



TOWN OF PLYMOUTH, MASSACHUSETTS

OTHER POSTEMPLOYMENT BENEFITS PROGRAM

FINANCIAL REPORTING AND DISCLOSURES
Governmental Accounting Standards Board
Statements 74 and 75

**Disclosures as of
June 30, 2020**

KMS Actuaries, LLC
52 Hunt Road
Kingston, NH 03848

January, 2021



A C T U A R I E S
L L C

January 18, 2021

Ms. Lynne A. Barrett
Director of Finance
Town of Plymouth, Massachusetts
26 Court Street
Plymouth, MA 02360

Dear Lynne:

We are pleased to present the enclosed report of the July 1, 2018 actuarial valuation of the retiree health care benefits for the Town of Plymouth, Massachusetts. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2020 under the following Governmental Accounting Standards Board (GASB) Statements:

- ◆ GASB Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans (GASB 74)
- ◆ GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions (GASB 75)

The Principal Valuation Results, including assets, liabilities and the development of future contributions, are provided in Section 1. The Notes to the Financial Statements and the Required Supplementary Information are provided in Sections 2 and 3, respectively. Employer Reporting Amounts under GASB 75 are provided in Section 4. The Summary of Plan Provisions and Actuarial Assumptions and Methods are shown in Sections 5 and 6, respectively. Section 7 summarizes the demographic profile of active members and retired members, covered spouses and survivors. Finally, a Glossary of Terms is provided in Section 8.

Our calculations are based on member census data and other information provided by the Town of Plymouth, Massachusetts as well as health plan rates provided by the Town as of July 1, 2019. Although we did not audit the data used in the valuation and disclosure calculations, we believe that the information is complete and reliable.

Liabilities presented in this report are based on a discount rate of 2.21%, the rate that reflects a tax-exempt, high quality municipal bond rate. The municipal bond rate of 2.21% is based on the Bond Buyer 20-Bond GO Index published on June 30, 2020.

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Ms. Lynne A. Barrett

January 18, 2021

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This report was completed in accordance with generally accepted actuarial standards and procedures, and conforms to the Code of Professional Conduct of the American Academy of Actuaries. The actuarial assumptions other than those explicitly applicable to the postemployment benefit plans are consistent with those used by the Plymouth and Massachusetts Teachers Retirement Systems' actuaries for the Retirement System pension valuations.

Future actuarial valuation results may differ significantly from the current results presented in this report. Examples of potential sources of volatility include plan experience differing from that anticipated by the economic or demographic assumptions, the effect of new entrants, changes in economic or demographic assumptions, the effect of law changes and the delayed effect of smoothing techniques.

Our valuation follows generally accepted actuarial methods and we perform such tests as we consider necessary to assure the accuracy of the results. The amounts presented in this report have been appropriately determined according to the actuarial assumptions and methods stated herein.

This report is intended for the sole use of the Town of Plymouth, Massachusetts and is intended to provide information to comply with the stated purpose of the report. It may not be appropriate for other purposes.

The expected claims, cost trend rates, and analysis of regulatory changes have been developed based on the expertise of the undersigned health and welfare actuary, Christopher E. Bean, ASA, MAAA. The undersigned credentialed actuaries are Members of the American Academy of Actuaries and together meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. They are available to answer any questions with regard to this report.

Respectfully submitted,



Linda L. Bournival, FSA, EA

Member, American Academy of Actuaries

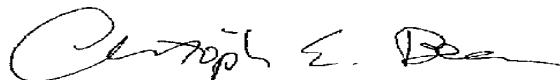
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EXECUTIVE SUMMARY

Purpose of Report

This report presents the results of the actuarial valuation of the Town of Plymouth, Massachusetts's retiree health care benefits as of July 1, 2018. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2020 under the following Governmental Accounting Standards Board (GASB) Statements:

- ◆ GASB Statement No. 74, Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans (GASB 74)
- ◆ GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions (GASB 75)

The results as of the measurement date are based on a roll forward of the liabilities developed in the most recent actuarial valuation.

GASB Accounting Standards

In June 2015, the GASB approved two related Statements that significantly changed the way other postemployment benefits (OPEB) plans and governments account and report OPEB liabilities. GASB Statement No. 74 (GASB 74), *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, replaced the requirements of Statement No. 43 and GASB Statement No. 75 (GASB 75), *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, replaced the requirements of Statement No. 45.

The effective date for GASB 74 is for plan years beginning after June 15, 2016, which is the plan year ending June 30, 2017 for the Town of Plymouth, Massachusetts. The effective date for GASB 75 is for fiscal years beginning after June 15, 2017, which is the fiscal year ending June 30, 2018 for the Town of Plymouth, Massachusetts.

GASB 74 requires OPEB plans to present a statement of fiduciary net position (OPEB plan assets) and a statement of changes in fiduciary net position. Further, the statement requires that notes to financial statements include descriptive information such as the types of benefits provided, the classes of plan members covered and the authority under which benefit terms are established or may be amended. Finally, GASB 74 requires OPEB plans to present in required supplementary information the sources of the changes in the net OPEB liability and information about the actuarially determined contributions compared with the actual contributions made to the plan and related ratios.

GASB 74 and GASB 75 require projected benefit payments be discounted to their actuarial present value using the single rate that reflects (1) a long-term expected rate of return on OPEB plan investments to the extent that the OPEB plan's assets are sufficient to pay benefits and OPEB plan assets are expected to be invested using a strategy to achieve that return and (2) a tax-exempt, high-quality municipal bond rate to the extent that the conditions for use of the long-term expected rate of return are not met.

GASB 75 establishes standards for measuring and recognizing liabilities, deferred outflows of resources, deferred inflows of resources and OPEB expense by state and local governments.

EXECUTIVE SUMMARY

Town of Plymouth, Massachusetts Other Postemployment Benefits Program

The Town of Plymouth, Massachusetts administers the retiree health care benefits program - a single-employer defined benefit plan that is used to provide postemployment benefits other than pensions (OPEB) for all permanent full-time employees. The Town provides health care benefits for retirees and their dependents. Benefits are provided through the Town, and the full cost of benefits is shared between the Town and retirees.

Summary of Principal Results

A summary of principal results from the current and prior measurement dates follows:

Disclosure Date	June 30, 2020	June 30, 2019	% Change
Valuation Date	July 1, 2018	July 1, 2018	
Membership Data			
Active Plan Members	1,609	1,591	1.1%
Inactive Plan Members (excludes covered spouses)	1,308	1,276	2.5%
Total Plan Members	2,917	2,867	1.7%
Covered Spouses	738	733	0.7%
 Covered Payroll	 \$112,135,762	 \$108,493,908	 3.4%
Net OPEB Liability			
Discount Rate	2.21%	3.50%	
Total OPEB Liability (TOL)	\$994,140,743	\$773,370,737	28.5%
Fiduciary Net Position (FNP)	\$6,582,066	\$5,163,522	27.5%
Net OPEB Liability	\$987,558,677	\$768,207,215	28.6%
FNP as % of TOL	0.7%	0.7%	0.0%
 OPEB Expense	 		
OPEB Expense	\$71,130,974	\$61,319,638	16.0%
Deferred Outflows	\$286,497,544	\$123,714,234	
Deferred Inflows	\$14,837,419	\$20,399,696	
Recognition Period	6.75	6.75	

EXECUTIVE SUMMARY

Experience Gain and Loss

In developing the Total OPEB Liability, various assumptions are made regarding future premium rates, mortality, retirement, disability and turnover rates. A comparison of the results of the current and prior measurements is made to determine how closely actual experience relates to expected. For the current measurement period, there is no experience gain or loss as the Total OPEB liability was developed from a roll forward of results of the most recent valuation.

Changes of Assumptions

The discount rate changed from 3.5% as of June 30, 2019 to 2.21% as of June 30, 2020. In addition, the inflation rate was updated in this valuation. A summary of the impact on the Total OPEB Liability (TOL) of each assumption change is provided below:

◆ Increase due to change in Inflation Assumption	3,553,000
◆ Increase due to change in Discount Rate	212,798,000
Total	\$ 216,351,000

All of the assumptions used in this valuation are shown in Section 6, Actuarial Assumptions and Methods.

Changes of Benefit Terms

The Patient Protection and Affordable Care Act (PPACA) previously applied a 40% excise tax, commonly referred to as the "Cadillac Tax," to the cost of plan benefits in excess of statutory thresholds beginning in 2022. This tax was repealed in December 2019. All other benefit terms are the same as those used in the prior measurement. A Summary of the Principal Plan Provisions is provided in Section 5.

Total OPEB Liability

The Total OPEB Liability as of the current measurement date, June 30, 2020, is \$994,140,743. The Total OPEB Liability as of the prior measurement date, June 30, 2019, was \$773,370,737. During the current measurement period ending June 30, 2020, the Total OPEB Liability increased by \$220,770,006, or 28.5%. The development of the Total OPEB Liability for the current measurement period is shown in Section 1, Exhibit 1.2.

Fiduciary Net Position

The Fiduciary Net Position is equal to the market value of assets and as of the current measurement date, June 30, 2020, is \$6,582,066. The Fiduciary Net Position as of the prior measurement date, June 30, 2019, was \$5,163,522. During the plan years ended 2020 and 2019, the actual rates of return were 6.17% and 7.88%, respectively. The expected long-term rate of return is 6.00%. The Fiduciary Net Position is shown in Section 1, Exhibit 1.1.

EXECUTIVE SUMMARY

Employer Future Period Contributions

The Town's funding policy is to contribute an amount equal to at least 1% of covered payroll each year. Due to COVID-19, for FY2021 the contribution was revised to \$500,000 from the General Fund and 1% of covered payroll from the Enterprise funds.

Discount Rate

As of the June 30, 2020 measurement date, the OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore the 2.21% municipal bond rate was applied to all periods to determine the total OPEB liability. Projected benefit payments are discounted to their actuarial present value using a single discount rate of 2.21%.

OPEB Expense

The OPEB Expense for the current measurement period ending June 30, 2020, is \$71,130,974. Benefit changes are recognized immediately and experience gains and losses and assumption changes developed in this valuation are recognized over 6.75 years. Investment gains and losses are recognized over 5 years. The OPEB Expense for the prior measurement period was \$61,319,638. The development of the OPEB expense for the current measurement period is shown in Section 4, Exhibit 4.2.

COVID-19 Pandemic

The assumptions in this report do not reflect the potential impacts of the COVID-19 pandemic on the OPEB program. Especially in the short range, the pandemic is likely to materially affect the economic, demographic and healthcare-specific experience, in a way not anticipated by the assumptions on which the projections are based.

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.1 - OPEB Trust Assets

The Town has established an irrevocable trust pursuant to special legislation enacted under Chapter 113 of the Acts of 2012 for the purpose of accumulating assets to prefund the OPEB liabilities. Plan assets segregated and restricted in an OPEB trust must be dedicated to providing plan benefits to retirees and beneficiaries in accordance with the terms of the plan and must be legally protected from creditors of the employer. Further, employer contributions to the trust must be irrevocable. Asset information for the current and prior fiscal years was provided by the Town and is presented below:

Fiscal Year Ended June 30	2020	2019
Trust Fund Composition at Fiscal Year-End		
Domestic Equities	\$2,876,189	\$2,128,089
International Equities	915,070	962,906
Fixed Income	2,790,807	2,072,527
Total Market Value of Assets	\$6,582,066	\$5,163,522
Asset Activity		
Market value, beginning of year	\$5,163,522	\$3,822,056
Employer Premiums	19,083,851	18,182,695
OPEB Trust Contributions	1,041,248	970,593
Benefit Payments	(19,083,851)	(18,182,695)
Administrative Expenses	-	-
Investment Return	377,296	370,873
Market value, end of year	\$6,582,066	\$5,163,522
Money-Weighted Rate of Return	6.17%	7.88%
(Gain) / Loss on OPEB Plan Investments		
Projected earnings	\$382,223	\$294,344
Actual earnings	377,296	370,873
(Gain) / Loss on OPEB plan investments	\$4,927	(\$76,529)

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.2 - Total OPEB Liability

The Total OPEB Liability, developed using the Entry Age Normal funding method, is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service. The total OPEB liability as of the June 30, 2020 measurement date was developed from an actuarial valuation as of July 1, 2018 and rolled forward to the OPEB plan's fiscal year-end.

The Service Cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year. Only active employees who have not reached the age at which the probability of retirement is 100% incur a service cost.

Actuarial experience gains and losses arise from the difference between expected and actual experience, excluding amounts related to benefit changes and changes in assumptions or other inputs.

The development of the Total OPEB Liability from the beginning of the measurement period, June 30, 2019 to the end of the measurement period, June 30, 2020 is shown below:

Measurement Date	June 30, 2020
1. Total OPEB Liability, beginning of year:	
a. Actives	\$349,222,730
b. Retirees, Covered Spouses and Survivors	424,148,007
c. Total OPEB Liability at 3.5% (a. + b.)	\$773,370,737
2. Service Cost	\$28,061,321
3. Expected Benefit Payments	
a. Current retirees	(\$17,633,483)
b. Future retirees	(1,450,368)
c. Total (a. + b.)	(\$19,083,851)
4. Interest [3.5% x (1.c. + 2. + .5 x 3.c.)]	\$27,716,155
5. Changes of benefit terms	(\$32,274,418)
6. Differences between expected and actual experience	\$0
7. Changes of assumptions or other inputs	\$216,350,799
8. Total OPEB Liability, end of year (1.c. + 2. + 3.c. + 4. + 5. + 6. + 7.)	
a. Actives	\$494,661,635
b. Retirees, Covered Spouses and Survivors	499,479,108
c. Total OPEB Liability at 2.21% (a. + b.)	\$994,140,743

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.3 - Development of Actuarially Determined Employer Contributions

The Town's funding policy is to contribute an amount equal to at least 1% of covered payroll each year. Due to COVID-19, for FY2021 the contribution was revised to \$500,000 from the General Fund and 1% of covered payroll from the Enterprise funds.

The Actuarially Determined Employer Contribution (ADEC) equals the Normal Cost plus a provision for amortizing the Unfunded Actuarial Accrued Liability. We have assumed increasing dollar amortization over an amortization period of 30 years.

Fiscal Year Ending	June 30, 2020	June 30, 2021
Discount Rate	3.50%	2.21%
1. Normal Cost	\$28,061,321	\$40,436,080
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$773,370,737	\$994,140,743
b. Actuarial Value of Plan Assets	\$5,163,522	\$6,582,066
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$768,207,215	\$987,558,677
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$768,207,215	\$987,558,677
b. Amortization Period in years	30	30
c. Payroll Growth Rate	3.5%	3.5%
d. Amortization Factor	30.00	36.20
e. Amortization Amount (3.a. / 3.d.)	\$25,606,907	\$27,280,626
4. Interest on 1. and 3.e.	\$1,878,388	\$1,496,539
5. Actuarially Determined Employer Contribution (1. + 3.e. + 4.)	\$55,546,616	\$69,213,245
6. Actual Employer Contribution to OPEB Trust	\$1,041,248	TBD
7. Expected Benefit Payments	\$19,083,851	
8. Total Contribution (6. + 7.)	\$20,125,099	

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.1 - Plan Description

Plan Administration

The Town of Plymouth, Massachusetts administers the retiree health care benefits program - a single-employer defined benefit plan that is used to provide postemployment benefits other than pensions (OPEB) for all permanent full-time employees.

Plan Membership

At June 30, 2020, OPEB plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefit payments ¹	1,308
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	1,609
	<hr/>
	2,917
	<hr/>

¹Per paragraph 34a of GASB 74 and further clarified by Question 4.67 of the 2017-2 GASB 74 Implementation Guide, the total shown for inactive plan members or beneficiaries currently receiving benefit payments does not include covered spouses or other dependents.

Benefits Provided

The Town provides health care benefits for retirees and their dependents. Benefits are provided through the Town, and the full cost of benefits is shared between the Town and retirees.

Employer Future Period Contributions

The Town's funding policy is to contribute an amount equal to at least 1% of covered payroll each year. Due to COVID-19, for FY2021 the contribution was revised to \$500,000 from the General Fund and 1% of covered payroll from the Enterprise funds.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

The components of the net OPEB liability at June 30, 2020, were as follows:

Total OPEB liability	\$ 994,140,743
Fiduciary net position	(6,582,066)
Net OPEB liability	\$ 987,558,677

Fiduciary net position as a percentage of the total OPEB liability 0.66%

Actuarial Assumptions

The total OPEB liability was determined by an actuarial valuation as of July 1, 2018, rolled forward to the measurement date and using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.4 percent
Discount rate	2.21 percent, net of investment expenses, including inflation
Healthcare cost trend rate	8 percent for 2018, decreasing 0.5 percent per year to 5.5 percent, then grading down to an ultimate trend rate of 3.9 percent, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical inflation rate is reached in 2075.
Pre-Retirement Mortality - General and Public Safety employees	RP-2014 Blue Collar Employees Table projected generationally with Scale MP-2018.
Post-Retirement Mortality - General and Public Safety employees	RP-2014 Blue Collar Healthy Annuitant Table projected generationally with Scale MP-2018.
Pre-Retirement Mortality - Teachers	RP-2014 White Collar Mortality Table, base year 2014, projected with generational mortality improvement using scale MP-2016.
Post-Retirement Mortality - Teachers	RP-2014 White Collar Mortality Table, base year 2014, projected with generational mortality improvement using scale MP-2016.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

Long-Term Expected Rate of Return

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage provided in the investment policy statement and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of June 30, 2020 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rates of Return ¹
Domestic Equities	40%	4.90%
International Equities	20%	5.70%
Fixed Income	40%	1.40%
Total	100%	

¹ Target asset allocation provided by Fiduciary Investment Advisors in the investment policy statement and long-term expected real rates of return are based on those provided in the Horizon Actuarial Services, LLC "Survey of Capital Market Expectations, 2020 Edition" and professional judgement.

Discount Rate

The discount rate used to measure the total OPEB liability was 2.21%. The projection of cash flows used to determine the discount rate assumed that contributions from the Town will be made in accordance with the plan's funding policy. Based on those assumptions, the OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore the 2.21% municipal bond rate was applied to all periods to determine the total OPEB liability.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate

The following presents the net OPEB liability calculated using the current discount rate of 2.21 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (1.21 percent) or 1-percentage point higher (3.21 percent) than the current rate:

	1% Decrease (1.21%)	Assumed Discount Rate (2.21%)	1% Increase (3.21%)
Total OPEB Liability	\$1,219,464,473	\$ 994,140,743	\$ 823,055,801
Fiduciary Net Position	(6,582,066)	(6,582,066)	(6,582,066)
Net OPEB Liability	\$1,212,882,407	\$ 987,558,677	\$ 816,473,735

Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates

The following presents the net OPEB liability calculated using the current healthcare cost trend rates as well as what the net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage point lower (7% year 1 decreasing to 2.9%) or 1-percentage point higher (9% year 1 decreasing to 4.9%) than the current healthcare cost trend rates:

	1% Decrease 7% Year 1 Decreasing to 2.9%	Assumed Healthcare Cost Trend Rates 8% Year 1 Decreasing to 3.9%	1% Increase 9% Year 1 Decreasing to 4.9%
Total OPEB Liability	\$ 795,460,374	\$994,140,743	\$1,265,250,014
Fiduciary Net Position	(6,582,066)	(6,582,066)	(6,582,066)
Net OPEB Liability	\$ 788,878,308	\$ 987,558,677	\$1,258,667,948

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30	2020	2019	2018	2017	2016
Total OPEB Liability					
Service cost	\$ 28,061,321	\$ 21,914,725	\$ 23,038,206	\$ 27,863,367	
Interest	27,716,155	23,742,073	22,140,028	19,356,363	
Changes of benefit terms	(32,274,418)	-	-	-	
Differences between expected and actual experience	-	15,849,776	-	-	
Changes of assumptions	216,350,799	129,379,977	(31,391,364)	(86,284,600)	
Benefit payments	(19,083,851)	(18,182,695)	(17,036,667)	(16,651,413)	
Net change in total OPEB liability	\$220,770,006	\$172,703,856	\$ (3,249,797)	\$ (55,716,283)	
Total OPEB liability—beginning	\$773,370,737	\$600,666,881	\$603,916,678	\$659,632,961	
Total OPEB liability—ending (a)	\$994,140,743	\$773,370,737	\$600,666,881	\$603,916,678	
Plan Fiduciary Net Position					
Contributions—employer	\$ 20,125,099	\$ 19,153,288	\$ 17,980,980	\$ 17,363,363	
Net investment income	377,296	370,873	228,269	171,891	
Benefit payments	(19,083,851)	(18,182,695)	(17,036,667)	(16,651,413)	
Administrative expenses	-	-	-	-	
Other	-	-	-	-	
Net change in plan fiduciary net position	\$ 1,418,544	\$ 1,341,466	\$ 1,172,582	\$ 883,841	
Plan fiduciary net position—beginning	\$ 5,163,522	\$ 3,822,056	\$ 2,649,474	\$ 1,765,633	
Plan fiduciary net position—ending (b)	\$ 6,582,066	\$ 5,163,522	\$ 3,822,056	\$ 2,649,474	
Net OPEB liability—ending (a) – (b)	\$987,558,677	\$768,207,215	\$596,844,825	\$601,267,204	
Plan fiduciary net position as a percentage of the total OPEB liability	0.66%	0.67%	0.64%	0.44%	
Covered payroll	\$112,135,762	\$108,493,908	\$104,133,239	\$ 92,397,157	
Net OPEB liability as a percentage of covered payroll	880.68%	708.06%	573.15%	650.74%	
Discount Rate	2.21%	3.50%	3.87%	3.58%	

Changes of Benefit Terms

The Patient Protection and Affordable Care Act (PPACA) previously applied a 40% excise tax, commonly referred to as the "Cadillac Tax," to the cost of plan benefits in excess of statutory thresholds beginning in 2022. This tax was repealed in December 2019. All other benefit terms are the same as those used in the prior measurement.

Changes of Assumptions

The discount rate changed from 3.5% as of June 30, 2019 to 2.21% as of June 30, 2020. In addition, the inflation rate was updated in this valuation.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Investment Returns

Fiscal Year Ended June 30	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Annual money-weighted rate of return, net of investment expenses	6.17%	7.88%	6.50%	7.11%						

The money-weighted rate of return considers the changing amounts actually invested during a period and weights the amount of OPEB plan investments by the proportion of time they are available to earn a return during that period. The rate of return is then calculated by solving, through an iterative process, for the rate that equates the sum of the weighted external cash flows into and out of the OPEB plan investments to the ending fair value of OPEB plan investments.

Note: Only 4 years are presented here, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Investment Returns

Calculation of Money-Weighted Rate of Return

	Plan Investments/ Net External Cash Flows (a)	Periods Invested (b)	Period Weight (c)=(b)÷12	(d)=(a) x (1+r _{mw}) ^(c)
Beginning value - July 1, 2019	\$ 5,163,522	12	1.00	\$ 5,482,080
Monthly net external cash flows:				
July	1,041,248	11	0.92	1,099,985
August	-	10	0.83	-
September	-	9	0.75	-
October	-	8	0.67	-
November	-	7	0.58	-
December	-	6	0.50	-
January	-	5	0.42	-
February	-	4	0.33	-
March	-	3	0.25	-
April	-	2	0.17	-
May	-	1	0.08	-
June	-	0	0.00	-
Ending value - June 30, 2020				\$ 6,582,066
Money-weighted rate of return:				6.17%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	2020	2019	2018	2017	2016
Actuarially determined contribution	\$ 55,546,616	\$ 44,515,201	\$ 44,853,623	\$ 39,477,033	
Contributions in relation to the actuarially determined contribution	20,125,099	19,153,288	17,980,980	17,363,363	
Contribution deficiency (excess)	<u>\$ 35,421,517</u>	<u>\$ 25,361,913</u>	<u>\$ 26,872,643</u>	<u>\$ 22,113,670</u>	
Covered payroll	\$112,135,762	\$108,493,908	\$104,133,239	\$ 92,397,157	
Contributions as a percentage of covered payroll	17.95%	17.65%	17.27%	18.79%	
Discount rate	3.50%	3.87%	3.58%	4.00%	
Inflation	2.40%	2.60%	2.25%	2.25%	

Notes to Schedule

Valuation Date

Actuarially determined contributions are determined as of July 1, one year prior to the end of the fiscal year in which contributions are reported.

Methods and Assumptions as of Current Measurement Date

Actuarial cost method	Entry Age Normal
Amortization method	Increasing at 3.5% over 30 years on an open amortization period for partial pre-funding.
Amortization period	30 years
Asset valuation method	Market value
Healthcare cost trend rates	8 percent for 2018, decreasing 0.5 percent per year to 5.5 percent, then grading down to an ultimate trend rate of 3.9 percent, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical inflation rate is reached in 2075.

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

Exhibit 4.1 - Deferred Outflows and Deferred Inflows of Resources

Deferred Outflows of Resources and Deferred Inflows of Resources arising from differences between expected and actual experience are recognized in OPEB Expense over the average expected remaining service life of all active and inactive participants.

Balances at June 30, 2020					
	Amounts Recognized in OPEB Expense through June 30, 2020			Deferred Outflows of Resources	Deferred Inflows of Resources
Year	Experience Losses	Experience Gains	(c)	(a) - (c)	(b) - (c)
2018	\$ -	\$ -	\$ -	\$ -	\$ -
2019	15,849,776	-	4,696,230	11,153,546	-
2020	-	-	-	-	-
Total				<u>\$ 11,153,546</u>	<u>\$ -</u>

Deferred Outflows of Resources and Deferred Inflows of Resources arising from changes of assumptions are recognized in OPEB Expense over the average expected remaining service life of all active and inactive participants.

Balances at June 30, 2020					
	Increases in the Total OPEB Liability	Decreases in the Total OPEB Liability	Amounts Recognized in OPEB Expense through June 30, 2020	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)
2018	\$ -	\$ 31,391,364	\$ (16,609,188)	\$ -	\$ 14,782,176
2019	129,379,977	-	38,334,808	91,045,169	-
2020	216,350,799	-	32,051,970	184,298,829	-
Total				<u>\$ 275,343,998</u>	<u>\$ 14,782,176</u>

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

Exhibit 4.1 - Deferred Outflows and Deferred Inflows of Resources

Deferred Outflows of Resources and Deferred Inflows of Resources arising from differences between projected and actual earnings on OPEB Plan investments are recognized in OPEB Expense over five years.

						Balances at June 30, 2020	
	Investment Earnings Less Than Projected	Investment Earnings Greater Than Projected	Amounts Recognized in OPEB Expense through June 30, 2020	Deferred Outflows of Resources	Deferred Inflows of Resources		
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)		
2018	\$ -	\$ 33,167	\$ (19,899)	\$ -	\$ 13,268		
2019	-	76,529	(30,612)	-	45,917		
2020	4,927	-	985	3,942	-		
Subtotal				\$ 3,942	\$ 59,185		
Net				\$ -	\$ 55,243		

Amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources will be recognized in OPEB expense as follows:

Year ended June 30		
2021	\$ 48,010,138	
2022	\$ 48,010,138	
2023	\$ 49,843,786	
2024	\$ 53,568,475	
2025	\$ 48,188,609	
Thereafter	\$ 24,038,979	
Deferred Outflows	\$ 286,497,544	
Deferred Inflows	\$ 14,837,419	

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

Exhibit 4.2 - OPEB Expense

The OPEB Expense and deferred outflows and inflows of resources primarily result from changes in the components of the net OPEB liability (NOL). Most changes in the NOL are included in the OPEB Expense in the period of the change, including service cost, interest on total OPEB liability, changes in benefit terms and projected earnings on the OPEB plan's investments. Other changes in the net OPEB liability are included in OPEB Expense over the current and future periods. These include the effects on the total OPEB liability of changes of economic and demographic assumptions and differences between expected and actual experience. In addition, the effect on the net OPEB liability of differences between the projected earnings on OPEB plan investments and actual experience with regard to those earnings are included in OPEB expense over the current and future periods. The OPEB Expense for the reporting period ending June 30, 2020 is presented below:

Fiscal Year Ended June 30, 2020

Measurement Date	6/30/2020
1. Service cost	\$ 28,061,321
2. Interest on the total OPEB liability	
a. Total OPEB liability, beginning of year	773,370,737
b. Service cost, beginning of year	28,061,321
c. Benefit payments	(19,083,851)
d. Interest on total OPEB liability = 3.5% times (a. + b. + .5 times c.)	27,716,155
3. Differences between expected and actual experience	2,348,115
4. Changes of benefit terms	(32,274,418)
5. Changes of assumptions	45,682,978
6. Projected earnings on OPEB plan investments	
a. Plan fiduciary net position, beginning of year	5,163,522
b. Contributions - Employer	20,125,099
c. Benefit payments	(19,083,851)
d. Administrative expenses and other	-
e. Total projected earnings	(382,223)
7. Differences between projected and actual earnings on OPEB plan investments	(20,954)
8. OPEB plan administrative expenses	-
9. Other changes in fiduciary net position	-
10. Total OPEB Expense	\$ 71,130,974

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Eligibility for Postemployment Benefits Employees of the Town and their dependents are eligible for postemployment medical, dental and life insurance based on the eligibility requirements under the Plymouth and Massachusetts Teachers Retirement Systems.

Retirement Eligibility General employees hired before April 2, 2012: retire after attaining age 55 with 10 or more years of service or any age with 20 or more years of service

General employees hired after April 1, 2012: retire after attaining age 60 with 10 or more years of service

Public Safety employees hired before April 2, 2012: retire after attaining age 55 or any age with 20 or more years of service

Public Safety employees hired after April 1, 2012: retire after attaining age 55

Ordinary Disability Eligibility Any member who is unable to perform his or her duties due to a non-occupational disability and has ten or more years of creditable service.

Accidental Disability Eligibility Any member who is unable to perform his or her duties due to a job-related disability.

Medical Premiums The total monthly premiums by plan are shown below:

Non-Medicare Plans - July 1, 2019	Individual	Family
Blue Choice	\$880.02	\$2,085.15
Blue Care Elect	\$957.10	\$2,204.26

Medicare Plans - July 1, 2019

Medex w/OBRA	\$525.74
Managed Blue	\$405.33

Participant Contributions Retired employees contribute a percentage of the total medical and dental premium, depending on the retirees' date of retirement or hire date, as follows:

Retired prior to July 1, 1994 - 1%

Retired after July 1, 1994 and hired before July 1, 2003 - 10%

Hired on or after July 1, 2003 and before July 1, 2016 - 20%

Hired on or after July 1, 2016 and before June 30, 2018 - 22.5%

Hired on or after July 1, 2018 - 25%

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Continuation of Coverage to Spouse After Death of Retiree Surviving spouse may continue coverage for lifetime by paying the required medical premium.

Medicare Penalty Reimbursement The Town reimburses the Medicare late-enrollment penalty, if applicable, based on information provided in the retiree data.

Medicare Part B Reimbursement The Town reimburses \$87.50 per month for retirees and spouses who were Medicare-eligible as of March 31, 2016 and retirees who become Medicare-eligible on or after April 1, 2016. Spouses who become Medicare-eligible on or after April 1, 2016 are not eligible for the reimbursement.

Dental Coverage Dental coverage is provided. The total monthly costs are \$36.58 and \$73.16 for individual and family plans, respectively. Retirees contribute the percentage of the monthly premiums shown under Participant Contributions.

Life Insurance Coverage Retirees are eligible for a \$2,000 life insurance benefit. The total monthly cost is \$1.38. Retired Town employees contribute 1% of the total life insurance premium rates and retired School employees contribute 10% of the total life insurance premium rates.

PPACA Excise Tax The Patient Protection and Affordable Care Act (PPACA) previously applied a 40% excise tax, commonly referred to as the "Cadillac Tax," to the cost of plan benefits in excess of statutory thresholds beginning in 2022. This tax was repealed in December 2019.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Valuation Date	July 1, 2018
Disclosure Date	June 30, 2020
GASB 75 Reporting Date	June 30, 2020
Long-Term Expected Rate of Return	6%, compounded annually, net of fees. A long-term assumption based on capital market expectations by asset class, historical returns and professional judgment. A building block approach was used that considered the target asset allocation, expected returns by asset class and risk analysis to determine a long-term expected average annual rate of return.
Municipal Bond Rate	2.21%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2020.
Discount Rate (GASB)	2.21%, compounded annually, for the measurement as of June 30, 2020. 3.5%, compounded annually, for the measurement as of June 30, 2019. The single rate that reflects the long-term expected rate of return on OPEB plan investments to the extent that the OPEB plan's assets, which are expected to be invested using a strategy to achieve that return, are sufficient to pay benefits, and a tax-exempt, high-quality municipal bond rate to the extent that the conditions for use of the long-term expected rate of return are not met.
Discount Rate (ADEC)	3.5%, compounded annually, for development of the Actuarially Determined Contribution (ADEC) as of June 30, 2020.
Amortization Method	Increasing at 3.5% over 30 years on an open amortization period for partial pre-funding.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Medical Trend Rates

Year	Trend
1	8.00%
2	7.50%
3	7.00%
4	6.50%
5	6.00%
6	5.50%
Ultimate	3.90%

Trend rates after year 6 grade down to the ultimate rate of 3.9 percent utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate trend rate is reached in 2075.

Health care trend assumptions begin at current levels and grade down over a period of years to a lower level equal to some real rate plus inflation. The principal components of health trend are medical inflation, deductible erosion, cost shifting, utilization, technology and catastrophic claims. The overall effect of these components are expected to decline year by year.

Dental Trend Rates

Dental trend rates are 4% per year.

Inflation

2.4% per year, based on the 2020 Social Security Trustees Report published April 22, 2020.

Payroll Growth

3.5% per year.

Participation Rates

Medical - 95% of eligible retired employees will elect to participate.

Dental - 75% of eligible retirees will elect to participate.

Life - 95% of eligible retirees will elect to participate.

Medicare - all retired employees are assumed to enroll in Medicare at age 65.

Dependent Status

Male spouses are assumed to be three years older and female spouses are assumed to be three years younger than the retired employee.

65% of employees are assumed to retire with a covered spouse.

For current retirees, the actual census information is used.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Medical Per Capita Costs

The following annual per capita costs are for the fiscal year beginning July 1, 2018 and are applicable to retirees, survivors and spouses. Annual costs for current and future retirees are based on the blended curves shown below, developed using the plan coverages elected by current retirees and survivors and premium rates currently in effect. Future years' costs are based on the first year cost adjusted with trend.

Age	Medicare-Eligible		Medicare-Ineligible	
	Male	Female	Male	Female
Under 20	\$3,798	\$4,459	\$3,798	\$4,459
20-24	2,993	4,747	2,993	4,747
25-29	3,114	7,003	3,114	7,003
30-34	3,912	8,849	3,912	8,849
35-39	4,907	9,115	4,907	9,115
40-44	6,115	9,335	6,115	9,335
45-49	7,717	10,247	7,717	10,247
50-54	10,171	12,054	10,171	12,054
55-59	13,217	13,938	13,217	13,938
60-64	16,961	16,589	16,961	16,589
65-69	4,525	4,407	21,162	19,886
70-74	5,423	5,199	25,355	23,448
75-79	6,404	6,032	29,942	27,208
80-84	7,361	6,918	34,416	31,203
85-89	8,200	7,733	38,336	34,880
90-94	8,926	8,253	41,731	37,227
95+	9,488	7,981	44,359	35,996

Retiree Contributions

Annual per capita participant contributions for the fiscal year beginning July 1, 2018 are as follows:

Plan	Contribution				
	1%	10%	20%	23%	25%
Non-Medicare	\$ 107	\$ 1,069	\$ 2,138	\$ 2,405	\$ 2,672
Medicare	53	532	1,064	1,197	1,330

Actuarial Cost Method

Entry Age Normal. The costs of each employee's postemployment benefits are allocated as a level basis over the earnings of the employee between the employee's date of hire and the assumed exit ages.

Employee Data

Employee and retiree data were compiled and submitted by the Town as of June 30, 2019. We made reasonable adjustments for missing or invalid data.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Post-Retirement Mortality

Post-retirement mortality rates for General and Public Safety employees are based on the RP-2014 Blue Collar Healthy Annuitant Table projected generationally with Scale MP-2018.

Pre-Retirement Mortality

Pre-retirement mortality rates for General and Public Safety employees are based on the RP-2014 Blue Collar Employees Table projected generationally with Scale MP-2018.

Turnover Rates

Turnover rates for General and Public Safety employees are as follows:

General Employees		Public Safety	
Service	Rate	Service	Rate
0	15.00%	0	1.50%
1	12.00%	1	1.50%
2	10.00%	2	1.50%
3	9.00%	3	1.50%
4	8.00%	4	1.50%
5	7.60%	5	1.50%
10	5.40%	10	1.50%
15	3.30%	15	0.00%
20	2.00%	20	0.00%
25	1.00%	25	0.00%
30	0.00%	30	0.00%

Disability Rates

Disability rates for General and Public Safety employees are as follows:

General Employees		Public Safety	
Age	Rate	Age	Rate
25	0.02%	25	0.20%
30	0.03%	30	0.30%
35	0.06%	35	0.30%
40	0.10%	40	0.30%
45	0.15%	45	1.00%
50	0.19%	50	1.25%
55	0.24%	55	1.20%
60	0.28%	60	0.85%

55% of the General employee disabilities are job-related.

90% of the Public Safety employee disabilities are job-related.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Retirement Rates

Retirement rates for General and Public Safety employees are as follows:

General Employees			Public Safety	
Age	Male	Female	Age	All
45	0.00%	0.00%	45	1.00%
50	1.00%	1.50%	50	2.00%
55	2.00%	5.50%	55	15.00%
60	12.00%	5.00%	60	20.00%
62	30.00%	15.00%	62	25.00%
65	40.00%	15.00%	65	100.00%
69	30.00%	20.00%		
70	100.00%	100.00%		

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Post-Retirement Mortality

Post-retirement mortality rates for Teachers are based on the RP-2014 White Collar Mortality Table, base year 2014, projected with generational mortality improvement using scale MP-2016.

Pre-Retirement Mortality

Pre-retirement mortality rates for Teachers are based on the RP-2014 White Collar Mortality Table, base year 2014, projected with generational mortality improvement using scale MP-2016.

Turnover Rates

Turnover rates for Teachers are as follows:

Age	Service						
	0		5		10+		
	Male	Female	Male	Female	Male	Female	
20	13.0%	10.0%	5.5%	7.0%	1.5%	5.0%	
30	15.0%	15.0%	5.4%	8.8%	1.5%	4.5%	
40	13.3%	10.5%	5.2%	5.0%	1.7%	2.2%	
50	16.2%	9.8%	7.0%	5.0%	2.3%	2.0%	

Disability Rates

Disability rates for Teachers are as follows:

Age	Rate
20	0.004%
30	0.006%
40	0.010%
50	0.050%
60	0.070%

35% of the disabilities are job-related.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Retirement Rates

Retirement rates for Teachers are as follows:

Age	Years of Service						
	Less than 20		20-29		30+		
	Male	Female	Male	Female	Male	Female	
50	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%	
51	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%	
52	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%	
53	0.0%	0.0%	1.5%	1.0%	2.0%	1.5%	
54	0.0%	0.0%	2.5%	1.0%	2.0%	2.0%	
55	5.0%	3.0%	3.0%	3.0%	6.0%	5.0%	
56	5.0%	3.0%	6.0%	5.0%	20.0%	15.0%	
57	5.0%	4.0%	10.0%	8.0%	40.0%	35.0%	
58	5.0%	8.0%	15.0%	10.0%	50.0%	35.0%	
59	10.0%	8.0%	20.0%	15.0%	50.0%	35.0%	
60	10.0%	10.0%	25.0%	20.0%	40.0%	35.0%	
61	20.0%	12.0%	30.0%	25.0%	40.0%	35.0%	
62	20.0%	12.0%	35.0%	30.0%	35.0%	35.0%	
63	25.0%	15.0%	40.0%	30.0%	35.0%	35.0%	
64	25.0%	20.0%	40.0%	30.0%	35.0%	35.0%	
65	25.0%	25.0%	40.0%	40.0%	35.0%	35.0%	
66	30.0%	25.0%	30.0%	30.0%	40.0%	35.0%	
67	30.0%	30.0%	30.0%	30.0%	40.0%	30.0%	
68	30.0%	30.0%	30.0%	30.0%	40.0%	30.0%	
69	30.0%	30.0%	30.0%	30.0%	40.0%	30.0%	
70	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.1 - Active Members by Age and Years of Service as of July 1, 2018

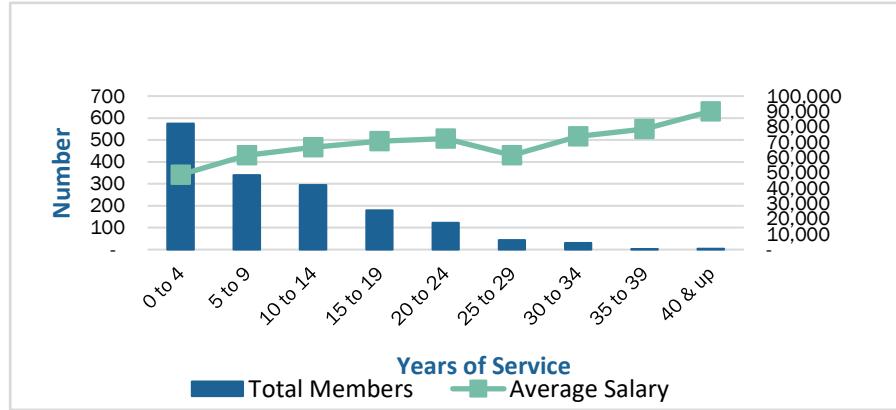
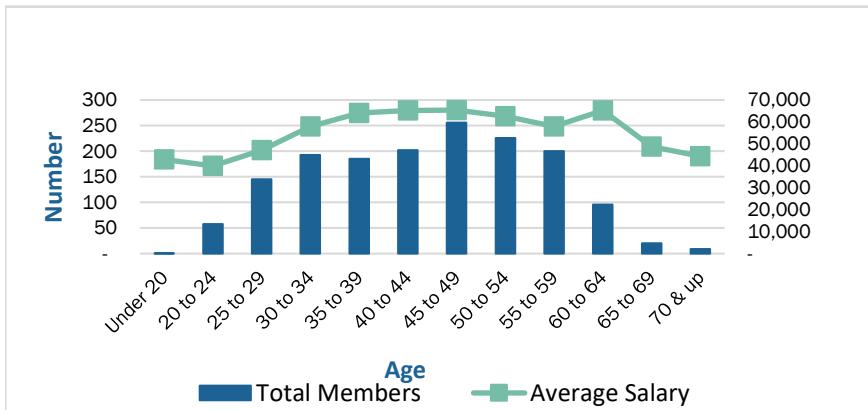
Age	Years of Service										Total	Total Salary	Average Salary
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up				
Under 20	1	-	-	-	-	-	-	-	-	1	42,893	42,893	
20 to 24	57	1	-	-	-	-	-	-	-	58	2,316,859	39,946	
25 to 29	124	21	-	-	-	-	-	-	-	145	6,838,187	47,160	
30 to 34	105	73	14	1	-	-	-	-	-	193	11,182,562	57,941	
35 to 39	73	51	52	9	-	-	-	-	-	185	11,842,121	64,011	
40 to 44	60	52	52	33	5	-	-	-	-	202	13,183,293	65,264	
45 to 49	59	62	59	41	33	2	-	-	-	256	16,742,733	65,401	
50 to 54	40	46	46	38	29	18	9	-	-	226	14,161,523	62,662	
55 to 59	39	22	50	30	34	12	12	1	-	200	11,596,415	57,982	
60 to 64	11	10	15	23	19	7	8	1	2	96	6,266,681	65,278	
65 to 69	4	1	4	2	2	4	1	1	1	20	976,025	48,801	
70 & up	2	-	2	2	-	1	1	-	1	9	400,043	44,449	
Total	575	339	294	179	122	44	31	3	4	1,591	95,549,335	60,056	
Total Salary	28,049,196	20,845,540	19,626,872	12,630,495	8,810,475	2,701,479	2,289,102	235,727	360,449				
Average Salary	48,781	61,491	66,758	70,561	72,217	61,397	73,842	78,576	90,112				

Average Age:

44.4

Average Service:

9.9



SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.2 - Retired Members, Covered Spouses and Survivors as of July 1, 2018

Age	Non-Medicare Plans			Medicare Plans	
	Blue Choice	Blue Care Elect	Medex w/OBRA	Managed Blue	Total
Under 40	5	1	0	1	7
40 to 44	4	0	0	0	4
45 to 49	7	0	1	0	8
50 to 54	21	4	1	0	26
55 to 59	33	12	2	2	49
60 to 64	102	15	24	70	211
65 to 69	28	9	123	192	352
70 to 74	4	6	182	70	262
75 to 79	3	4	138	16	161
80 to 84	1	2	83	6	92
85 to 89	1	1	41	1	44
90+	0	0	22	0	22
Total	209	54	617	358	1,238
Covered Spouses	167	41	297	227	732

Average Age: 70.1

In addition, there are 39 retirees, survivors and covered spouses that are not covered under any medical plan but are covered under either a life insurance plan and/or a dental plan which the Town contributes to and/or receive a reimbursement from the Town for a Medicare late-enrollment penalty.

SECTION 8 - GLOSSARY OF TERMS

Actuarial Assumptions – Assumptions as to the occurrence of future events affecting OPEB costs, such as mortality, withdrawal, disability and retirement; changes in compensation and 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 (or Funding Method) – A procedure for allocating the Actuarial Present Value of projected benefit payments to the current year (Service Cost) and the past (Total OPEB Liability).

Actuarial Gain or Loss (or Experience Gain or Loss) – A measure of the difference between actual experience and that expected based upon the set of Actuarial Assumptions during the period between the valuation date and the most recent immediately preceding valuation date.

Actuarial Present Value of Projected Benefit Payments – The dollar value on the valuation date of all benefits expected to be paid to current members based upon the Actuarial Assumptions and the terms of the Plan.

Actuarially Determined Contribution – A target or recommended contribution to a defined benefit OPEB plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

Actuarial Valuation Date – The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

Deferred Inflow of Resources – Acquisition of resources by a governmental entity that is applicable to future reporting periods. Under GASB 75, deferred inflows of resources are made up of experience gains, assumption changes reducing the Total OPEB Liability and investment gains that are recognized in future reporting periods.

Deferred Outflow of Resources – Consumption of resources by a governmental entity that is applicable to future reporting periods. Under GASB 75, deferred outflows of resources are made up of experience losses, assumption changes increasing the Total OPEB Liability and investment losses that are recognized in future reporting periods.

Discount Rate – Single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the sum of:

- (1) a long-term expected rate of return on OPEB plan investments to the extent that the OPEB plan's assets are sufficient to pay benefits and OPEB plan assets are expected to be invested using a strategy to achieve that return and
- (2) a tax-exempt, high-quality municipal bond rate to the extent that the conditions for use of the long-term expected rate of return are not met.

Employer Future Period Contributions – Contributions made by the employer, generally to an outside trust fund, to pay for future OPEB costs. These are costs in addition to the employer contributions made during the year to pay for ongoing premiums.

SECTION 8 - GLOSSARY OF TERMS

Entry Age Normal Actuarial Cost Method – A method under which the actuarial present value of the projected benefits of each individual in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age.

Explicit Subsidy – The difference between (a) the blended rates based on combined active and retired member experience and (b) actual cash contributions made by the employer.

Fiduciary Net Position – The fair market value of assets as of the measurement date.

Funded Ratio – The Actuarial Value of Assets expressed as a percentage of the Actuarial Accrued Liability.

GASB – Governmental Accounting Standards Board.

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

Implicit Subsidy – In an experience-rated healthcare plan that includes both active employees and retirees with blended premium rates for all plan members, the difference between (a) the age-adjusted premiums approximating claim costs for retirees in the group and (b) the blended rates based on combined active and retired member experience.

Long-Term Expected Rate of Return – Long-term expected rate of return on OPEB plan investments expected to be used to finance the payment of benefits, net of investment expenses.

Measurement Date – The date as of which the Total OPEB Liability and Fiduciary Net Position are measured.

Municipal Bond Rate – Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.

Net OPEB Liability – The liability of the employer for benefits provided through an OPEB plan. It is calculated as the Total OPEB Liability less the Fiduciary Net Position.

OPEB – Other Postemployment Benefits including medical, dental, vision, hearing and life insurance 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.

Present Value of Future Benefits – The actuarial present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value of money and the probabilities of payment.

Reporting Date – The last day of the Plan or employer's fiscal year.

SECTION 8 - GLOSSARY OF TERMS

Service Cost – The portion of the actuarial present value of projected benefit amounts that is attributed to a valuation year.

Substantive Plan – The terms of an OPEB plan as understood by the employer and plan members.

Total OPEB Liability – The portion of the actuarial present value of projected benefit amounts that is attributed to past periods of employee service.

Unfunded Actuarial Accrued Liability – The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	Town	School	Sewer	Water	Solid Waste	Airport	Total
Summary of Member Data Used in Valuation							
Active Members	471	1,085	4	19	4	8	1,591
Average Age	43.5	44.6	48.2	48.9	53.9	55.0	44.4
Average Service	10.8	9.5	11.9	10.4	9.4	13.6	9.9
Covered Payroll	25,895,794	68,042,694	243,213	829,337	134,439	403,857	95,549,335
Retired Members and Survivors	415	821	6	25	5	4	1,276
Average Age	68.4	70.9	78.7	70.1	72.2	73.9	70.1
Covered Spouses	257	461	1	11	2	1	733
Expected Benefit Payments	6,635,076	11,880,783	74,124	359,208	63,033	71,626	19,083,851
OPEB Trust contributions	358,178	661,468	1,735	14,926	2,079	2,862	1,041,248
Total Employer Contributions	6,993,254	12,542,251	75,859	374,134	65,112	74,488	20,125,099
Beginning Net OPEB Liability - June 30, 2019							
Total OPEB Liability	266,525,450	490,278,564	1,365,598	11,411,457	1,644,958	2,144,710	773,370,737
Fiduciary Net Position	1,684,938	3,371,308	9,911	69,881	11,979	15,505	5,163,522
Net OPEB Liability	264,840,512	486,907,256	1,355,687	11,341,576	1,632,979	2,129,205	768,207,215
Total OPEB Liability, beginning of year	266,525,450	490,278,564	1,365,598	11,411,457	1,644,958	2,144,710	773,370,737
Service cost	9,670,524	17,907,758	53,324	283,263	42,631	103,821	28,061,321
Interest	9,550,744	17,578,608	48,367	403,029	57,962	77,445	27,716,155
Changes of benefit terms	(11,834,694)	(20,007,258)	(28,304)	(326,357)	(21,259)	(56,546)	(32,274,418)
Differences between expected and actual experience	0	0	0	0	0	0	0
Changes of assumptions	74,696,352	137,665,396	291,678	2,838,709	323,971	534,693	216,350,799
Benefit payments	(6,635,076)	(11,880,784)	(74,124)	(359,208)	(63,033)	(71,626)	(19,083,851)
Net change in total OPEB liability	75,447,850	141,263,720	290,941	2,839,436	340,272	587,787	220,770,006
Total OPEB Liability, end of year	341,973,300	631,542,284	1,656,539	14,250,893	1,985,230	2,732,497	994,140,743
Ending Net OPEB Liability - June 30, 2020							
Total OPEB Liability	341,973,300	631,542,284	1,656,539	14,250,893	1,985,230	2,732,497	994,140,743
Fiduciary Net Position	2,264,157	4,181,353	10,968	94,353	13,144	18,091	6,582,066
Net OPEB Liability	339,709,143	627,360,931	1,645,571	14,156,540	1,972,086	2,714,406	987,558,677

SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	Town	School	Sewer	Water	Solid Waste	Airport	Total
Total Deferred Outflows of Resources							
Differences between Expected and Actual							
Experience	3,843,828	7,070,793	19,695	164,576	23,724	30,931	11,153,546
Changes in Assumptions	94,891,337	174,554,393	486,195	4,062,833	585,656	763,583	275,343,998
Differences between Expected and Actual							
Earnings on OPEB Plan Investments	0	0	0	0	0	0	0
Total Deferred Outflows of Resources	98,735,164	181,625,187	505,890	4,227,409	609,380	794,514	286,497,544
Total Deferred Inflows of Resources							
Differences between Expected and Actual							
Experience	0	0	0	0	0	0	0
Changes in Assumptions	5,094,356	9,371,164	26,102	218,118	31,442	40,994	14,782,176
Differences between Expected and Actual							
Earnings on OPEB Plan Investments	18,027	36,069	106	748	128	166	55,243
Total Deferred Inflows of Resources	5,112,383	9,407,233	26,208	218,866	31,570	41,160	14,837,419
Total OPEB Expense	23,863,054	46,011,672	133,081	738,167	118,853	266,147	71,130,974
Sensitivity of the Net OPEB Liability to Changes in the Discount Rate							
Current Discount Rate: 2.21%	339,709,143	627,360,931	1,645,571	14,156,540	1,972,086	2,714,406	987,558,677
1% Decrease in the Discount Rate: 1.21%	417,217,987	770,501,089	2,021,028	17,386,530	2,422,042	3,333,731	1,212,882,407
1% Increase in the Discount Rate: 3.21%	280,857,836	518,676,747	1,360,492	11,704,057	1,630,441	2,244,162	816,473,735
Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates							
Current Trend Rates	339,709,143	627,360,931	1,645,571	14,156,540	1,972,086	2,714,406	987,558,677
1% Decrease in Trend Rates	271,365,318	501,146,353	1,314,510	11,308,480	1,575,335	2,168,313	788,878,308
1% Increase in Trend Rates	432,967,701	799,587,016	2,097,321	18,042,860	2,513,472	3,459,578	1,258,667,948
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in OPEB Expense							
2021	16,545,832	30,435,852	84,774	708,425	102,116	133,139	48,010,138
2022	16,545,832	30,435,852	84,774	708,425	102,116	133,139	48,010,138
2023	17,177,765	31,598,289	88,011	735,481	106,016	138,224	49,843,786
2024	18,461,412	33,959,542	94,588	790,442	113,938	148,553	53,568,475
2025	16,607,338	30,548,995	85,089	711,058	102,495	133,634	48,188,609
Thereafter	8,284,602	15,239,423	42,447	354,713	51,130	66,664	24,038,979

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Under GASB 74 and GASB 75, a series of projections and calculations are used to determine the discount rate for the purpose of the measurement of the Total OPEB Liability. The discount rate is the single rate that reflects (1) the long-term expected rate of return on OPEB plan investments that are expected to be used to finance the payment of benefits, to the extent that the OPEB plan's fiduciary net position is projected to be sufficient to make projected benefit payments and OPEB plan assets are expected to be invested using a strategy to achieve that return, and (2) a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher, to the extent that the conditions for use of the long-term expected rate of return are not met.

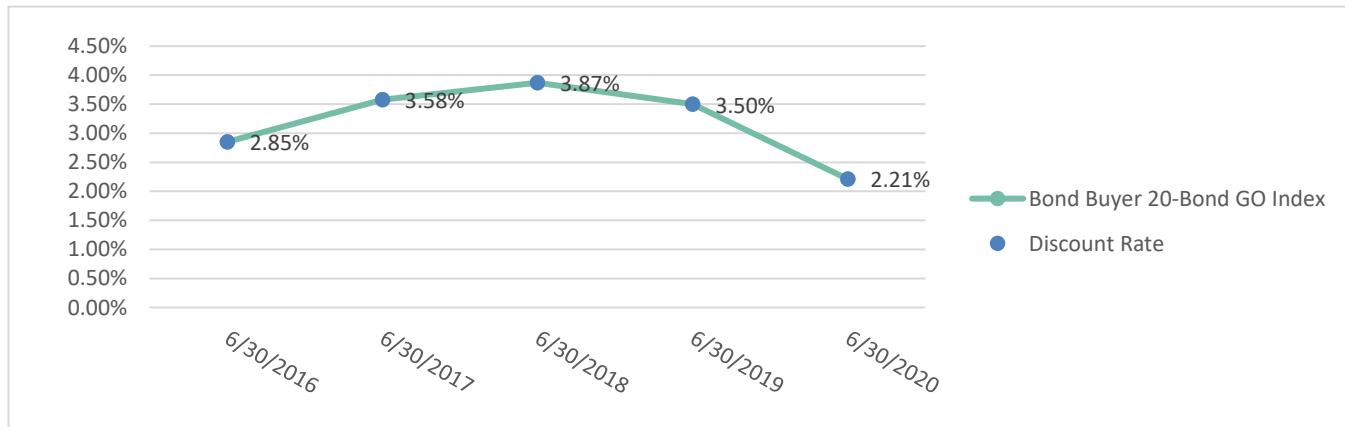
Projected cash flows into and out of the OPEB plan are assumed to be contributions to the OPEB plan, benefit payments, OPEB plan administrative expenses and OPEB plan investment earnings. These projected cash flows are used to project the OPEB plan's fiduciary net position at the beginning of each period. The OPEB plan's projected fiduciary net position at the beginning of each period is compared to the amount of benefit payments projected to occur in that period.

It is assumed that the OPEB plan's fiduciary net position is expected to always be invested using a strategy to achieve the long-term expected rate of return on OPEB plan investments.

The benefit payments that are projected to occur in a period are discounted using the long-term expected rate of return on OPEB plan investments if the amount of the OPEB plan's beginning fiduciary net position is projected to be sufficient to make the benefit payments in that period. In periods in which benefit payments are projected to be greater than the amount of the OPEB plan's fiduciary net position, they are discounted using a municipal bond rate as required by GASB 74.

For purposes of this valuation, liabilities are based on a discount rate of 2.21%, the rate that reflects a tax-exempt, high quality municipal bond rate. The municipal bond rate of 2.21% is based on the Bond Buyer 20-Bond GO Index published on June 30, 2020. The OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore the 2.21% municipal bond rate was applied to all periods to determine the total OPEB liability. Projected benefit payments are discounted to their actuarial present value using a single discount rate of 2.21%.

Below are the historical Bond Buyer 20-Bond GO Indices and the Town's discount rate used in disclosures since the implementation of GASB 74 and GASB 75:



APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 1: Projection of Contributions

Year	Projected Payroll			Projected Contributions			
	Payroll for Current Plan Members (a)	Payroll for Future Plan Members (b)	Total Payroll (c) = (a) + (b)	Employer Contributions (Benefit Payments) (d)	Employer Contributions (OPEB Trust) (e)	Employer Contributions Related to Payroll of Future Employees (f) = (b) * 37.79%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2020	103,370,639	-	103,370,639	19,083,851	1,041,248	-	20,125,099
2021	99,247,410	7,741,201	106,988,611	20,058,987	1,069,886	2,925,768	18,203,105
2022	95,629,453	15,103,759	110,733,212	21,347,632	1,107,332	5,708,428	16,746,536
2023	92,429,851	22,179,023	114,608,874	22,748,431	1,146,089	8,382,507	15,512,013
2024	89,313,184	29,307,001	118,620,185	24,107,803	1,186,202	11,076,508	14,217,497
2025	86,265,769	36,506,122	122,771,891	25,452,049	1,227,719	13,797,398	12,882,370
2026	82,974,244	44,094,663	127,068,907	26,884,848	1,270,689	16,665,468	11,490,069
2027	79,940,068	51,576,251	131,516,319	28,529,786	1,315,163	19,493,116	10,351,833
2028	76,645,155	59,474,235	136,119,390	29,915,791	1,361,194	22,478,139	8,798,846
2029	73,361,660	67,521,909	140,883,569	31,581,395	1,408,836	25,519,738	7,470,493
2030	69,880,292	75,934,202	145,814,494	33,625,721	1,458,145	28,699,143	6,384,723
2031	66,180,999	84,737,002	150,918,001	35,413,595	1,509,180	32,026,139	4,896,636
2032	62,358,943	93,841,188	156,200,131	37,010,347	1,562,001	35,467,044	3,105,304
2033	58,612,583	103,054,553	161,667,136	38,920,269	1,616,671	38,949,212	1,587,728
2034	54,981,050	112,344,436	167,325,486	40,583,322	1,673,255	42,460,300	-
2035	51,436,237	121,745,641	173,181,878	42,047,818	1,731,819	46,013,462	-
2036	47,882,782	131,360,462	179,243,244	43,516,407	1,792,432	49,647,360	-
2037	44,379,686	141,137,072	185,516,758	45,126,853	1,855,168	53,342,405	-
2038	41,069,156	150,940,689	192,009,845	46,324,756	1,920,098	57,047,658	-
2039	37,808,186	160,922,004	198,730,190	47,620,262	1,987,302	60,820,071	-
2040	34,495,445	171,190,302	205,685,747	48,841,070	2,056,857	64,700,949	-
2041	31,430,608	181,454,140	212,884,748	49,766,033	2,128,847	68,580,141	-
2042	28,467,927	191,867,787	220,335,714	51,108,279	2,203,357	72,515,953	-
2043	25,666,023	202,381,441	228,047,464	52,494,228	2,280,475	76,489,562	-
2044	22,930,469	213,098,656	236,029,125	53,117,518	2,360,291	80,540,107	-
2045	20,510,628	223,779,516	244,290,144	54,112,500	2,442,901	84,576,912	-
2046	18,200,980	234,639,319	252,840,299	55,090,712	2,528,403	88,681,347	-
2047	16,095,658	245,594,051	261,689,709	55,512,010	2,616,897	92,821,661	-
2048	14,338,364	256,510,485	270,848,849	55,832,621	2,708,488	96,947,500	-
2049	12,566,807	267,761,752	280,328,559	56,329,138	2,803,286	101,199,888	-
2050	10,956,804	279,183,255	290,140,059	56,233,535	2,901,401	105,516,617	-
2051	9,477,543	290,817,418	300,294,961	55,980,936	3,002,950	109,913,720	-
2052	8,072,222	302,733,063	310,805,285	55,931,863	3,108,053	114,417,208	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 1: Projection of Contributions

Year	Projected Payroll			Projected Contributions			
	Payroll for Current Plan Members (a)	Payroll for Future Plan Members (b)	Total Payroll (c) = (a) + (b)	Employer Contributions (Benefit Payments) (d)	Employer Contributions (OPEB Trust) (e)	Employer Contributions Related to Payroll of Future Employees (f) = (b) * 37.79%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2053	6,718,555	314,964,915	321,683,470	55,667,917	3,216,835	119,040,207	-
2054	5,468,944	327,473,447	332,942,391	55,522,078	3,329,424	123,767,775	-
2055	4,307,605	340,287,770	344,595,375	55,281,750	3,445,954	128,610,917	-
2056	3,350,852	353,305,361	356,656,213	54,768,643	3,566,562	133,530,883	-
2057	2,476,792	366,662,388	369,139,180	54,489,047	3,691,392	138,579,138	-
2058	1,791,466	380,267,585	382,059,051	54,126,130	3,820,591	143,721,188	-
2059	1,282,480	394,148,638	395,431,118	53,292,634	3,954,311	148,967,498	-
2060	874,532	408,396,675	409,271,207	52,884,053	4,092,712	154,352,508	-
2061	619,959	422,975,740	423,595,699	52,312,149	4,235,957	159,862,629	-
2062	388,535	438,033,013	438,421,548	51,681,835	4,384,215	165,553,488	-
2063	245,554	453,520,748	453,766,302	51,362,109	4,537,663	171,407,039	-
2064	161,218	469,486,905	469,648,123	50,915,158	4,696,481	177,441,408	-
2065	86,890	485,998,917	486,085,807	50,489,812	4,860,858	183,682,082	-
2066	41,796	503,057,014	503,098,810	50,166,344	5,030,988	190,129,148	-
2067	15,992	520,691,276	520,707,268	49,580,948	5,207,073	196,793,973	-
2068	2,435	538,929,587	538,932,022	48,912,865	5,389,320	203,687,097	-
2069	1,713	557,792,930	557,794,643	48,124,909	5,577,946	210,816,451	-
2070	-	577,317,456	577,317,456	47,146,386	5,773,175	218,195,697	-
2071	-	597,523,567	597,523,567	46,154,567	5,975,236	225,832,547	-
2072	-	618,436,892	618,436,892	44,941,098	6,184,369	233,736,686	-
2073	-	640,082,183	640,082,183	43,631,341	6,400,822	241,917,470	-
2074	-	662,485,059	662,485,059	42,178,502	6,624,851	250,384,581	-
2075	-	685,672,036	685,672,036	40,627,943	6,856,720	259,148,041	-
2076	-	709,670,557	709,670,557	39,051,467	7,096,706	268,218,223	-
2077	-	734,509,026	734,509,026	37,274,734	7,345,090	277,605,860	-
2078	-	760,216,842	760,216,842	35,445,607	7,602,168	287,322,065	-
2079	-	786,824,431	786,824,431	33,598,077	7,868,244	297,378,337	-
2080	-	814,363,286	814,363,286	31,610,747	8,143,633	307,786,579	-
2081	-	842,866,001	842,866,001	29,648,298	8,428,660	318,559,109	-
2082	-	872,366,311	872,366,311	27,613,011	8,723,663	329,708,678	-
2083	-	902,899,132	902,899,132	25,557,334	9,028,991	341,248,482	-
2084	-	934,500,602	934,500,602	23,542,284	9,345,006	353,192,179	-
2085	-	967,208,123	967,208,123	21,482,034	9,672,081	365,553,905	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 1: Projection of Contributions

Year	Projected Payroll			Projected Contributions			
	Payroll for Current Plan Members (a)	Payroll for Future Plan Members (b)	Total Payroll (c) = (a) + (b)	Employer Contributions (Benefit Payments) (d)	Employer Contributions (OPEB Trust) (e)	Employer Contributions Related to Payroll of Future Employees (f) = (b) * 37.79%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2086	-	1,001,060,407	1,001,060,407	19,475,967	10,010,604	378,348,292	-
2087	-	1,036,097,521	1,036,097,521	17,489,804	10,360,975	391,590,482	-
2088	-	1,072,360,934	1,072,360,934	15,569,291	10,723,609	405,296,149	-
2089	-	1,109,893,567	1,109,893,567	13,739,563	11,098,936	419,481,514	-
2090	-	1,148,739,842	1,148,739,842	12,013,021	11,487,398	434,163,367	-
2091	-	1,188,945,736	1,188,945,736	10,390,912	11,889,457	449,359,085	-
2092	-	1,230,558,837	1,230,558,837	8,891,516	12,305,588	465,086,653	-
2093	-	1,273,628,396	1,273,628,396	7,520,177	12,736,284	481,364,686	-
2094	-	1,318,205,390	1,318,205,390	6,284,784	13,182,054	498,212,450	-
2095	-	1,364,342,579	1,364,342,579	5,187,567	13,643,426	515,649,886	-
2096	-	1,412,094,569	1,412,094,569	4,226,596	14,120,946	533,697,631	-
2097	-	1,461,517,879	1,461,517,879	3,393,368	14,615,179	552,377,049	-
2098	-	1,512,671,005	1,512,671,005	2,682,958	15,126,710	571,710,245	-
2099	-	1,565,614,490	1,565,614,490	2,086,524	15,656,145	591,720,104	-
2100	-	1,620,410,997	1,620,410,997	1,594,527	16,204,110	612,430,307	-
2101	-	1,677,125,382	1,677,125,382	1,196,031	16,771,254	633,865,368	-
2102	-	1,735,824,770	1,735,824,770	879,526	17,358,248	656,050,656	-
2103	-	1,796,578,637	1,796,578,637	633,303	17,965,786	679,012,429	-
2104	-	1,859,458,889	1,859,458,889	445,951	18,594,589	702,777,864	-
2105	-	1,924,539,950	1,924,539,950	306,696	19,245,400	727,375,089	-
2106	-	1,991,898,848	1,991,898,848	205,721	19,918,988	752,833,217	-
2107	-	2,061,615,308	2,061,615,308	134,389	20,616,153	779,182,380	-
2108	-	2,133,771,844	2,133,771,844	85,458	21,337,718	806,453,763	-
2109	-	2,208,453,859	2,208,453,859	52,803	22,084,539	834,679,645	-
2110	-	2,285,749,744	2,285,749,744	31,659	22,857,497	863,893,433	-
2111	-	2,365,750,985	2,365,750,985	18,408	23,657,510	894,129,703	-
2112	-	2,448,552,269	2,448,552,269	10,352	24,485,523	925,424,242	-
2113	-	2,534,251,598	2,534,251,598	5,654	25,342,516	957,814,091	-
2114	-	2,622,950,404	2,622,950,404	2,996	26,229,504	991,337,584	-
2115	-	2,714,753,668	2,714,753,668	1,518	27,147,537	1,026,034,399	-
2116	-	2,809,770,046	2,809,770,046	759	28,097,700	1,061,945,603	-
2117	-	2,908,111,998	2,908,111,998	353	29,081,120	1,099,113,699	-
2118	-	3,009,895,918	3,009,895,918	155	30,098,959	1,137,582,679	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 1: Projection of Contributions

Year	Projected Payroll			Projected Contributions			
	Payroll for Current Plan Members (a)	Payroll for Future Plan Members (b)	Total Payroll (c) = (a) + (b)	Employer Contributions (Benefit Payments) (d)	Employer Contributions (OPEB Trust) (e)	Employer Contributions Related to Payroll of Future Employees (f) = (b) * 37.79%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2119	-	3,115,242,275	3,115,242,275	66	31,152,423	1,177,398,072	-
2120	-	3,224,275,755	3,224,275,755	20	32,242,758	1,218,607,005	-
2121	-	3,337,125,406	3,337,125,406	4	33,371,254	1,261,258,250	-
2122	-	3,453,924,795	3,453,924,795	2	34,539,248	1,305,402,289	-
2123	-	3,574,812,163	3,574,812,163	-	35,748,122	1,351,091,369	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 2: Projection of the OPEB Plan's Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2020	5,163,522	20,125,099	19,083,851	-	377,296	6,582,066
2021	6,582,066	18,203,105	20,058,987	-	339,248	5,065,432
2022	5,065,432	16,746,536	21,347,632	-	165,893	630,229
2023	630,229	15,512,013	22,748,431	-	-	-
2024	-	14,217,497	24,107,803	-	-	-
2025	-	12,882,370	25,452,049	-	-	-
2026	-	11,490,069	26,884,848	-	-	-
2027	-	10,351,833	28,529,786	-	-	-
2028	-	8,798,846	29,915,791	-	-	-
2029	-	7,470,493	31,581,395	-	-	-
2030	-	6,384,723	33,625,721	-	-	-
2031	-	4,896,636	35,413,595	-	-	-
2032	-	3,105,304	37,010,347	-	-	-
2033	-	1,587,728	38,920,269	-	-	-
2034	-	-	40,583,322	-	-	-
2035	-	-	42,047,818	-	-	-
2036	-	-	43,516,407	-	-	-
2037	-	-	45,126,853	-	-	-
2038	-	-	46,324,756	-	-	-
2039	-	-	47,620,262	-	-	-
2040	-	-	48,841,070	-	-	-
2041	-	-	49,766,033	-	-	-
2042	-	-	51,108,279	-	-	-
2043	-	-	52,494,228	-	-	-
2044	-	-	53,117,518	-	-	-
2045	-	-	54,112,500	-	-	-
2046	-	-	55,090,712	-	-	-
2047	-	-	55,512,010	-	-	-
2048	-	-	55,832,621	-	-	-
2049	-	-	56,329,138	-	-	-
2050	-	-	56,233,535	-	-	-
2051	-	-	55,980,936	-	-	-
2052	-	-	55,931,863	-	-	-
2053	-	-	55,667,917	-	-	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 2: Projection of the OPEB Plan's Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2054	-	-	55,522,078	-	-	-
2055	-	-	55,281,750	-	-	-
2056	-	-	54,768,643	-	-	-
2057	-	-	54,489,047	-	-	-
2058	-	-	54,126,130	-	-	-
2059	-	-	53,292,634	-	-	-
2060	-	-	52,884,053	-	-	-
2061	-	-	52,312,149	-	-	-
2062	-	-	51,681,835	-	-	-
2063	-	-	51,362,109	-	-	-
2064	-	-	50,915,158	-	-	-
2065	-	-	50,489,812	-	-	-
2066	-	-	50,166,344	-	-	-
2067	-	-	49,580,948	-	-	-
2068	-	-	48,912,865	-	-	-
2069	-	-	48,124,909	-	-	-
2070	-	-	47,146,386	-	-	-
2071	-	-	46,154,567	-	-	-
2072	-	-	44,941,098	-	-	-
2073	-	-	43,631,341	-	-	-
2074	-	-	42,178,502	-	-	-
2075	-	-	40,627,943	-	-	-
2076	-	-	39,051,467	-	-	-
2077	-	-	37,274,734	-	-	-
2078	-	-	35,445,607	-	-	-
2079	-	-	33,598,077	-	-	-
2080	-	-	31,610,747	-	-	-
2081	-	-	29,648,298	-	-	-
2082	-	-	27,613,011	-	-	-
2083	-	-	25,557,334	-	-	-
2084	-	-	23,542,284	-	-	-
2085	-	-	21,482,034	-	-	-
2086	-	-	19,475,967	-	-	-
2087	-	-	17,489,804	-	-	-
2088	-	-	15,569,291	-	-	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 2: Projection of the OPEB Plan's Fiduciary Net Position

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2089	-	-	13,739,563	-	-	-
2090	-	-	12,013,021	-	-	-
2091	-	-	10,390,912	-	-	-
2092	-	-	8,891,516	-	-	-
2093	-	-	7,520,177	-	-	-
2094	-	-	6,284,784	-	-	-
2095	-	-	5,187,567	-	-	-
2096	-	-	4,226,596	-	-	-
2097	-	-	3,393,368	-	-	-
2098	-	-	2,682,958	-	-	-
2099	-	-	2,086,524	-	-	-
2100	-	-	1,594,527	-	-	-
2101	-	-	1,196,031	-	-	-
2102	-	-	879,526	-	-	-
2103	-	-	633,303	-	-	-
2104	-	-	445,951	-	-	-
2105	-	-	306,696	-	-	-
2106	-	-	205,721	-	-	-
2107	-	-	134,389	-	-	-
2108	-	-	85,458	-	-	-
2109	-	-	52,803	-	-	-
2110	-	-	31,659	-	-	-
2111	-	-	18,408	-	-	-
2112	-	-	10,352	-	-	-
2113	-	-	5,654	-	-	-
2114	-	-	2,996	-	-	-
2115	-	-	1,518	-	-	-
2116	-	-	759	-	-	-
2117	-	-	353	-	-	-
2118	-	-	155	-	-	-
2119	-	-	66	-	-	-
2120	-	-	20	-	-	-
2121	-	-	4	-	-	-
2122	-	-	2	-	-	-
2123	-	-	-	-	-	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 3: Actuarial Present Value of Projected Benefit Payments - End of Measurement Period

Year	Projected Benefit Payments			Actuarial Present Value of Projected Benefit Payments			
	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments (b)	"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g) = 2.21%
2021	6,582,066	20,058,987	-	20,058,987	-	19,840,943	19,840,943
2022	5,065,432	21,347,632	-	21,347,632	-	20,659,016	20,659,016
2023	630,229	22,748,431	-	22,748,431	-	21,538,625	21,538,625
2024	-	24,107,803	-	24,107,803	-	22,332,162	22,332,162
2025	-	25,452,049	-	25,452,049	-	23,067,605	23,067,605
2026	-	26,884,848	-	26,884,848	-	23,839,325	23,839,325
2027	-	28,529,786	-	28,529,786	-	24,750,928	24,750,928
2028	-	29,915,791	-	29,915,791	-	25,392,185	25,392,185
2029	-	31,581,395	-	31,581,395	-	26,226,329	26,226,329
2030	-	33,625,721	-	33,625,721	-	27,320,234	27,320,234
2031	-	35,413,595	-	35,413,595	-	28,150,716	28,150,716
2032	-	37,010,347	-	37,010,347	-	28,783,870	28,783,870
2033	-	38,920,269	-	38,920,269	-	29,614,778	29,614,778
2034	-	40,583,322	-	40,583,322	-	30,212,513	30,212,513
2035	-	42,047,818	-	42,047,818	-	30,625,933	30,625,933
2036	-	43,516,407	-	43,516,407	-	31,010,267	31,010,267
2037	-	45,126,853	-	45,126,853	-	31,462,566	31,462,566
2038	-	46,324,756	-	46,324,756	-	31,599,401	31,599,401
2039	-	47,620,262	-	47,620,262	-	31,780,747	31,780,747
2040	-	48,841,070	-	48,841,070	-	31,890,703	31,890,703
2041	-	49,766,033	-	49,766,033	-	31,792,052	31,792,052
2042	-	51,108,279	-	51,108,279	-	31,943,567	31,943,567
2043	-	52,494,228	-	52,494,228	-	32,100,391	32,100,391
2044	-	53,117,518	-	53,117,518	-	31,779,214	31,779,214
2045	-	54,112,500	-	54,112,500	-	31,674,487	31,674,487
2046	-	55,090,712	-	55,090,712	-	31,549,827	31,549,827
2047	-	55,512,010	-	55,512,010	-	31,103,708	31,103,708
2048	-	55,832,621	-	55,832,621	-	30,606,935	30,606,935
2049	-	56,329,138	-	56,329,138	-	30,211,448	30,211,448
2050	-	56,233,535	-	56,233,535	-	29,508,045	29,508,045
2051	-	55,980,936	-	55,980,936	-	28,740,334	28,740,334
2052	-	55,931,863	-	55,931,863	-	28,094,257	28,094,257

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 3: Actuarial Present Value of Projected Benefit Payments - End of Measurement Period

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments (b)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g) = 2.21%
2053	-	55,667,917	-	55,667,917	-	27,357,087	27,357,087
2054	-	55,522,078	-	55,522,078	-	26,695,447	26,695,447
2055	-	55,281,750	-	55,281,750	-	26,005,181	26,005,181
2056	-	54,768,643	-	54,768,643	-	25,206,741	25,206,741
2057	-	54,489,047	-	54,489,047	-	24,535,818	24,535,818
2058	-	54,126,130	-	54,126,130	-	23,845,417	23,845,417
2059	-	53,292,634	-	53,292,634	-	22,970,568	22,970,568
2060	-	52,884,053	-	52,884,053	-	22,301,593	22,301,593
2061	-	52,312,149	-	52,312,149	-	21,583,424	21,583,424
2062	-	51,681,835	-	51,681,835	-	20,862,306	20,862,306
2063	-	51,362,109	-	51,362,109	-	20,284,946	20,284,946
2064	-	50,915,158	-	50,915,158	-	19,673,639	19,673,639
2065	-	50,489,812	-	50,489,812	-	19,087,453	19,087,453
2066	-	50,166,344	-	50,166,344	-	18,555,099	18,555,099
2067	-	49,580,948	-	49,580,948	-	17,942,059	17,942,059
2068	-	48,912,865	-	48,912,865	-	17,317,578	17,317,578
2069	-	48,124,909	-	48,124,909	-	16,670,192	16,670,192
2070	-	47,146,386	-	47,146,386	-	15,978,120	15,978,120
2071	-	46,154,567	-	46,154,567	-	15,303,775	15,303,775
2072	-	44,941,098	-	44,941,098	-	14,579,216	14,579,216
2073	-	43,631,341	-	43,631,341	-	13,848,275	13,848,275
2074	-	42,178,502	-	42,178,502	-	13,097,695	13,097,695
2075	-	40,627,943	-	40,627,943	-	12,343,411	12,343,411
2076	-	39,051,467	-	39,051,467	-	11,607,917	11,607,917
2077	-	37,274,734	-	37,274,734	-	10,840,220	10,840,220
2078	-	35,445,607	-	35,445,607	-	10,085,388	10,085,388
2079	-	33,598,077	-	33,598,077	-	9,353,006	9,353,006
2080	-	31,610,747	-	31,610,747	-	8,609,504	8,609,504
2081	-	29,648,298	-	29,648,298	-	7,900,413	7,900,413
2082	-	27,613,011	-	27,613,011	-	7,198,970	7,198,970
2083	-	25,557,334	-	25,557,334	-	6,518,967	6,518,967
2084	-	23,542,284	-	23,542,284	-	5,875,143	5,875,143

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 3: Actuarial Present Value of Projected Benefit Payments - End of Measurement Period

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments (b)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g) = 2.21%
2085	-	21,482,034	-	21,482,034	-	5,245,077	5,245,077
2086	-	19,475,967	-	19,475,967	-	4,652,454	4,652,454
2087	-	17,489,804	-	17,489,804	-	4,087,659	4,087,659
2088	-	15,569,291	-	15,569,291	-	3,560,124	3,560,124
2089	-	13,739,563	-	13,739,563	-	3,073,802	3,073,802
2090	-	12,013,021	-	12,013,021	-	2,629,431	2,629,431
2091	-	10,390,912	-	10,390,912	-	2,225,204	2,225,204
2092	-	8,891,516	-	8,891,516	-	1,862,939	1,862,939
2093	-	7,520,177	-	7,520,177	-	1,541,549	1,541,549
2094	-	6,284,784	-	6,284,784	-	1,260,452	1,260,452
2095	-	5,187,567	-	5,187,567	-	1,017,903	1,017,903
2096	-	4,226,596	-	4,226,596	-	811,409	811,409
2097	-	3,393,368	-	3,393,368	-	637,363	637,363
2098	-	2,682,958	-	2,682,958	-	493,033	493,033
2099	-	2,086,524	-	2,086,524	-	375,139	375,139
2100	-	1,594,527	-	1,594,527	-	280,484	280,484
2101	-	1,196,031	-	1,196,031	-	205,838	205,838
2102	-	879,526	-	879,526	-	148,094	148,094
2103	-	633,303	-	633,303	-	104,329	104,329
2104	-	445,951	-	445,951	-	71,877	71,877
2105	-	306,696	-	306,696	-	48,363	48,363
2106	-	205,721	-	205,721	-	31,739	31,739
2107	-	134,389	-	134,389	-	20,285	20,285
2108	-	85,458	-	85,458	-	12,621	12,621
2109	-	52,803	-	52,803	-	7,629	7,629
2110	-	31,659	-	31,659	-	4,475	4,475
2111	-	18,408	-	18,408	-	2,546	2,546
2112	-	10,352	-	10,352	-	1,401	1,401
2113	-	5,654	-	5,654	-	749	749
2114	-	2,996	-	2,996	-	388	388
2115	-	1,518	-	1,518	-	192	192
2116	-	759	-	759	-	94	94

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 3: Actuarial Present Value of Projected Benefit Payments - End of Measurement Period

Year	Projected Benefit Payments				Actuarial Present Value of Projected Benefit Payments			Present Value of Benefit Payments Using the Single Discount Rate (g) = 2.21%
	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments (b)	"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)		
2117	-	353	-	353	-	43		43
2118	-	155	-	155	-	18		18
2119	-	66	-	66	-	8		8
2120	-	20	-	20	-	2		2
2121	-	4	-	4	-	-		-
2122	-	2	-	2	-	-		-
2123	-	-	-	-	-	-		-

APPENDIX B - SCHEDULE OF DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF RESOURCES

Year	Differences between Expected and Actual Experience	Recognition Period (Years)										
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2018	-	5.67	-	-	-	-	-	-	-	-	-	-
2019	15,849,776	6.75	2,348,115	2,348,115	2,348,115	2,348,115	2,348,115	1,761,086	-	-	-	-
2020	-	6.75	-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			2,348,115	2,348,115	2,348,115	2,348,115	2,348,115	1,761,086	-	-	-	-
Year	Changes of Assumptions	Recognition Period (Years)										
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2018	(31,391,364)	5.67	(5,536,396)	(5,536,396)	(5,536,396)	(3,709,384)	-	-	-	-	-	-
2019	129,379,977	6.75	19,167,404	19,167,404	19,167,404	19,167,404	19,167,404	14,375,553	-	-	-	-
2020	216,350,799	6.75	32,051,970	32,051,970	32,051,970	32,051,970	32,051,970	32,051,970	24,038,979	-	-	-
Net Increase (Decrease) in OPEB Expense			45,682,978	45,682,978	45,682,978	47,509,990	51,219,374	46,427,523	24,038,979	-	-	-
Year	Projected and Actual Earnings on OPEB Plan Investments	Recognition Period (Years)										
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2018	(33,167)	5	(6,633)	(6,634)	(6,634)	-	-	-	-	-	-	-
2019	(76,529)	5	(15,306)	(15,306)	(15,306)	(15,305)	-	-	-	-	-	-
2020	4,927	5	985	985	985	986	986	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			(20,954)	(20,955)	(20,955)	(14,319)	986	-	-	-	-	-