POST RETIREMENT BENEFITS ACTUARIAL VALUATION OF THE COUNTY OF PLYMOUTH

June 30, 2018 Actuarial Valuation Report

GASB 74 & 75

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Introduction

This report presents the Governmental Accounting Standards Statements 74 & 75 based on the findings of an actuarial valuation as of July 1, 2018, of the Plymouth County OPEB Plan.

The actuarial valuation is based on:

- Plan Provisions as of July 1, 2018.
- 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, 2018 is \$662,944. The 2018 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, 2017 Net Position	350,593
Employer Contributions	1,449,223
Employee Contributions	0
Other Payments	0
Benefit Payments	(1,174,223)
Expenses	(942)
Investment Income	38,293
June 30, 2018 Net Position	662,944

OPEB Liability as of June 30, 2018

The following presents the changes in the OPEB liability during FYE 2018.

June 30, 2017 Liability	19,894,178
Service Cost	165,945
Interest on Liability and Service Cost	1,363,509
Change in Plan Provisions	0
Experience (Gain) and Loss	(3,283,719)
Change in Assumptions	0
Benefit Payments	(1,182,865)
Other	$\overline{0}$
June 30, 2018 Liability	16,957,048

Net OPEB Liability as of June 30, 2018

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 3.9%.

	1% Decrease	Current Discount	1% Increase
	(6.0%)	Rate (7.0%)	(8.0%)
Total OPEB Liability	\$ 18,735,473	\$ 16,957,048	\$ 15,472,247
Plan Fiduciary Net Position	\$ 662,944 \$ 18,072,530	\$ 662,944 \$ 10,542,585	\$ 662,944 \$ 14,809,303
Net OPEB Liability	\$ 18,072,529	\$ 19,543,585	\$ 1 4 ,009,303

Total Expense

Plymouth FYE2018 GASB7475

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.

Total OPEB Liability Plan Fiduciary Net Position Net OPEB Liability	1% Decrease \$ 15,902,982 \$ 662,944 \$ 15,240,038	Current Trend \$ 16,957,048 \$ 662,944 \$ 16,294,104	1% Increase \$ 18,200,004 \$ 662,944 \$ 17,537,060
OPEB Expense for FYE 2018			
Service Cost		165,945	
Interest		1,363,509	

(208,139)

	100,5 15
Interest	1,363,509
Difference in Experience - Amortization	(1,701,409)
Change in Assumptions - Amortization	0
Changes in Plan Provisions	0
Employee Contributions	0
Projected Earnings	(33,971)
Administration Expense	942
Other Changes in Fiduciary Net Position	0
Asset (Gain) / Loss Amortization	(3,155)

Schedules of Required Supplementary Information

<u>2018</u>
19,737,177
16,957,048
350,593
662,944
16,294,104
3.9%
3,736,092
436.1%

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

			Increase	(Decrease) a	arising from (Gains) or Los	ses
FYE	(Gain) / Loss	<u>Period</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
2018	(4,321)	5	(864)	(864)	(864)	(864)	(865)
2017	(11,453)	5	(2291)	(2291)	(2291)	(2289)	

Experience

			Increase (Dec	rease) arising	trom (Gains)	or Losses
FYE	(Gain) / Loss	<u>Period</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	
	(3,283,719)		(1,701,409)	(1,582,310)	0	

Reconciliation of Net OPEB Liability for 2018

NOL Beginning of Year	19,543,585
OPEB Expense	(208,139)
Employer Contributions	(1,457,865)
Deferred Outflows	0
Deferred Inflows	(1,583,476)
Revenue	$\underline{0}$
NOL End of Year	16,294,105

EXHIBITS

EXHIBIT 1 - MEDICAL PREMIUM

Monthly Premiums effective July 1, 2018

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>2018</u>	<u>2016</u>
Harvard Pilgrim (individual)	\$997	\$804
Harvard Pilgrim (family)	2,655	2,141
MEDEX	374	437
PPO Blue (individual)	1,307	1,057
PPO Blue (Family)	3,096	2,506
HMO Network Blue (Individual)	921	745
HMO Network Blue (Family)	2,454	1,986

Retirees contributed 25% of the cost of premiums.

EXHIBIT 2 - MEMBERSHIP DATA

Actives	74
Retirees and Beneficiaries	<u>220</u>
Total	294

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

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 2018-19 at age 64 and 65 are \$17,961 and \$3,745, respectively. Medicare eligible retirees' per capita claims

costs at age 65 is \$3,316.

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:

	Annual Increase
<u>Age</u>	Retiree
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

		Service Retirement			
Age	Disability	Male	Female	Male Post 2012 Hire	Female Post 2012 Hire
25	0.0001			2012 HHC	ZOIZ IIII C
30	0.0002				
35	0.0003				
40	0.0007				
45	0.0010				
50	0.0013	0.0360	0.1019		
55	0.0016	0.0477	0.0469		
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

Years of Service	Rates of Withdrawal
0	0.2080
5	0.1020
10	0.0650
15	0.0417
20	0.0400
25	0.0400
30+	0.0000

Group 4

		Service Retirements		
Age	Disability	Pre 2012	Post 2012	
25	0.0005			
30	0.0010			
35	0.0020			
40	0.0025			
45	0.0040	.0443		
50	0.0076	.0382	0.0191	
55	0.0076	.1110	0.0370	
60	0.0065	.1871	0.0936	
62	0.0065	.2176	0.1741	
65	0.0000	1.0000	0.2500	

Years of	Rates of
Service	Withdrawal
0 - 1	0.150
2 - 3	0.125
4 - 5	0.100
6-7	0.075
8-9	0.050
10 - 19	0.060
20+	0.000

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, 2018, 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. Therman

Daniel W. Sherman, ASA, MAAA

November, 2018

JUNE 30, 2018 ACTUARIAL VALUATION OF THE POST RETIREMENT BENEFITS PLAN OF PLYMOUTH COUNTY FOR FUNDING PURPOSES

November 2018

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SECTION I - OVERVIEW

Plymouth County has engaged Sherman Actuarial Services, LLC to prepare an actuarial valuation of

their post-retirement benefits program as of June 30, 2018. These valuations were performed using

employee census data, enrollment data, claims, premiums, participant contributions and plan

provision information provided by personnel of Plymouth County. Sherman Actuarial Services did

not audit these data, although they were reviewed for reasonability. The results of the valuation are

dependent on the accuracy of the data.

The purposes of the valuation are to analyze the current funded position of the County's post-

retirement benefits program and determine the level of contributions necessary to assure sound

funding and provide reporting and disclosure information for financial statements.

To measure the liabilities, we have used a discount rate of 7%. The plan is to continue to pay the

current costs of retirees and contribute at least \$250,000 each year for the near future.

Section II provides a summary of the principal valuation results. Section IV provides a projection of

funding amounts.

While the actuary believes that the assumptions are reasonable for financial reporting purposes, it

should be understood that there is a range of assumptions that could be deemed reasonable that would

yield different results. Moreover, while the actuary considers the assumption set to be reasonable

based on prior plan experience, it should be understood that future plan experience may differ

considerably from what has been assumed.

Plymouth County Post-Retirement Benefits Program June 30, 2018 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 pension area. Based on over twenty years of performing FAS 106 valuations of similar complexity, Mr. Sherman is qualified by experience in retiree medical valuation. Daniel Sherman has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion

I am available to answer questions about this report.

Respectfully Submitted,

contained herein.

SHERMAN ACTUARIAL SERVICES, LLC

Daniel W. Therman

Daniel Sharman ASA MAAA

November 6, 2018

Date

Daniel Sherman, ASA, MAAA

CEO

SECTION II - REQUIRED INFORMATION

	F	full Prefunding 7.00%		Full Prefunding 7.00%
a) Actuarial valuation date	J	une 30, 2016	J	Tune 30, 2018
b) Actuarial Value of Assets	\$	51,372	\$	662,944
c) Actuarial Accrued Liability				
Active participants	\$	5,183,862	\$	4,575,713
Retired participants	_	14,677,867		12,442,701
Total AAL	\$	19,861,729	\$	17,018,414
d) Unfunded Actuarial Liability "UAL" [c-b]	\$	19,810,357	\$	16,355,470
e) Funded ratio [b/c]		0.3%		3.9%
f) Annual covered payroll	\$	3,152,273		3,736,092
g) UAL as percentage of covered payroll		628.4%		437.8%
h) Normal Cost for fiscal year	\$	148,870	\$	158,578
i) Amortization of UAL for fiscal year		715,919		1,196,220
j) Interest to the end of the fiscal year		0		0
k) Annual Required Contribution "ARC"				
for fiscal year [h + i + j]	\$	864,789	\$	1,354,798
l) Premium payments	\$	1,342,385	\$	1,342,385
m) Increase in annual cost to fund the Plan [k - 1]		33,309	\$	12,413

17-year amortization, increasing 4.0% per year for Full Prefunding

SECTION III - MEDICAL PREMIUMS

Monthly Premiums

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>2018</u>	<u>2016</u>
Harvard Pilgrim (individual)	\$997	\$804
Harvard Pilgrim (family)	2,655	2,141
MEDEX	374	437
PPO Blue (individual)	1,307	1,057
PPO Blue (Family)	3,096	2,506
HMO Network Blue (Individual)	921	745
HMO Network Blue (Family)	2,454	1,986

Retirees contributed 25%.

SECTION IV - SCHEDULE OF EMPLOYER CONTRIBUTIONS

Amortization of the unfunded actuarial liability is to be based on a schedule that extends no longer

than 30 years. The contribution towards the amortization of the unfunded actuarial liability may be

made in level payments or in payments increasing at the same rate as salary increases. There is no

requirement to actually fund the Annual Required Contribution, however.

In the amortization schedules shown on the following pages, the amortization of the unfunded

accrued liability is over a fixed number of years. The normal cost is expected to increase at the

same rate as the assumed ultimate health care trend rate. The contributions were computed

assuming that the contribution is paid at the end of the fiscal year. Projected benefit

payments/employer contributions reflect only the benefit for those individuals now employed or

retired, not any future entrants.

GASB stipulates that valuations must be performed at least biennially.

Plymouth County Post-Retirement Benefits Program June 30, 2018

SECTION IV - SCHEDULE OF EMPLOYER CONTRIBUTIONS

Conventional Schedule

Fiscal Year		Amortization		
Ending In	Normal Cost	<u>of UAL</u>	<u>ARC</u>	Pay-as-You-Go
2018	158,578	1,196,220	1,354,798	1,152,906
2019	165,714	1,244,069	1,409,783	1,182,865
2020	173,171	1,293,832	1,467,003	1,213,601
2021	180,964	1,345,585	1,526,549	1,242,119
2022	189,107	1,399,408	1,588,515	1,266,742
2023	197,617	1,455,384	1,653,001	1,296,344
2024	206,510	1,513,599	1,720,109	1,347,500
2025	215,803	1,574,143	1,789,946	1,396,382
2026	225,514	1,637,109	1,862,623	1,401,499
2027	235,662	1,702,593	1,938,255	1,376,976
2028	246,267	1,770,697	2,016,964	1,370,700
2029	257,349	1,841,525	2,098,874	1,362,244
2030	268,930	1,915,186	2,184,116	1,353,841
2031	281,032	1,991,793	2,272,825	1,345,489
2032	293,678	2,071,465	2,365,143	1,337,189
2033	306,894	2,154,324	2,461,218	1,328,941
2034	320,704	2,240,497	2,561,201	1,320,743
2035	335,136	-	335,136	1,312,595
2036	350,217	-	350,217	1,304,498
2037	365,977	-	365,977	1,296,451
2038	382,446	-	382,446	1,288,454
2039	399,656	-	399,656	1,280,506
2040	417,641	-	417,641	1,272,606
2041	436,435	-	436,435	1,264,756
2042	456,075	-	456,075	1,256,954
2043	476,598	-	476,598	1,249,200
2044	498,045	-	498,045	1,241,494
2045	520,457	-	520,457	1,233,836

^{*} Assumes payment is made at the end of the fiscal year.

SECTION IV - SCHEDULE OF EMPLOYER CONTRIBUTIONS

Special Schedule

Annual Fiscal Year Amortization Recommended **Ending In** Normal Cost Contribution of UAL Difference Pay-as-You-Go 2018 158,578 1,269,328 1,427,906 1,152,906 275,000 2019 165,714 1,292,151 1,457,865 1,182,865 275,000 2020 173,171 1,315,430 1,488,601 1,213,601 275,000 2021 180,964 1,336,155 1,517,119 1,242,119 275,000 2022 189,107 1,352,635 1,541,742 1,266,742 275,000 2023 197,617 1,373,727 1,571,344 1,296,344 275,000 2024 206,510 1,140,990 1,347,500 1,347,500 2025 215,803 1,180,579 1,396,382 1,396,382 2026 225,514 1,175,985 1,401,499 1,401,499 2027 235,662 1,141,314 1,376,976 1,376,976 2028 246,267 1,124,433 1,370,700 1,370,700 2029 257,349 1,604,895 1,862,244 1,362,244 500,000 2030 268,930 1,607,411 1,876,341 1,353,841 522,500 2031 281,032 1,610,470 1,891,502 1,345,489 546,013 2032 293,678 1,614,094 1,907,772 1,337,189 570,583 2033 306,894 1,618,306 1,925,200 1,328,941 596,259 2034 320,704 1,623,130 1,943,834 1,320,743 623,091 2035 335,136 1,628,589 1,963,725 1,312,595 651,130 2036 350,217 1,634,712 1,984,929 1,304,498 680,431 2037 365,977 1,641,524 2,007,501 1,296,451 711,050 2038 382,446 2,031,501 1,649,055 1,288,454 743,048 2039 399,656 1,657,334 2,056,990 1,280,506 776,485 2040 417,641 1,666,392 2,084,033 1,272,606 811,427 2041 436,435 1,676,262 2,112,697 1,264,756 847,941 2042 456,075 1,686,977 2,143,052 1,256,954 886,098 2043 476,598 1,287,453 1,764,051 1,249,200 514,851 2044 498,045 743,449 1,241,494 1,241,494 2045 520,457 520,457 1,233,836

^{*} Assumes payment is made at the end of the fiscal year.

SCHEDULE A - ACTUARIAL ASSUMPTIONS AND METHODS

PLYMOUTH COUNTY, ALL GROUPS

Interest: Full Prefunding: 7.00% per year, net of investment expenses.

Actuarial Cost Method: Projected Unit Credit. Benefits are attributed ratably to service

from date of hire until full eligibility date. Full eligibility date is

assumed to be first eligibility for retiree medical benefits.

Healthcare Cost Trend Rate:

 Year
 Inflation Rate

 2018
 5.0%

 2019 & After
 4.5%

Amortization Period: 17-year level percent of pay assuming 4.0% aggregate annual

payroll growth, closed basis.

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.

SCHEDULE A - ACTUARIAL ASSUMPTIONS AND METHODS

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.

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 2018-19 at age 64 and 65 are \$17,961 and \$3,745, respectively. Medicare eligible retirees' per capita claims costs at age 65 is \$3,316.

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.

SCHEDULE A - ACTUARIAL ASSUMPTIONS AND METHODS

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

Groups 1 and 2

		Service Retirement			
Age	Disability	Male	Female	Male Post 2012 Hire	Female Post 2012 Hire
25	0.0001				
30	0.0002				
35	0.0003				
40	0.0007				
45	0.0010				
50	0.0013	0.0360	0.1019		
55	0.0016	0.0477	0.0469		
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

Years of Service	Rates of Withdrawal
0	0.2800
5	0.1020
10	0.0650
15	0.0417
20	0.0400
25	0.0400
30+	0.0000

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 disabled members for Group 1 and 2 is represented by the RP-2000 Mortality Table set forward six years. Generational adjusting is based on Scale MP-2015.

SCHEDULE B - SUMMARY OF PROGRAM 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.

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SCHEDULE C - CONSIDERATIONS OF HEALTH CARE REFORM

Early Retiree Reinsurance Program ("ERRP") - Effective June 1, 2010: Due to the short-term

nature of the payments expected to be received under this program, we do not reflect this program

in long-term GASB 45 liabilities.

Removal of Lifetime Maximum: The elimination of the lifetime maximums would have no

impact on the retiree health plan obligations since, as far as we are aware, the plan has no lifetime

maximums.

Medicare Advantage Plans - Effective January 1, 2011: The law provides for reductions to the

amounts that would be provided to Medicare Advantage plans starting in 2011. Since the County

offers these plans to some subscribers, we measured this impact. For people in Medicare

Advantage Plans, we assume a higher healthcare trend rate for 2011, 12%, as opposed to the 8%

rate that we assume for other plans.

Expansion of Child Coverage to Age 26: Since few retirees cover children on retiree health

plans, this provision will likely have a relatively small effect on the gross benefit cost. We have

reflected an estimate of the amount of additional cost by assuming a higher healthcare trend rate.

Medicare Part D Subsidy - Shrinking Medicare Prescription Drug "Donut Hole"- Starting

January 1, 2011: RDS payments are not reflected as on ongoing offsetting item in GASB 45

valuations, and so no direct impact is reflected. RDS actuarial equivalence testing does not reflect

the new donut hole shrinking Part D benefits. Thus, the changes to Medicare Part D have no

impact on the calculations.

Excise Tax on High-Cost Employer Health Plans (aka Cadillac Tax) - Effective January 1,

2021: There is considerable uncertainty about how the tax would be applied, and considerable

latitude in grouping of participants for tax purposes. We have estimated the impact and included

the cost in the costs and liabilities.

Other: We have not identified any other specific provision of health care reform that would be

expected to have a significant impact on the measured obligation. As additional guidance on the

legislation is issued, we will continue to monitor any potential impacts.

Plymouth County Post-Retirement Benefits Program

SCHEDULE D - GLOSSARY OF TERMS

Actuarial Accrued Liability

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of OPEB benefits and expenses which is not provided for by future Normal Costs and therefore is the value of benefits already earned.

Actuarial assumptions

Assumptions as to the occurrence of future events affecting OPEB costs, such as: mortality, withdrawal, disablement and retirement; changes in compensation and Government provided OPEB benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; characteristics of future entrants for Open Group Actuarial Cost Methods; and other relevant items.

Actuarial cost method

A procedure for determining the Actuarial Present Value of OPEB benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.

Actuarial experience gain or loss

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

Amortization (of unfunded actuarial accrued liability)

That portion of the OPEB plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability or the Unfunded Frozen Actuarial Accrued Liability.

Annual OPEB cost

An accrual-basis measure of the periodic cost of an employer's participation in a defined benefit OPEB plan.

Annual recommended contributions of the employer (ARC)

The employer's periodic expense to a defined benefit OPEB plan, calculated in accordance with the parameters.

Closed amortization period (closed basis)

A specific number of years that is counted from one date and, therefore, declines to zero with the passage of time. For example, if the amortization period initially is thirty years on a closed basis, twenty-nine years remain after the first year, twenty-eight years after the second year, and so forth. In contrast, an open amortization period (open basis) is one that begins again or is recalculated at each actuarial valuation date. Within a maximum number of years specified by law or policy (for example, thirty years), the period may increase, decrease, or remain stable.

Covered payroll

Annual compensation paid to active employees covered by an OPEB plan. If employees also are covered by a pension plan, the covered payroll should include all elements included in compensation on which contributions to the pension plan are based. For example, if pension contributions are calculated on base pay including overtime, covered payroll includes overtime compensation.

Defined benefit OPEB plan

An OPEB plan having terms that specify the benefits to be provided at or after separation from employment. The benefits may be specified in dollars (for example, a flat dollar payment or an amount based on one or more factors such as age, years of service, and compensation), or as a type or level of coverage (for example, prescription drugs or a percentage of healthcare insurance premiums).

Funded ratio

The actuarial value of assets expressed as a percentage of the actuarial accrued liability.

Plymouth County Post-Retirement Benefits Program June 30, 2018

SCHEDULE D - GLOSSARY OF TERMS

Funding policy

The program for the amounts and timing of contributions to be made by plan members, employer(s), and other contributing entities (for example, state government contributions to a local government plan) to provide the benefits specified by an OPEB plan.

Healthcare cost trend rate

The rate of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.

Investment return assumption (discount rate)

The rate used to adjust a series of future payments to reflect the time value of money.

Level dollar amortization method

The amount to be amortized is divided into equal dollar amounts to be paid over a given number of years; part of each payment is interest and part is principal (similar to a mortgage payment on a building). Because payroll can be expected to increase as a result of inflation, level dollar payments generally represent a decreasing percentage of payroll; in dollars adjusted for inflation, the payments can be expected to decrease over time.

Level percentage of projected payroll amortization method

Amortization payments are calculated so that they are a constant percentage of the projected payroll of active plan members over a given number of years. The dollar amount of the payments generally will increase over time as payroll increases due to inflation; in dollars adjusted for inflation, the payments can be expected to remain level.

Net OPEB Obligation

The cumulative difference since the effective date of this Statement between annual OPEB cost and the employer's contributions to the plan, including the OPEB liability (asset) at transition, if any, and excluding (a) short-term differences and (b) unpaid contributions that have been converted to OPEB-related debt. It will be included as a balance sheet entry on the financial statements.

Normal cost

That portion of the Actuarial Present Value of OPEB benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. It is the value of benefits to be accrued in the valuation year by active employees.

OPEB-related debt

All long-term liabilities of an employer to an OPEB plan, the payment of which is not included in the annual required contributions of a sole or agent employer (ARC) or the actuarially determined required contributions of a cost-sharing employer. Payments generally are made in accordance with installment contracts that usually include interest. Examples include contractually deferred contributions and amounts assessed to an employer upon joining a multiple-employer plan.

Other postemployment benefits

Postemployment benefits other than pension benefits. Other postemployment benefits (OPEB) include postemployment healthcare benefits, regardless of the type of plan that provides them, and all postemployment benefits provided separately from a pension plan, excluding benefits defined as termination offers and benefits.

Pay-as-You-Go

A method of financing an OPEB plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.

Farestrain 52:
For each future period, if the amount of the OPTER plan's fiduciary netmonities in prescript to be greater than or exact to the branch assumests that are serviced to be made in that a cered and OPTER plan anoth us to both priorit accordance to be record as any accordance to a subset of the brancher accorded reserved as the brancher disagra accordance to a subset of the brancher accorded returned as the product and accordance to the product of the made in the arrived adoubt to determine the brancher accorded rate of the fact that the product accordance to the product accordance to the product accordance to the factor accordance to the plant accordance to the plant accordance to the product accordance to the accordance to the plant accordance to the plant accordance to the plant accordance to the description of the plant accordance to the