rate and increasing at 3.00% per year

For the Fiscal Year	Period Ending on the Measurement Date of:	I. Total OPEB Liability ("TOL") as of Measurement Date	II. Fiduciary Net Position as of Measurement Date with expected 6.71% return	III. Net OPEB Liability (Asset) ("NOL") [I. - II.]	IV Funded Ratio [II. / I.]	V. Service Cost	VI. Employer Share of Premiums / Claims	VII. Annual Funding / (Payments)	VIII. Total Employer Payments [VI. + VII.]
2018	July 1, 2017	27,064,636	1,689,284	25,375,352	6.24%	678,981	1,084,038	291,980	1,376,018
2019	July 1, 2018	28,449,328	2,056,472	26,392,856	7.23%	747,995	1,158,250	993,188	2,151,438
2020	July 1, 2019	29,932,090	3,187,649	26,744,441	10.65%	803,761	1,209,333	1,022,984	2,232,317
2021	July 1, 2020	31,493,647	4,424,524	27,069,123	14.05%	860,505	1,284,877	1,053,674	2,338,551
2022	July 1, 2021	33,142,258	5,775,084	27,367,174	17.43%	917,343	1,358,040	1,085,284	2,443,324
2023	July 1, 2022	34,902,530	7,247,876	27,654,654	20.77%	973,264	1,413,669	1,117,843	2,531,512
2024	July 1, 2023	36,752,529	8,852,051	27,900,478	24.09%	1,030,429	1,497,257	1,151,378	2,648,635
2025	July 1, 2024	38,670,873	10,597,402	28,073,471	27.40%	1,084,593	1,602,662	1,185,919	2,788,581
2026	July 1, 2025	40,691,748	12,494,407	28,197,341	30.71%	1,146,764	1,689,661	1,221,497	2,911,158
2027	July 1, 2026	42,801,168	14,554,279	28,246,889	34.00%	1,210,081	1,796,498	1,258,142	3,054,640
2028	July 1, 2027	45,001,047	16,789,013	28,212,034	37.31%	1,270,952	1,904,437	1,295,886	3,200,323
2029	July 1, 2028	47,300,253	19,211,442	28,088,811	40.62%	1,337,275	2,016,127	1,334,763	3,350,890
2030	July 1, 2029	49,665,750	21,835,293	27,830,457	43.96%	1,406,641	2,159,895	1,374,806	3,534,701
2031	July 1, 2030	52,117,659	24,675,247	27,442,412	47.35%	1,480,656	2,301,002	1,416,050	3,717,052
2032	July 1, 2031	54,620,347	27,747,006	26,873,341	50.80%	1,556,868	2,478,213	1,458,532	3,936,745
2033	July 1, 2032	57,194,559	31,067,362	26,127,197	54.32%	1,639,618	2,644,591	1,502,288	4,146,879
2034	July 1, 2033	59,887,096	34,654,270	25,232,826	57.87%	1,726,584	2,779,892	1,547,357	4,327,249
2035	July 1, 2034	62,711,791	38,526,929	24,184,862	61.43%	1,815,454	2,902,584	1,593,778	4,496,362
2036	July 1, 2035	65,681,940	42,705,864	22,976,076	65.02%	1,910,473	3,037,039	1,641,591	4,678,630
2037	July 1, 2036	68,849,274	47,213,018	21,636,256	68.57%	2,012,060	3,153,628	1,690,839	4,844,467
2038	July 1, 2037	72,213,766	52,071,851	20,141,915	72.11%	2,117,470	3,263,130	1,741,564	5,004,694
2039	July 1, 2038	75,750,219	57,307,436	18,442,783	75.65%	2,227,128	3,441,438	1,793,811	5,235,249
2040	July 1, 2039	79,462,667	62,946,576	16,516,091	79.22%	2,346,845	3,611,576	1,847,625	5,459,201
2041	July 1, 2040	83,356,753	69,017,916	14,338,837	82.80%	2,474,398	3,795,621	1,903,054	5,698,675
2042	July 1, 2041	87,431,291	75,552,072	11,879,219	86.41%	2,609,076	3,984,959	1,960,146	5,945,105
2043	July 1, 2042	91,729,443	82,581,762	9,147,681	90.03%	2,751,751	4,212,766	2,018,950	6,231,716
2044	July 1, 2043	96,261,187	90,141,948	6,119,239	93.64%	2,904,907	4,413,014	2,079,519	6,492,533
2045	July 1, 2044	101,034,570	98,269,992	2,764,578	97.26%	3,066,545	4,635,629	2,141,905	6,777,534
2046	July 1, 2045	105,990,918	107,005,813	(1,014,895)	100.96%	3,236,210	4,922,903	(1,014,895)	3,908,008
2047	July 1, 2046	111,317,010	113,171,008	(1,853,998)	101.67%	3,416,299	5,078,909	(1,853,998)	3,224,911
2048	July 1, 2047	116,974,192	118,910,785	(1,936,593)	101.66%	3,606,382	5,299,593	(1,936,593)	3,363,000
2049	July 1, 2048	122,952,203	124,953,106	(2,000,903)	101.63%	3,802,767	5,544,571	(2,000,903)	3,543,668

EXHIBIT D

PROJECTED CASH FLOWS (OPEN GROUP)

Town of Hanover

OPEB Projection of Funding Annual Service Cost and Impact on Unfunded Obligation

Total Medical, Dental & Life Insurance - Funding Annual Service Cost - 4.75% discount rate

Measurement Date	I. Total OPEB Liability	II. Service Cost	III. Employer Share of Premiums / Claims including "implicit cost"	IV. Funding Service Cost beyond claims	V. Total Funding Costs [III. + IV.]	VI. Present Value at 3.00% of Employer Share of Premiums / Claims including "implicit cost"	VII. Present Value at 3.00% of Funding Service Cost beyond claims	VIII. Present Value at 3.00% of Total Funding Costs [VI. + VII.]	IX. Fiduciary Net Position at Beginning of year	X. Net OPEB Liability (Asset) [I. - IX.]	XI. Present Value at 3.00% of Net OPEB Liability (Asset)
July 1, 2017	35,795,255	1,141,235	1,084,038	57,197	1,141,235	1,084,038	57,197	1,141,235	1,689,284	34,105,971	34,105,971
July 1, 2018	37,616,691	1,247,351	1,158,250	89,101	1,247,351	1,124,515	86,506	1,211,021	1,826,722	35,789,969	34,747,543
July 1, 2019	39,459,345	1,333,347	1,209,333	124,014	1,333,347	1,139,912	116,895	1,256,807	2,002,592	37,456,753	35,306,582
July 1, 2020	41,468,386	1,421,592	1,284,877	136,715	1,421,592	1,175,844	125,114	1,300,958	2,221,729	39,246,657	35,916,251
July 1, 2021	43,588,300	1,510,789	1,358,040	152,749	1,510,789	1,206,601	135,716	1,342,317	2,463,976	41,124,324	36,538,429
July 1, 2022	45,842,355	1,598,550	1,413,669	184,881	1,598,550	1,219,443	159,480	1,378,923	2,733,764	43,108,591	37,185,849
July 1, 2023	48,209,034	1,688,641	1,497,257	191,384	1,688,641	1,253,929	160,281	1,414,210	3,048,499	45,160,535	37,821,237
July 1, 2024	50,665,424	1,774,623	1,602,662	171,961	1,774,623	1,303,111	139,820	1,442,931	3,384,687	47,280,737	38,443,566
July 1, 2025	53,251,345	1,874,581	1,689,661	184,920	1,874,581	1,333,834	145,978	1,479,812	3,717,421	49,533,924	39,102,537
July 1, 2026	55,952,397	1,975,859	1,796,498	179,361	1,975,859	1,376,866	137,465	1,514,331	4,078,918	51,873,479	39,756,702
July 1, 2027	58,769,326	2,074,249	1,904,437	169,812	2,074,249	1,417,080	126,356	1,543,436	4,452,028	54,317,298	40,417,171
July 1, 2028	61,714,515	2,181,453	2,016,127	165,326	2,181,453	1,456,493	119,435	1,575,928	4,833,311	56,881,204	41,092,192
July 1, 2029	64,753,807	2,294,044	2,159,895	134,149	2,294,044	1,514,907	94,089	1,608,996	5,228,219	59,525,588	41,750,050
July 1, 2030	67,912,167	2,414,249	2,301,002	113,247	2,414,249	1,566,870	77,116	1,643,986	5,610,708	62,301,459	42,424,262
July 1, 2031	71,158,705	2,538,559	2,478,213	60,346	2,538,559	1,638,391	39,896	1,678,287	5,990,464	65,168,241	43,083,884
July 1, 2032	74,512,651	2,673,312	2,644,591	28,721	2,673,312	1,697,462	18,435	1,715,897	6,335,357	68,177,294	43,760,411
July 1, 2033	78,031,509	2,815,178	2,779,892	35,286	2,815,178	1,732,337	21,989	1,754,326	6,665,007	71,366,502	44,473,245
July 1, 2034	81,723,346	2,960,734	2,902,584	58,150	2,960,734	1,756,111	35,182	1,791,293	7,016,881	74,706,465	45,198,640
July 1, 2035	85,602,020	3,116,313	3,037,039	79,274	3,116,313	1,783,940	46,565	1,830,505	7,408,333	78,193,687	45,930,550
July 1, 2036	89,735,760	3,282,600	3,153,628	128,972	3,282,600	1,798,470	73,551	1,872,021	7,839,503	81,896,257	46,704,291
July 1, 2037	94,116,266	3,455,051	3,263,130	191,921	3,455,051	1,806,716	106,262	1,912,978	8,340,851	85,775,415	47,491,768
July 1, 2038	98,730,542	3,634,964	3,441,438	193,526	3,634,964	1,849,943	104,030	1,953,973	8,928,962	89,801,580	48,272,774
July 1, 2039	103,577,389	3,831,220	3,611,576	219,644	3,831,220	1,884,854	114,631	1,999,485	9,546,614	94,030,775	49,073,956
July 1, 2040	108,670,557	4,040,298	3,795,621	244,677	4,040,298	1,923,210	123,976	2,047,186	10,219,722	98,450,835	49,884,226
July 1, 2041	114,001,209	4,261,166	3,984,959	276,207	4,261,166	1,960,336	135,876	2,096,212	10,949,836	103,051,373	50,694,447
July 1, 2042	119,651,290	4,495,074	4,212,766	282,308	4,495,074	2,012,041	134,832	2,146,873	11,746,160	107,905,130	51,536,091
July 1, 2043	125,613,364	4,746,314	4,413,014	333,300	4,746,314	2,046,291	154,549	2,200,840	12,586,411	113,026,953	52,410,002
July 1, 2044	131,905,290	5,011,602	4,635,629	375,973	5,011,602	2,086,909	169,259	2,256,168	13,517,566	118,387,724	53,296,858
July 1, 2045	138,457,331	5,290,158	4,922,903	367,255	5,290,158	2,151,686	160,519	2,312,205	14,535,623	123,921,708	54,163,298
July 1, 2046	145,488,264	5,585,992	5,078,909	507,083	5,585,992	2,155,217	215,179	2,370,396	15,593,320	129,894,944	55,120,447
July 1, 2047	152,951,757	5,898,582	5,299,593	598,989	5,898,582	2,183,362	246,776	2,430,138	16,841,086	136,110,671	56,075,794

EXHIBIT D

PROJECTED CASH FLOWS (OPEN GROUP)

Total Medical & Life Insurance - Funding					
Measurement Date	Number of Retirees, Spouses & Surviving Spouses	Total OPEB Liability	Present Value at 3.00% of Total OPEB Liability	Employer Share of Premiums / Claims including "implicit cost"	Present Value at 3.00% of Employer Share of Premiums / Claims including "implicit cost"
July 1, 2017	337	35,795,255	35,795,255	1,084,038	1,084,038
July 1, 2018	359	37,616,691	36,521,059	1,158,250	1,124,515
July 1, 2019	365	39,459,345	37,194,217	1,209,333	1,139,912
July 1, 2020	370	41,468,386	37,949,448	1,284,877	1,175,844
July 1, 2021	374	43,588,300	38,727,640	1,358,040	1,206,601
July 1, 2022	377	45,842,355	39,544,018	1,413,669	1,219,443
July 1, 2023	379	48,209,034	40,374,307	1,497,257	1,253,929
July 1, 2024	385	50,665,424	41,195,626	1,602,662	1,303,111
July 1, 2025	389	53,251,345	42,037,103	1,689,661	1,333,834
July 1, 2026	392	55,952,397	42,882,853	1,796,498	1,376,866
July 1, 2027	395	58,769,326	43,729,898	1,904,437	1,417,080
July 1, 2028	398	61,714,515	44,583,879	2,016,127	1,456,493
July 1, 2029	402	64,753,807	45,417,017	2,159,895	1,514,907
July 1, 2030	406	67,912,167	46,244,881	2,301,002	1,566,870
July 1, 2031	410	71,158,705	47,044,287	2,478,213	1,638,391
July 1, 2032	413	74,512,651	47,826,835	2,644,591	1,697,462
July 1, 2033	416	78,031,509	48,626,657	2,779,892	1,732,337
July 1, 2034	418	81,723,346	49,443,968	2,902,584	1,756,111
July 1, 2035	419	85,602,020	50,282,165	3,037,039	1,783,940
July 1, 2036	420	89,735,760	51,175,050	3,153,628	1,798,470
July 1, 2037	420	94,116,266	52,109,895	3,263,130	1,806,716
July 1, 2038	421	98,730,542	53,072,531	3,441,438	1,849,943
July 1, 2039	422	103,577,389	54,056,263	3,611,576	1,884,854
July 1, 2040	424	108,670,557	55,062,475	3,795,621	1,923,210
July 1, 2041	426	114,001,209	56,081,041	3,984,959	1,960,336
July 1, 2042	429	119,651,290	57,146,122	4,212,766	2,012,041
July 1, 2043	432	125,613,364	58,246,255	4,413,014	2,046,291
July 1, 2044	435	131,905,290	59,382,318	4,635,629	2,086,909
July 1, 2045	438	138,457,331	60,516,481	4,922,903	2,151,686
July 1, 2046	441	145,488,264	61,737,416	5,078,909	2,155,217
July 1, 2047	443	152,951,757	63,014,099	5,299,593	2,183,362
July 1, 2048	445	160,843,950	64,335,512	5,544,571	2,217,757
July 1, 2049	447	169,210,750	65,710,801	5,789,956	2,248,454
July 1, 2050	450	178,068,145	67,136,364	6,094,605	2,297,826
July 1, 2051	452	187,358,956	68,581,790	6,457,122	2,363,597
July 1, 2052	454	197,071,993	70,036,114	6,831,598	2,427,837
July 1, 2053	456	207,415,935	71,565,223	7,136,314	2,462,260
July 1, 2054	458	218,328,814	73,136,427	7,490,670	2,509,247
July 1, 2055	460	229,827,939	74,746,056	7,852,674	2,553,895
July 1, 2056	461	242,151,756	76,460,276	8,208,063	2,591,725

EXHIBIT E**GLOSSARY**

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

Actuarially Determined Contribution - Amount of funding required annually to fully fund plan benefits. Determined by the actuary using a consistent methodology.

Amortization - Allows the recognition of liability over a fixed period of time.

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

Deferred Inflows/Outflows of Resources - Amounts arising from experience gains and losses that have not been recognized into the OPEB Expense, but will be recognized in the future.

Discount Rate - The interest rate used to calculate the present value of future cash flows. Under GASB 75, the rate should be the expected long term rate of return on investments for a plan that is being fully funded, the 20 year municipal bond index for a pay-as-you-go plan, and a blend of the two rates for a plan that is being partially funded.

Fiduciary Net Position - The value of cash, investments, other assets and property belonging to an OPEB trust.

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."

Implicit Subsidy - The liability that arises because retirees who are not eligible for Medicare are charged the same premium as active employees even though their actual medical costs are higher on average.

Irrevocable Contribution - The transfer of assets to a qualified trust in which assets may only be withdrawn for the purpose of providing retiree other post employment benefits.

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

Net OPEB Liability (NOL) - Total OPEB Liability less the Fiduciary Net Position.

Other Post Employment Benefits (OPEB) - Benefits that an employee will begin to receive at the start of retirement. This does not include pension benefits paid to the retired employee.

OPEB Trust - An entity which holds assets for the sole purpose of funding OPEB. All contributions and earning within this entity must be irrevocable and protected from creditors.

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.

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

Total OPEB Liability (TOL) - That portion, as determined by the Individual Entry Age Normal Actuarial Cost Method, of the Actuarial Present Value of benefits and expenses which are not provided for by future Service Costs.