

**POST RETIREMENT BENEFITS ACTUARIAL VALUATION
OF
THE COUNTY OF PLYMOUTH**

June 30, 2017 Actuarial Valuation Report

GASB 74 & 75

TABLE OF CONTENTS

	<u>Page</u>
REPORT SUMMARY	
Introduction	1
GASB Statements No. 74 & No. 75	2
EXHIBITS	
1 Medical Premiums	8
2 Membership Distribution	9
3 Summary of Plan Provisions	10
4 Actuarial Methods and Assumptions	11
CERTIFICATION	16

Introduction

This report presents the Governmental Accounting Standards Statements 74 & 75 based on the findings of an actuarial valuation as of July 1, 2016, of the Plymouth County OPEB Plan.

The actuarial valuation is based on:

- Plan Provisions as of July 1, 2016.
- Employee data provided by the County
- Asset provided by the County
- Actuarial assumptions approved by the Sherman Actuarial Services and the County

The valuation and forecast do not account for any subsequent changes in the plan.

GASB Statements No. 74 and No. 75

Effective for periods beginning after June 15, 2015, the Governmental Accounting Standards Board (GASB) requires the disclosure of Other Post Employment Benefits (OPEB) related liabilities for public employer financial statements in accordance with Statements 74 and 75. These statements, which amend GASB Statements No. 43 and No. 45, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

The statement requires the system to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position. The statement of fiduciary net position presents the following items as of the end of the plan’s reporting period, as applicable:

- Assets
- Deferred outflows of resources (consumption of net assets by the employers that is applicable to a future reporting period)
- Liabilities
- Deferred inflows of resources (acquisition of net assets by the employers that is applicable to a future reporting period)
- Fiduciary net position (Assets + Deferred outflows – Liabilities – Deferred inflows)

The system is considered a single employer OPEB plan since obligations exist for employees of one employer and plan assets can be used to pay the benefits of the employees the employer.

This report does not include all items required under GASB Statements No. 74 and No. 75. Rather, it provides all items required that are not readily available from other sources and investment reports prepared by the plan’s investment consultant.

Discount Rate

The discount rate, and all other actuarial assumptions, are the as those described in Exhibit 4. The discount rate was selected based on a projection of employer and employee contributions, benefit payments, expenses and the long term expected rate of return on trust assets.

Based on these laws and assumptions, the OPEBs plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

The County selected 7.0% as the long term expectation of investment returns and the resulting discount rate is also 7.0%.

Net Position Restricted for OPEB

The Net Position Restricted for OPEB Plan Benefits as of June 30, 2017 is \$350,593. The 2017 Annual Statement of the Financial Condition contains the values for previous years and the changes in Net Position Restricted for OPEB Plan Benefits. Investments are reported at fair value.

June 30, 2016 Net Position	51,372
Employer Contributions	1,594,674
Employee Contributions	0
Other Payments	0
Benefit Payments	(1,319,674)
Expenses	(281)
Investment Income	<u>24,502</u>
June 30, 2017 Net Position	350,593

OPEB Liability as of June 30, 2017

The following presents the changes in the OPEB liability during FYE 2017.

June 30, 2016 Liability	19,737,177
Service Cost	153,246
Interest on Liability and Service Cost	1,346,141
Change in Plan Provisions	0
Experience (Gain) and Loss	0
Change in Assumptions	0
Benefit Payments	(1,342,385)
Other	<u>0</u>
June 30, 2017 Liability	19,894,178

Net OPEB Liability as of June 30, 2017

The following presents the net OPEB liability of the system calculated using the discount rate of 7.0%, as well as what the system’s net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.0%) or 1-percentage-point higher (8.0%) than the current rate. The Plan Fiduciary Net Position as a percentage of the Total OPEB Liability is 1.8%.

	1% Decrease (6.0%)	Current Discount Rate (7.0%)	1% Increase (8.0%)
Total OPEB Liability	\$ 21,904,993	\$ 19,894,178	\$ 18,200,873
Plan Fiduciary Net Position	<u>\$ 350.593</u>	<u>\$ 350.593</u>	<u>\$ 350.593</u>
Net OPEB Liability	\$ 21,554,400	\$ 19,543,585	\$ 17,850,280

The following presents the net OPEB liability of the system calculated using the current trend rates, as well as what the system’s net OPEB liability would be if it were calculated using trend rates 1-percentage-point lower for all years or 1-percentage-point higher than the current rates.

	1% Decrease	Current Trend	1% Increase
Total OPEB Liability	\$ 18,749,453	\$ 19,894,178	\$ 21,328,769
Plan Fiduciary Net Position	<u>\$ 350.593</u>	<u>\$ 350.593</u>	<u>\$ 350.593</u>
Net OPEB Liability	\$ 18,398,860	\$ 19,543,585	\$ 20,978,176

OPEB Expense for FYE 2017

Service Cost	153,246
Interest	1,346,141
Difference in Experience - Amortization	0
Change in Assumptions - Amortization	0
Changes in Plan Provisions	0
Employee Contributions	0
Projected Earnings	(13,049)
Administration Expense	281
Other Changes in Fiduciary Net Position	0
Asset (Gain) / Loss Amortization	<u>(2,291)</u>
Total Expense	1,484,328

Schedules of Required Supplementary Information

	<u>2017</u>
Total OPEB Liability – Beginning	19,737,177
Total OPEB Liability – Ending (a)	19,894,178
Plan Fiduciary Net Position – Beginning	51,372
Plan Fiduciary Net Position – Ending (b)	350.593
Net OPEB Liability – Ending (a) – (b)	19,543,585
Plan Fiduciary Net Positions as a percentage of the Total OPEB Liability	1.8%
Covered-employee payroll	3,262,603
Net OPEB Liability as a percentage of Covered-employee Payroll	599.0%

Schedule of Net Position Restricted for OPEB Plan Benefits Amortization Recognition

Below is the schedule of amortization adjustments to the OPEB Expense for the coming years. A positive number indicates that the actual return was less than the expected return and will be added to the OPEB Expense.

Investment Return

<u>FYE</u>	<u>(Gain) / Loss</u>	<u>Period</u>	<u>Increase (Decrease) arising from (Gains) or Losses</u>				
			<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
2017	(11,453)	5	(2291)	(2291)	(2291)	(2291)	(2289)

Reconciliation of Net OPEB Liability for 2017

NOL Beginning of Year	19,685,805
OPEB Expense	1,484,328
Employer Contributions	(1,617,385)
Deferred Outflows	0
Deferred Inflows	(9,162)
Revenue	<u>0</u>
NOL End of Year	19,543,586

EXHIBITS

EXHIBIT 1 – MEDICAL PREMIUM

Monthly Premiums effective July 1, 2016

Health and dental benefits are available to employees and retirees through a number of plans. The County obtains health insurance coverage through the Mayflower Municipal Health Group, which purchases a variety of fully insured plans, with the rates provided to each participating municipality apparently based in part on the municipality's demographic characteristics. The following are gross monthly rates per subscriber for plans in which current County employees and/or retirees are enrolled:

	<u>2014</u>	<u>2016</u>
Harvard Pilgrim (individual)	\$672	\$804
Harvard Pilgrim (family)	1,790	2,141
MEDEX	410	437
PPO Blue (individual)	901	1,057
PPO Blue (Family)	2,136	2,506
HMO Network Blue (Individual)	635	745
HMO Network Blue (Family)	1,693	1,986

Retirees contributed 25%.

EXHIBIT 2 – MEMBERSHIP DATA

Actives	64
Retirees and Beneficiaries	<u>228</u>
Total	292

EXHIBIT 3 – SUMMARY OF PLAN PROVISIONS:

Retirement Medical Insurance: Retirees pay a variable share of their post-retirement medical costs, depending on the health plan.

Life Insurance: Plymouth County contributes \$.45 per month for each retiree receiving \$5,000 basic life insurance.

Spousal Coverage: Current and future retirees may elect to include their spouses as part of their post-retirement benefits. There is lifetime spousal coverage for medical insurance.

Section 18 Coverage: The County has elected to adopt Section 18 under Chapter 32B of the General Laws of Massachusetts, which requires that an employee or retiree must participate in the Medicare program as the primary payer once one reaches age 65 and is Medicare eligible.

Retirement Eligibility: Age 55 with 10 years of service, or 20 years of service.

Ordinary Disability Eligibility: 10 years of service and under age 55.

Termination Eligibility: 10 years of service.

EXHIBIT 4 – ACTUARIAL METHODS AND ASSUMPTIONS:**All Groups**

Interest: Full Prefunding: 7.0%, net of investment expenses

Actuarial Cost Method: Entry Age Normal

Medical Care Inflation:

Year	Inflation Rate
2016	6.0%
2017	5.5%
2018	5.0%
2019+	4.5%

Participation: 95% of future retirees are assumed to participate in the retiree medical plan, 90% of future retirees elect dental coverage, and 95% of future retirees are expected to elect life insurance.

Marital status: 80% of male employees and 60% of female employees are assumed to have a covered spouse at retirement. Wives are assumed to be three years younger than their husbands.

Termination Benefit: 80% of employees are expected to elect medical coverage starting at age 65.

Medical Plan Costs: The estimated gross per capita incurred claim costs for all retirees and beneficiaries for 2016-17 at age 64 and 65 are \$16,003 and \$4,532, respectively. Medicare eligible retirees' per capita claims costs at age 65 is \$4,130.

It is assumed that future retirees participate in the same manner as current retirees. Employee cost sharing is based on current rates. The cost sharing varies by medical plan. Future cost sharing is based on the weighted average of the current cost sharing of retirees and beneficiaries.

Age-based Morbidity: Medical costs are adjusted to reflect expected cost increases related to age. The increase in the net costs assumed to be:

<u>Age</u>	<u>Annual Increase Retiree</u>
49 and below	2.6%
50-54	3.2%
55-59	3.4%
60-64	3.7%
65-69	3.2%
70-74	2.4%
75-79	1.8%
80 and over	0.0%

Current Employees: Current active employees who are assumed to retire prior to age 65 are valued with a weighted-average current cost. This weighted-average current cost is based on the medical plan coverage of current retirees under age 65.

At age 65, active participants are assumed to participate in the same manner as current retirees over age 65 in Medicare Supplemental plans.

Pre-Age 65 Retirees: Current retirees who are under age 65 are assumed to remain in their current medical plan until age 65.

Current active employees who are assumed to retire prior to age 65 are valued with a weighted-average premium. This weighted-average premium is based on the medical plan coverage of current retirees under age 65.

Post-Age 65 Retirees: Current retirees over age 65 remain in their current medical plan until death for purposes of measuring their contributions. It is assumed that future retirees are Medicare eligible. It is furthermore assumed that all future retirees over 65 will participate in the Medex plan with an employee cost share of 25%. Per capita costs were developed from the City developed monthly costs. Amounts to be received in the future for the Medicare Part D Retiree Drug Subsidy are not reflected in the valuation.

The below tables represent values of the assumed annual rates of withdrawal, disability, death and service retirement:

Group 1 and 2

Age	Disability	Service Retirement				Years of Service	Rates of Withdrawal
		Male	Female	Male Post 2012 Hire	Female Post 2012 Hire		
25	0.0001					0	0.2080
30	0.0002					5	0.1020
35	0.0003					10	0.0650
40	0.0007					15	0.0417
45	0.0010					20	0.0400
50	0.0013	0.0360	0.1019			25	0.0400
55	0.0016	0.0477	0.0469			30+	0.0000
60	0.0018	0.1057	0.0774	0.0477	0.0469		
62	0.0019	0.1473	0.1168	0.0632	0.0509		
65	0.0016	0.2615	0.1939	0.1057	0.0774		
69	0.0014	0.2500	0.2000	0.2136	0.1708		

Group 4

Age	Disability	Service Retirements		Years of Service	Rates of Withdrawal
		Pre 2012	Post 2012		
25	0.0005			0 - 1	0.150
30	0.0010			2 - 3	0.125
35	0.0020			4 - 5	0.100
40	0.0025			6 - 7	0.075
45	0.0040		.0443	8 - 9	0.050
50	0.0076		.0382	10 - 19	0.060
55	0.0076		.1110	20+	0.000
60	0.0065		.1871		
62	0.0065		.2176		
65	0.0000		1.0000		

Mortality: It is assumed that both pre-retirement mortality and beneficiary mortality is represented by the RP-2014 Blue Collar Mortality with Scale MP-2015, fully generational. Mortality for retired members for Group 1 and 2 is represented by the RP-2014 Blue Collar Mortality Table set forward five years for males and 3 years for females, fully generational. Mortality for retired members for Group 4 is represented by the RP-2014 Blue Collar Mortality Table set forward three years for males, and six years for females, fully generational. Mortality for disabled members for Group 1 and 2 is

represented by the RP-2000 Mortality Table set forward six years. Mortality for disabled members for Group 4 is represented by the RP-2000 Mortality Table set forward two years. Generational adjusting is based on Scale MP-2015.

CERTIFICATION:

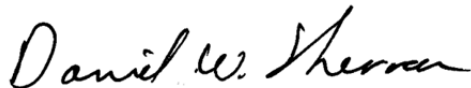
This report fairly represents the actuarial position of the Plymouth County OPEB Plan as of June 30, 2017, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

The funded status measure is appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations. The funded status measure is appropriate for assessing the need for or the amount of future contributions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

The report was prepared under the supervision of Daniel Sherman, an Associate of the Society of Actuaries and a Member of the American Academy of Actuaries, who takes responsibility for the overall appropriateness of the analysis, assumptions and results. Daniel Sherman is deemed to meet the General Qualification Standard and the basic education and experience requirement in the OPEB area. Based on over thirty years of performing valuations of similar complexity, Mr. Sherman is qualified by experience. Daniel Sherman has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sherman Actuarial Services, LLC



Daniel W. Sherman, ASA, MAAA

January, 2018