



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, 2022**

KMS Actuaries, LLC
52 Hunt Road
Kingston, NH 03848

December, 2022



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

December 22, 2022

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

Dear Lynne:

We are pleased to present the enclosed report of the July 1, 2020 actuarial valuation of the retiree health care benefits for the Town of Plymouth. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2022 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)

Results are based on liabilities developed in an actuarial valuation performed as of July 1, 2020 and rolled forward to the plan's measurement date of June 30, 2022.

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 as well as health plan rates provided by the Town as of July 1, 2021. 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 3.54%, the rate that reflects a tax-exempt, high quality municipal bond rate. The municipal bond rate of 3.54% is based on the Bond Buyer 20-Bond GO Index published on June 30, 2022.

Ms. Lynne A. Barrett

December 22, 2022

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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 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.

KMS Actuaries is completely independent of the Town of Plymouth and any of its officers or key personnel. None of the actuaries signing this report or anyone closely associated with them has a relationship with the Town of Plymouth, other than as consulting actuary for this assignment, that would impair our independence.

Respectfully submitted,



Linda L. Bournival, FSA, EA

Member, American Academy of Actuaries

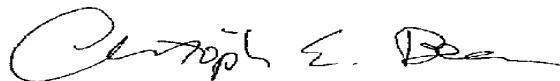
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EXECUTIVE SUMMARY

Purpose of Report

This report presents the results of the actuarial valuation of the Town of Plymouth's retiree health care benefits as of July 1, 2020. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2022 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. 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.

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 Other Postemployment Benefits Program

The Town of Plymouth 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, 2022	June 30, 2021	% Change
Valuation Date	July 1, 2020	July 1, 2020	
Membership Data			
Active Plan Members	1,624	1,596	1.8%
Inactive Plan Members (excludes covered spouses)	1,392	1,326	5.0%
Total Plan Members	3,016	2,922	3.2%
Covered Spouses	790	838	(5.7%)
Covered Payroll	\$118,519,409	\$117,913,268	0.5%
Net OPEB Liability			
Discount Rate	3.54%	2.16%	
Total OPEB Liability (TOL)	\$766,749,426	\$949,808,155	(19.3%)
Fiduciary Net Position (FNP)	\$8,587,208	\$8,619,502	(0.4%)
Net OPEB Liability	\$758,162,218	\$941,188,653	(19.4%)
FNP as % of TOL	1.1%	0.9%	
OPEB Expense			
OPEB Expense	\$62,441,780	\$89,204,157	(30.0%)
Deferred Outflows	\$180,026,793	\$232,930,055	
Deferred Inflows	\$248,141,538	\$77,012,161	
Recognition Period	6.78	6.78	

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 2.16% as of June 30, 2021 to 3.54% as of June 30, 2022. 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:

◆ Decrease due to change in Inflation Assumption	(5,679,000)
◆ Decrease due to change in Discount Rate	(216,185,000)
Total	\$ (221,864,000)

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

Changes of Benefit Terms

All 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, 2022, is \$766,749,426. The Total OPEB Liability as of the prior measurement date, June 30, 2021, was \$949,808,155. During the current measurement period ending June 30, 2022, the Total OPEB Liability decreased by \$183,058,729, or -19.3%. 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, 2022, is \$8,587,208. The Fiduciary Net Position as of the prior measurement date, June 30, 2021, was \$8,619,502. During the plan years ended June 30, 2022 and June 30, 2021, the actual rates of return were -12.10% and 21.56%, respectively. The expected long-term rate of return is 5.75%. The Fiduciary Net Position is shown in Section 1, Exhibit 1.1.

Employer Future Period Contributions

The Town's funding policy is to contribute an amount equal to at least 1% of covered payroll each year.

EXECUTIVE SUMMARY

Discount Rate

As of the June 30, 2022 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 3.54% 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 3.54%.

OPEB Expense

The OPEB Expense for the current measurement period ending June 30, 2022, is \$62,441,780. Benefit changes are recognized immediately and experience gains and losses and assumption changes developed in this valuation are recognized over 6.78 years. Investment gains and losses are recognized over 5 years. The OPEB Expense for the prior measurement period was \$89,204,157. 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 impact 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	2022	2021
Trust Fund Composition at Fiscal Year-End		
Domestic Equities	\$3,649,508	\$4,082,988
International Equities	1,554,739	1,557,427
Fixed Income	3,382,961	2,979,045
Other	-	42
Total Market Value of Assets	\$8,587,208	\$8,619,502
Asset Activity		
Market value, beginning of year	\$8,619,502	\$6,582,066
Employer Premiums	20,322,457	19,306,442
OPEB Trust Contributions	1,113,119	525,508
Benefit Payments	(20,322,457)	(19,306,442)
Administrative Expenses	-	-
Investment Return	(1,145,413)	1,511,928
Market value, end of year	\$8,587,208	\$8,619,502
Money-Weighted Rate of Return	-12.10%	21.56%
(Gain) / Loss on OPEB Plan Investments		
Projected earnings	\$519,681	\$421,071
Actual earnings	(1,145,413)	1,511,928
(Gain) / Loss on OPEB plan investments	\$1,665,094	(\$1,090,857)

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, 2022 measurement date was developed from an actuarial valuation as of July 1, 2020 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, 2021 to the end of the measurement period, June 30, 2022 is shown below:

Measurement Date	June 30, 2022
1. Total OPEB Liability, beginning of year:	
a. Actives	\$448,190,334
b. Retirees, Covered Spouses and Survivors	501,617,821
c. Total OPEB Liability at 2.16% (a. + b.)	\$949,808,155
2. Service Cost	\$38,009,669
3. Expected Benefit Payments	
a. Current retirees	(\$18,922,752)
b. Future retirees	(1,399,705)
c. Total (a. + b.)	(\$20,322,457)
4. Interest [2.16% x (1.c. + 2. + .5 x 3.c.)]	\$21,117,382
5. Changes of benefit terms	\$0
6. Differences between expected and actual experience	\$0
7. Changes of assumptions or other inputs	(\$221,863,323)
8. Total OPEB Liability, end of year (1.c. + 2. + 3.c. + 4. + 5. + 6. + 7.)	
a. Actives	\$358,078,989
b. Retirees, Covered Spouses and Survivors	408,670,437
c. Total OPEB Liability at 3.54% (a. + b.)	\$766,749,426

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.

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, 2022	June 30, 2023
Discount Rate	2.16%	3.54%
1. Normal Cost	\$38,009,669	\$25,374,857
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$949,808,155	\$766,749,426
b. Actuarial Value of Plan Assets	\$8,619,502	\$8,587,208
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$941,188,653	\$758,162,218
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$941,188,653	\$758,162,218
b. Amortization Period in years	30	30
c. Payroll Growth Rate	3.5%	3.5%
d. Amortization Factor	36.47	29.83
e. Amortization Amount (3.a. / 3.d.)	\$25,807,202	\$25,416,098
4. Interest on 1. and 3.e.	\$1,378,444	\$1,798,000
5. Actuarially Determined Employer Contribution (1. + 3.e. + 4.)	\$65,195,315	\$52,588,955
6. Actual Employer Contribution to OPEB Trust	\$1,113,119	TBD
7. Expected Benefit Payments	\$20,322,457	
8. Total Contribution (6. + 7.)	\$21,435,576	

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.1 - Plan Description

Plan Administration

The Town of Plymouth 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, 2022, OPEB plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefit payments ¹	1,392
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	1,624
	<hr/>
	3,016
	<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.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

The components of the net OPEB liability at June 30, 2022, were as follows:

Total OPEB liability	\$ 766,749,426
Fiduciary net position	(8,587,208)
Net OPEB liability	\$ 758,162,218

Fiduciary net position as a percentage of the total OPEB liability 1.12%

Actuarial Assumptions

The total OPEB liability was determined by an actuarial valuation as of July 1, 2020, rolled forward to the measurement date and using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.4% per year, based on current economic data, analyses from economists and other experts, and professional judgment.
Discount rate	3.54 percent, net of investment expenses, including inflation.
Healthcare cost trend rate	7 percent for 2020, decreasing 0.4 percent per year to 5.4 percent, then grading down to an ultimate trend rate of 4 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 Mortality Table projected generationally with Scale MP-2018.
Healthy Retiree Mortality - General and Public Safety employees	RP-2014 Blue Collar Healthy Annuitant Table projected generationally with Scale MP-2018.
Disabled Retiree Mortality - General and Public Safety employees	RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2020
Pre-Retirement Mortality - Teachers	PUB-2010 Teachers Headcount-Weighted Employee Mortality Table, base year 2010, projected with generational mortality using Scale MP-2020.
Healthy Retiree Mortality - Teachers	PUB-2010 Teachers Headcount-Weighted Retiree Mortality Table, base year 2010, projected with generational mortality using Scale MP-2020.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

Disabled Retiree Mortality - Teachers

PUB-2010 Teachers Headcount-Weighted Disabled Mortality Table, base year 2010, projected with generational mortality using Scale MP-2020.

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, 2022 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rates of Return ¹
Domestic Equities	40%	4.30%
International Equities	20%	5.25%
Fixed Income	40%	1.35%
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, 2022 Edition" and professional judgement.

Discount Rate

The discount rate used to measure the total OPEB liability was 3.54%. 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 3.54% 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 3.54 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (2.54 percent) or 1-percentage point higher (4.54 percent) than the current rate:

	1% Decrease (2.54%)	Assumed Discount Rate (3.54%)	1% Increase (4.54%)
Total OPEB Liability	\$ 915,459,809	\$ 766,749,426	\$ 650,991,756
Fiduciary Net Position	(8,587,208)	(8,587,208)	(8,587,208)
Net OPEB Liability	\$ 906,872,601	\$ 758,162,218	\$ 642,404,548
% Change in NOL	19.6%		-15.3%

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 (6% year 1 decreasing to 3%) or 1-percentage point higher (8% year 1 decreasing to 5%) than the current healthcare cost trend rates:

	1% Decrease 6% Year 1 Decreasing to 3%	Assumed Healthcare Cost Trend Rates 7% Year 1 Decreasing to 4%	1% Increase 8% Year 1 Decreasing to 5%
Total OPEB Liability	\$ 631,956,595	\$ 766,749,426	\$ 945,888,247
Fiduciary Net Position	(8,587,208)	(8,587,208)	(8,587,208)
Net OPEB Liability	\$ 623,369,387	\$ 758,162,218	\$ 937,301,039
% Change in NOL	-17.8%		23.6%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30	2022	2021	2020	2019	2018
Total OPEB Liability					
Service cost	\$ 38,009,669	\$ 40,436,080	\$ 28,061,321	\$ 21,914,725	\$ 23,038,206
Interest	21,117,382	22,650,812	27,716,155	23,742,073	22,140,028
Changes of benefit terms	-	(9,686,259)	(32,274,418)	-	-
Differences between expected and actual experience	-	(52,938,875)	-	15,849,776	-
Changes of assumptions	(221,863,323)	(25,487,904)	216,350,799	129,379,977	(31,391,364)
Benefit payments	(20,322,457)	(19,306,442)	(19,083,851)	(18,182,695)	(17,036,667)
Net change in total OPEB liability	\$(183,058,729)	\$ (44,332,588)	\$220,770,006	\$ 172,703,856	\$ (3,249,797)
Total OPEB liability—beginning	\$ 949,808,155	\$994,140,743	\$773,370,737	\$ 600,666,881	\$ 603,916,678
Total OPEB liability—ending (a)	<u>\$ 766,749,426</u>	<u>\$949,808,155</u>	<u>\$994,140,743</u>	<u>\$ 773,370,737</u>	<u>\$ 600,666,881</u>
Plan Fiduciary Net Position					
Contributions—employer	\$ 21,435,576	\$ 19,831,950	\$ 20,125,099	\$ 19,153,288	\$ 17,980,980
Net investment income	(1,145,413)	1,511,928	377,296	370,873	228,269
Benefit payments	(20,322,457)	(19,306,442)	(19,083,851)	(18,182,695)	(17,036,667)
Administrative expenses	-	-	-	-	-
Other	-	-	-	-	-
Net change in plan fiduciary net position	\$ (32,294)	\$ 2,037,436	\$ 1,418,544	\$ 1,341,466	\$ 1,172,582
Plan fiduciary net position—beginning	\$ 8,619,502	\$ 6,582,066	\$ 5,163,522	\$ 3,822,056	\$ 2,649,474
Plan fiduciary net position—ending (b)	<u>\$ 8,587,208</u>	<u>\$ 8,619,502</u>	<u>\$ 6,582,066</u>	<u>\$ 5,163,522</u>	<u>\$ 3,822,056</u>
Net OPEB liability—ending (a) – (b)	<u>\$ 758,162,218</u>	<u>\$941,188,653</u>	<u>\$987,558,677</u>	<u>\$ 768,207,215</u>	<u>\$ 596,844,825</u>
Plan fiduciary net position as a percentage of the total OPEB liability	1.12%	0.91%	0.66%	0.67%	0.64%
Covered payroll	\$ 118,519,409	\$117,913,268	\$112,135,762	\$ 108,493,908	\$ 104,133,239
Net OPEB liability as a percentage of covered payroll	639.69%	798.20%	880.68%	708.06%	573.15%
Discount Rate	3.54%	2.16%	2.21%	3.50%	3.87%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30	2017	2016	2015	2014	2013
Total OPEB Liability					
Service cost	\$ 27,863,367				
Interest	19,356,363				
Changes of benefit terms	-				
Differences between expected and actual experience	-				
Changes of assumptions	(86,284,600)				
Benefit payments	<u>(16,651,413)</u>				
Net change in total OPEB liability	\$ (55,716,283)				
Total OPEB liability—beginning	\$659,632,961				
Total OPEB liability—ending (a)	<u>\$603,916,678</u>				
Plan Fiduciary Net Position					
Contributions—employer	\$ 17,363,363				
Net investment income	171,891				
Benefit payments	(16,651,413)				
Administrative expenses	-				
Other	-				
Net change in plan fiduciary net position	\$ 883,841				
Plan fiduciary net position—beginning	\$ 1,765,633				
Plan fiduciary net position—ending (b)	<u>\$ 2,649,474</u>				
Net OPEB liability—ending (a) – (b)	<u>\$601,267,204</u>				
Plan fiduciary net position as a percentage of the total OPEB liability	0.44%				
Covered payroll	\$ 92,397,157				
Net OPEB liability as a percentage of covered payroll	650.74%				
Discount Rate	3.58%				

Note: Only 6 years are presented here and on the previous page, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Changes of Benefit Terms

All benefit terms are the same as those used in the prior measurement.

Changes of Assumptions

The discount rate changed from 2.16% as of June 30, 2021 to 3.54% as of June 30, 2022. 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	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Annual money-weighted rate of return, net of investment expenses	-12.10%	21.56%	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 6 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, 2021	\$ 8,619,502	12	1.00	\$ 7,576,700
Monthly net external cash flows:				
July	-	11	0.92	-
August	-	10	0.83	-
September	1,113,119	9	0.75	1,010,509
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, 2022				\$ 8,587,208
Money-weighted rate of return:				
				-12.10%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	2022	2021	2020	2019	2018
Actuarially determined contribution	\$ 65,195,315	\$ 69,213,245	\$ 55,546,616	\$ 44,515,201	\$ 44,853,623
Contributions in relation to the actuarially determined contribution	21,435,576	19,831,950	20,125,099	19,153,288	17,980,980
Contribution deficiency (excess)	\$ 43,759,739	\$ 49,381,295	\$ 35,421,517	\$ 25,361,913	\$ 26,872,643
Covered payroll	\$ 118,519,409	\$ 117,913,268	\$ 112,135,762	\$ 108,493,908	\$ 104,133,239
Contributions as a percentage of covered payroll	18.09%	16.82%	17.95%	17.65%	17.27%
Discount rate	2.16%	2.21%	3.50%	3.87%	3.58%
Inflation	2.40%	2.20%	2.40%	2.60%	2.25%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	2017	2016	2015	2014	2013
Actuarially determined contribution	\$ 39,477,033				
Contributions in relation to the actuarially determined contribution	<u>17,363,363</u>				
Contribution deficiency (excess)	<u>\$ 22,113,670</u>				
Covered payroll	\$ 92,397,157				
Contributions as a percentage of covered payroll	18.79%				
Discount rate	4.00%				
Inflation	2.25%				

Note: Only 6 years are presented here and on the previous page, beginning with the year of implementation; 10 years of information will be required.

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	7 percent for 2020, decreasing 0.4 percent per year to 5.4 percent, then grading down to an ultimate trend rate of 4 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, 2022					
	Amounts Recognized in OPEB Expense through June 30, 2022			Deferred Outflows of Resources	Deferred Inflows of Resources
Year	Experience Losses	Experience Gains	(c)	(a) - (c)	(b) + (c)
2018	\$ -	\$ -	\$ -	\$ -	\$ -
2019	15,849,776	-	9,392,460	6,457,316	-
2020	-	-	-	-	-
2021	-	52,938,875	(15,616,188)	-	37,322,687
2022	-	-	-	-	-
Total				<u>\$ 6,457,316</u>	<u>\$ 37,322,687</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, 2022					
	Increases in the Total OPEB Liability	Decreases in the Total OPEB Liability	Amounts Recognized in OPEB Expense through June 30, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2018	\$ -	\$ 31,391,364	\$ (27,681,980)	\$ -	\$ 3,709,384
2019	129,379,977	-	76,669,616	52,710,361	-
2020	216,350,799	-	96,155,910	120,194,889	-
2021	-	25,487,904	(7,518,556)	-	17,969,348
2022	-	221,863,323	(32,723,204)	-	189,140,119
Total				<u>\$ 172,905,250</u>	<u>\$ 210,818,851</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, 2022					
	Investment Earnings Less Than Projected	Investment Earnings Greater Than Projected	Amounts Recognized in OPEB Expense through June 30, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2018	\$ -	\$ 33,167	\$ (33,167)	\$ -	\$ -
2019	-	76,529	(61,224)	-	15,305
2020	4,927	-	2,955	1,972	-
2021	-	1,090,857	(436,342)	-	654,515
2022	1,665,094	-	333,019	1,332,075	-
Subtotal				\$ 1,334,047	\$ 669,820
Net				\$ 664,227	\$ -

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

Year ended June 30		
2023	\$ 5,668,058	
2024	\$ 9,392,746	
2025	\$ 4,012,880	
2026	\$ (19,918,579)	
2027	\$ (41,745,751)	
Thereafter	\$ (25,524,099)	
Deferred Outflows	\$ 180,026,793	
Deferred Inflows	\$ 248,141,538	

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, 2022 is presented below:

Fiscal Year Ended June 30, 2022

Measurement Date	6/30/2022
1. Service cost	\$ 38,009,669
2. Interest on the total OPEB liability	
a. Total OPEB liability, beginning of year	949,808,155
b. Service cost, beginning of year	38,009,669
c. Benefit payments	(20,322,457)
d. Interest on total OPEB liability = 2.16% times (a. + b. + .5 times c.)	21,117,382
3. Differences between expected and actual experience	(5,459,979)
4. Changes of benefit terms	-
5. Changes of assumptions	9,200,496
6. Projected earnings on OPEB plan investments	
a. Plan fiduciary net position, beginning of year	8,619,502
b. Contributions - Employer	21,435,576
c. Benefit payments	(20,322,457)
d. Administrative expenses and other	-
e. Total projected earnings	(519,681)
7. Differences between projected and actual earnings on OPEB plan investments	93,893
8. OPEB plan administrative expenses	-
9. Other changes in fiduciary net position	-
10. Total OPEB Expense	\$ 62,441,780

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, 2021	Individual	Family
Blue Choice	\$960.45	\$2,275.73
Blue Care Elect	\$1,044.57	\$2,405.73
Access Blue New England Saver (QHDHP)	\$827.91	\$1,961.68

Medicare Plans - July 1, 2021	
Medex w/OBRA	\$573.79
Managed Blue	\$444.71

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 a portion of the Medicare Part B premium for certain retirees, survivors and covered spouses. Effective February 1, 2021, the Town reimburses the following amounts:

\$1,050 annually for employees retired as of February 1, 2021 who become Medicare-eligible prior to July 1, 2022 and for covered spouses who were Medicare-eligible as of March 31, 2016.

\$950 annually for employees approved for retirement between February 1, 2021 and July 1, 2022 who become Medicare-eligible on or before July 1, 2022.

\$575 annually for employees retired as of February 1, 2021 who become Medicare-eligible on or after July 1, 2022 but prior to July 1, 2023.

Retirees, spouses and current employees not identified above do not qualify for the Medicare Part B reimbursement.

Dental Coverage Dental coverage is provided. The total monthly costs are \$36.58 and \$73.16 for individual and two-person 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.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Valuation Date	July 1, 2020
Disclosure Date	June 30, 2022
GASB 75 Reporting Date	June 30, 2022
Long-Term Expected Rate of Return	5.75%, 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	3.54%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2022.
Discount Rate (GASB)	3.54%, compounded annually, for the measurement as of June 30, 2022. 2.16%, compounded annually, for the measurement as of June 30, 2021. 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)	2.16%, compounded annually, for development of the Actuarially Determined Contribution (ADEC) as of June 30, 2022.
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	7.00%
2	6.60%
3	6.20%
4	5.80%
5	5.40%
Ultimate	4.00%

Trend rates after year 5 grade down to the ultimate rate of 4 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 current economic data, analyses from economists and other experts, and professional judgment.

Payroll Growth

3.5% per year.

Participation Rates

Medical - 90% of eligible retired employees will elect to participate.

Dental - 90% of eligible retirees will elect to participate.

Life - 90% 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.

70% 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, 2020 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	\$4,365	\$5,124	\$4,365	\$5,124
20-24	3,440	5,456	3,440	5,456
25-29	3,579	8,049	3,579	8,049
30-34	4,496	10,170	4,496	10,170
35-39	5,640	10,476	5,640	10,476
40-44	7,028	10,729	7,028	10,729
45-49	8,870	11,777	8,870	11,777
50-54	11,689	13,854	11,689	13,854
55-59	15,190	16,019	15,190	16,019
60-64	19,494	19,066	19,494	19,066
65-69	4,846	4,720	24,321	22,855
70-74	5,808	5,567	29,140	26,949
75-79	6,858	6,459	34,413	31,270
80-84	7,883	7,408	39,555	35,862
85-89	8,781	8,281	44,060	40,088
90-94	9,559	8,838	47,962	42,785
95+	10,160	8,547	50,982	41,371

Retiree Contributions

Annual per capita participant contributions for the fiscal year beginning July 1, 2020 are as follows:

Plan	Contribution				
	1%	10%	20%	23%	25%
Non-Medicare	\$ 126	\$ 1,261	\$ 2,523	\$ 2,838	\$ 3,153
Medicare	58	583	1,166	1,312	1,458

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, 2021. We made reasonable adjustments for missing or invalid data.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Use of ProVal®

KMS Actuaries has used ProVal® to develop the liabilities, normal costs and projected benefit payments in this report. We have a lease agreement with WinTech, the developer of ProVal®, and have relied on their system to perform these calculations. The actuaries signing this report and the KMS staff members who were involved in preparing it have a clear understanding of ProVal® and have used it only for its intended purpose. We have reviewed the output produced by ProVal® for reasonableness and we are not aware of any material inconsistencies, limitations or known weaknesses that would affect this report.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

General and Public Safety Employees

Pre-Retirement Mortality

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

Healthy Retiree Mortality

Healthy retiree 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.

Disabled Retiree Mortality

Disabled retiree mortality rates for General and Public Safety employees are based on the RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2020.

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

General and Public Safety Employees

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

Teachers

Pre-Retirement Mortality Pre-retirement mortality rates for Teachers are based on the PUB-2010 Teachers Headcount-Weighted Employee Mortality Table, base year 2010, projected with generational mortality using Scale MP-2020.

Healthy Retiree Mortality Healthy retiree mortality rates for Teachers are based on the PUB-2010 Teachers Headcount-Weighted Retiree Mortality Table, base year 2010, projected with generational mortality using Scale MP-2020.

Disabled Retiree Mortality Disabled retiree mortality rates for Teachers are based on the PUB-2010 Teachers Headcount-Weighted Disabled Mortality Table, base year 2010, projected with generational mortality using Scale MP-2020.

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

Teachers

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, 2020

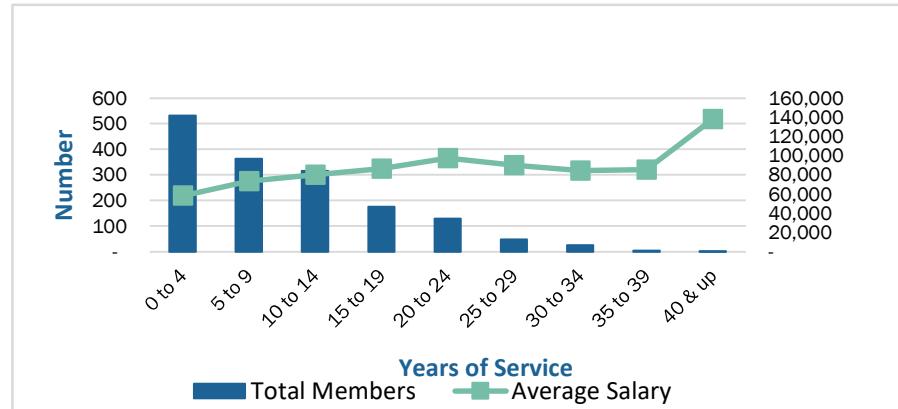
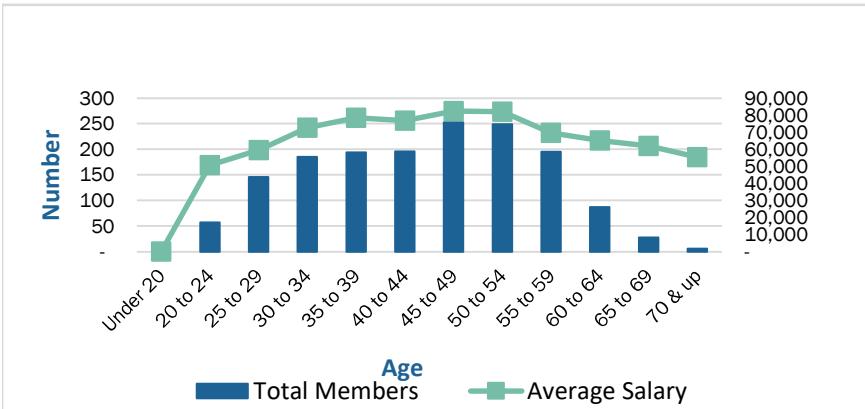
Age	Years of Service										Total	Total Salary	Average Salary
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up				
Under 20	-	-	-	-	-	-	-	-	-	-	-	-	-
20 to 24	53	4	-	-	-	-	-	-	-	57	2,888,928	50,683	
25 to 29	113	33	-	-	-	-	-	-	-	146	8,685,853	59,492	
30 to 34	91	81	13	-	-	-	-	-	-	185	13,452,822	72,718	
35 to 39	70	53	62	9	-	-	-	-	-	194	15,209,807	78,401	
40 to 44	66	41	45	35	9	-	-	-	-	196	15,060,813	76,841	
45 to 49	45	65	69	31	39	4	-	-	-	253	20,860,811	82,454	
50 to 54	36	46	65	46	28	21	7	-	-	249	20,437,622	82,079	
55 to 59	34	26	48	38	27	8	13	1	-	195	13,584,746	69,665	
60 to 64	16	11	8	9	23	13	4	2	1	87	5,666,368	65,131	
65 to 69	7	3	4	8	2	2	1	-	1	28	1,733,329	61,905	
70 & up	1	-	2	-	1	-	1	1	-	6	332,168	55,361	
Total	532	363	316	176	129	48	26	4	2	1,596	117,913,268	73,880	
Total Salary	31,050,007	26,668,596	25,266,516	15,231,805	12,554,171	4,324,552	2,199,983	341,220	276,417				
Average Salary	58,365	73,467	79,957	86,544	97,319	90,095	84,615	85,305	138,209				

Average Age:

44.4

Average Service:

10.2



SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.2 - Retired Members, Covered Spouses and Survivors as of July 1, 2020

Age	Non-Medicare Plans			Medicare Plans			Total
	Blue Choice	Blue Care Elect	Access Blue New England Saver (QHDHP)	Medex w/OBRA	Managed Blue		
Under 40	3	1	0	0	0	0	4
40 to 44	4	0	0	0	0	0	4
45 to 49	6	0	0	0	0	0	6
50 to 54	25	2	0	0	0	0	27
55 to 59	48	11	0	0	0	0	59
60 to 64	87	14	0	8	32	141	
65 to 69	20	7	0	102	212	341	
70 to 74	9	6	0	170	119	304	
75 to 79	3	6	0	179	26	214	
80 to 84	3	0	0	89	8	100	
85 to 89	2	0	0	48	4	54	
90+	0	0	0	23	0	23	
Total	210	47	0	619	401	1,277	
Covered Spouses	161	32	0	297	254	744	

Average Age: 71.3

In addition, there are 143 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.

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	478	1,082	3	20	5	8	1,596
Average Age	43.3	44.8	44.4	45.8	49.9	58.8	44.4
Average Service	10.6	10.0	2.1	9.0	4.7	15.4	10.2
Covered Payroll	40,113,930	75,533,134	136,766	1,306,014	273,591	549,833	117,913,268
Retired Members and Survivors	436	845	7	29	5	4	1,326
Average Age	69.8	71.9	79.1	71.9	75.5	77.0	71.3
Covered Spouses	275	544	2	13	3	1	838
Expected Benefit Payments	7,167,230	12,580,979	64,798	396,142	60,940	52,368	20,322,457
OPEB Trust contributions	391,428	698,825	1,990	15,611	2,073	3,192	1,113,119
Total Employer Contributions	7,558,658	13,279,804	66,788	411,753	63,013	55,560	21,435,576
Beginning Net OPEB Liability - June 30, 2021							
Total OPEB Liability	335,837,392	594,666,746	1,636,416	13,340,805	1,711,710	2,615,086	949,808,155
Fiduciary Net Position	2,971,955	5,469,116	14,389	123,284	17,065	23,693	8,619,502
Net OPEB Liability	332,865,437	589,197,630	1,622,027	13,217,521	1,694,645	2,591,393	941,188,653
Total OPEB Liability, beginning of year	335,837,392	594,666,746	1,636,416	13,340,805	1,711,710	2,615,086	949,808,155
Service cost	14,127,448	23,173,273	69,580	420,336	82,082	136,950	38,009,669
Interest	7,481,835	13,209,470	36,149	292,962	38,088	58,878	21,117,382
Changes of benefit terms	0	0	0	0	0	0	0
Differences between expected and actual experience	0	0	0	0	0	0	0
Changes of assumptions	(80,652,350)	(137,096,803)	(306,511)	(2,904,423)	(343,308)	(559,928)	(221,863,323)
Benefit payments	(7,167,230)	(12,580,979)	(64,798)	(396,142)	(60,940)	(52,368)	(20,322,457)
Net change in total OPEB liability	(66,210,297)	(113,295,039)	(265,580)	(2,587,267)	(284,078)	(416,468)	(183,058,729)
Total OPEB Liability, end of year	269,627,095	481,371,707	1,370,836	10,753,538	1,427,632	2,198,618	766,749,426
Ending Net OPEB Liability - June 30, 2022							
Total OPEB Liability	269,627,095	481,371,707	1,370,836	10,753,538	1,427,632	2,198,618	766,749,426
Fiduciary Net Position	2,967,748	5,441,858	14,455	122,541	16,882	23,724	8,587,208
Net OPEB Liability	266,659,347	475,929,849	1,356,381	10,630,997	1,410,750	2,174,894	758,162,218

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	2,283,207	4,042,870	11,125	90,698	11,637	17,779	6,457,316
Changes in Assumptions	61,136,607	108,254,495	297,897	2,428,591	311,604	476,056	172,905,250
Differences between Expected and Actual							
Earnings on OPEB Plan Investments	229,022	421,455	1,109	9,500	1,315	1,826	664,227
Total Deferred Outflows of Resources	63,648,836	112,718,821	310,131	2,528,789	324,556	495,661	180,026,793
Total Deferred Inflows of Resources							
Differences between Expected and Actual							
Experience	13,196,722	23,367,414	64,303	524,227	67,262	102,760	37,322,687
Changes in Assumptions	74,542,267	131,991,876	363,218	2,961,117	379,930	580,443	210,818,851
Differences between Expected and Actual							
Earnings on OPEB Plan Investments	0	0	0	0	0	0	0
Total Deferred Inflows of Resources	87,738,989	155,359,290	427,521	3,485,344	447,192	683,203	248,141,538
Total OPEB Expense	19,076,734	41,701,590	178,338	1,016,849	213,111	255,159	62,441,780
Sensitivity of the Net OPEB Liability to Changes in the Discount Rate							
Current Discount Rate: 3.54%	266,659,347	475,929,849	1,356,381	10,630,997	1,410,750	2,174,894	758,162,218
1% Decrease in the Discount Rate: 2.54%	318,953,287	569,291,472	1,622,253	12,716,636	1,687,638	2,601,314	906,872,601
1% Increase in the Discount Rate: 4.54%	225,953,214	403,256,215	1,149,423	9,007,514	1,195,218	1,842,964	642,404,548
Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates							
Current Trend Rates	266,659,347	475,929,849	1,356,381	10,630,997	1,410,750	2,174,894	758,162,218
1% Decrease in Trend Rates	219,259,508	391,305,782	1,115,391	8,740,549	1,159,775	1,788,382	623,369,387
1% Increase in Trend Rates	329,653,434	588,394,700	1,676,655	13,143,390	1,744,294	2,688,566	937,301,039
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in OPEB Expense							
2023	2,004,623	3,548,258	9,768	79,598	10,205	15,606	5,668,058
2024	3,321,934	5,879,947	16,188	131,905	16,911	25,861	9,392,746
2025	1,419,236	2,512,100	6,916	56,354	7,225	11,049	4,012,880
2026	(7,044,607)	(12,469,218)	(34,328)	(279,722)	(35,862)	(54,842)	(19,918,579)
2027	(14,764,227)	(26,133,233)	(71,945)	(586,247)	(75,160)	(114,939)	(41,745,751)
Thereafter	(9,027,112)	(15,978,326)	(43,989)	(358,442)	(45,954)	(70,276)	(25,524,099)

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.

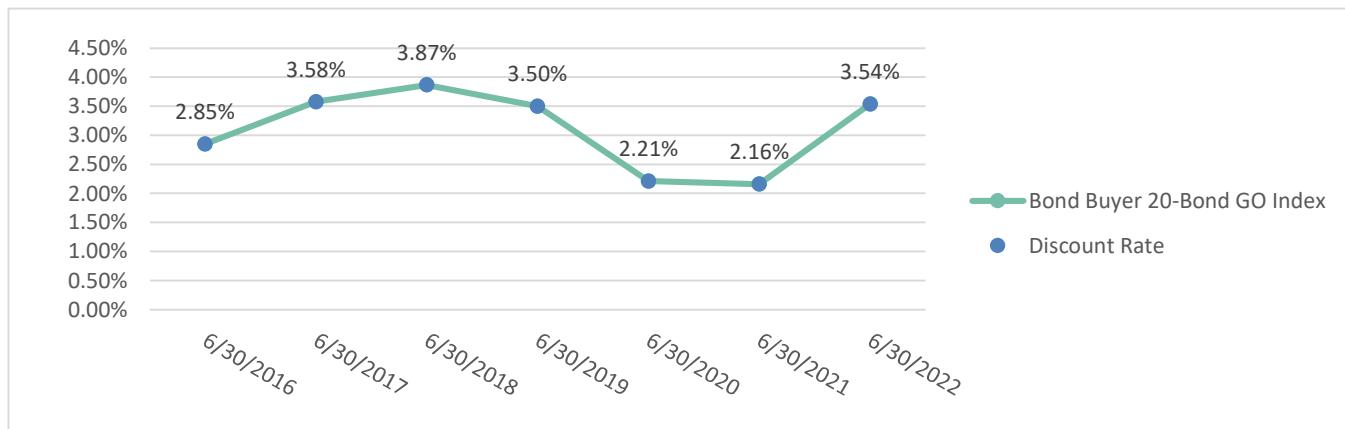
Projected cash flows into and out of the OPEB plan are assumed to be contributions to the OPEB plan, benefit payments, OPEB plan administrative expenses and OPEB plan investment earnings. These projected cash flows are used to project the OPEB plan's fiduciary net position at the beginning of each period. 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 3.54%, the rate that reflects a tax-exempt, high quality municipal bond rate. The municipal bond rate of 3.54% is based on the Bond Buyer 20-Bond GO Index published on June 30, 2022. The OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore the 3.54% 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 3.54%.

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) * 21.69%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2022	113,028,849	-	113,028,849	20,322,457	1,113,119	-	21,435,576
2023	109,281,108	7,703,751	116,984,859	21,559,257	1,169,849	1,670,999	21,058,107
2024	105,705,932	15,373,397	121,079,329	22,908,112	1,210,793	3,334,600	20,784,305
2025	102,317,597	22,999,509	125,317,106	24,270,731	1,253,171	4,988,759	20,535,143
2026	98,938,566	30,764,639	129,703,205	25,533,073	1,297,032	6,673,071	20,157,034
2027	95,663,193	38,579,624	134,242,817	27,064,456	1,342,428	8,368,198	20,038,686
2028	92,145,230	46,796,086	138,941,316	28,320,583	1,389,413	10,150,408	19,559,588
2029	88,596,741	55,207,521	143,804,262	29,756,008	1,438,043	11,974,908	19,219,143
2030	85,022,443	63,814,968	148,837,411	31,658,738	1,488,374	13,841,925	19,305,187
2031	81,071,934	72,974,786	154,046,720	33,308,706	1,540,467	15,828,756	19,020,417
2032	76,795,920	82,642,435	159,438,355	34,764,012	1,594,384	17,925,738	18,432,658
2033	72,706,068	92,312,629	165,018,697	36,491,999	1,650,187	20,023,273	18,118,913
2034	68,815,129	101,979,222	170,794,351	37,934,974	1,707,944	22,120,026	17,522,892
2035	65,022,378	111,749,775	176,772,153	39,197,655	1,767,722	24,239,330	16,726,047
2036	61,224,300	121,734,878	182,959,178	40,431,581	1,829,592	26,405,170	15,856,003
2037	57,539,886	131,822,863	189,362,749	41,842,831	1,893,627	28,593,327	15,143,131
2038	54,045,337	141,945,108	195,990,445	42,850,546	1,959,904	30,788,914	14,021,536
2039	50,560,879	152,289,232	202,850,111	44,027,606	2,028,501	33,032,629	13,023,478
2040	46,961,815	162,988,050	209,949,865	45,129,922	2,099,499	35,353,280	11,876,141
2041	43,578,095	173,720,015	217,298,110	45,949,171	2,172,981	37,681,120	10,441,032
2042	40,250,893	184,652,651	224,903,544	47,211,994	2,249,035	40,052,488	9,408,541
2043	37,030,283	195,744,885	232,775,168	48,401,689	2,327,752	42,458,473	8,270,968
2044	33,802,888	207,119,411	240,922,299	49,007,686	2,409,223	44,925,689	6,491,220
2045	30,889,823	218,464,756	249,354,579	50,047,938	2,493,546	47,386,576	5,154,908
2046	28,007,595	230,074,394	258,081,989	50,954,985	2,580,820	49,904,790	3,631,015
2047	25,323,237	241,791,622	267,114,859	51,497,456	2,671,149	52,446,341	1,722,264
2048	23,040,309	253,423,570	276,463,879	51,886,622	2,764,639	54,969,394	-
2049	20,724,565	265,415,550	286,140,115	52,324,319	2,861,401	57,570,541	-
2050	18,604,206	277,550,813	296,155,019	52,280,917	2,961,550	60,202,767	-
2051	16,621,271	289,899,174	306,520,445	52,221,893	3,065,204	62,881,215	-
2052	14,628,085	302,620,576	317,248,661	52,568,130	3,172,487	65,640,579	-
2053	12,606,880	315,745,484	328,352,364	52,606,318	3,283,524	68,487,466	-

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) * 21.69%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2054	10,732,018	329,112,679	339,844,697	52,786,246	3,398,447	71,386,906	-
2055	8,951,083	342,788,178	351,739,261	53,094,204	3,517,393	74,353,220	-
2056	7,396,361	356,653,774	364,050,135	53,235,752	3,640,501	77,360,768	-
2057	5,903,718	370,888,172	376,791,890	53,526,695	3,767,919	80,448,311	-
2058	4,651,682	385,327,924	389,979,606	53,716,211	3,899,796	83,580,397	-
2059	3,565,207	400,063,685	403,628,892	53,612,316	4,036,289	86,776,690	-
2060	2,552,726	415,203,177	417,755,903	53,446,297	4,177,559	90,060,554	-
2061	1,780,605	430,596,755	432,377,360	52,875,295	4,323,774	93,399,532	-
2062	1,108,936	446,401,632	447,510,568	51,826,902	4,475,106	96,827,724	-
2063	673,763	462,499,675	463,173,438	51,051,486	4,631,734	100,319,505	-
2064	410,303	478,974,205	479,384,508	50,343,931	4,793,845	103,892,949	-
2065	254,522	495,908,444	496,162,966	49,408,063	4,961,630	107,566,107	-
2066	143,494	513,385,176	513,528,670	49,051,943	5,135,287	111,356,936	-
2067	89,991	531,412,182	531,502,173	48,555,009	5,315,022	115,267,123	-
2068	44,319	550,060,430	550,104,749	48,003,745	5,501,047	119,312,062	-
2069	10,491	569,347,924	569,358,415	47,349,317	5,693,584	123,495,658	-
2070	-	589,285,960	589,285,960	46,568,899	5,892,860	127,820,362	-
2071	-	609,910,969	609,910,969	45,738,032	6,099,110	132,294,074	-
2072	-	631,257,853	631,257,853	44,692,273	6,312,579	136,924,367	-
2073	-	653,351,878	653,351,878	43,563,557	6,533,519	141,716,720	-
2074	-	676,219,194	676,219,194	42,256,843	6,762,192	146,676,805	-
2075	-	699,886,866	699,886,866	40,923,444	6,998,869	151,810,493	-
2076	-	724,382,906	724,382,906	39,517,465	7,243,829	157,123,860	-
2077	-	749,736,308	749,736,308	37,927,171	7,497,363	162,623,196	-
2078	-	775,977,079	775,977,079	36,292,277	7,759,771	168,315,008	-
2079	-	803,136,277	803,136,277	34,570,680	8,031,363	174,206,033	-
2080	-	831,246,047	831,246,047	32,802,822	8,312,460	180,303,244	-
2081	-	860,339,659	860,339,659	30,990,610	8,603,397	186,613,858	-
2082	-	890,451,547	890,451,547	29,127,232	8,904,515	193,145,343	-
2083	-	921,617,351	921,617,351	27,238,262	9,216,174	199,905,430	-
2084	-	953,873,958	953,873,958	25,329,526	9,538,740	206,902,120	-
2085	-	987,259,547	987,259,547	23,443,319	9,872,595	214,143,694	-

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) * 21.69%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2086	-	1,021,813,631	1,021,813,631	21,546,824	10,218,136	221,638,723	-
2087	-	1,057,577,108	1,057,577,108	19,674,508	10,575,771	229,396,078	-
2088	-	1,094,592,307	1,094,592,307	17,842,142	10,945,923	237,424,941	-
2089	-	1,132,903,038	1,132,903,038	16,044,453	11,329,030	245,734,814	-
2090	-	1,172,554,644	1,172,554,644	14,361,970	11,725,546	254,335,533	-
2091	-	1,213,594,057	1,213,594,057	12,719,154	12,135,941	263,237,276	-
2092	-	1,256,069,849	1,256,069,849	11,189,131	12,560,698	272,450,581	-
2093	-	1,300,032,294	1,300,032,294	9,727,792	13,000,323	281,986,352	-
2094	-	1,345,533,424	1,345,533,424	8,375,077	13,455,334	291,855,874	-
2095	-	1,392,627,094	1,392,627,094	7,136,347	13,926,271	302,070,829	-
2096	-	1,441,369,042	1,441,369,042	6,028,427	14,413,690	312,643,308	-
2097	-	1,491,816,958	1,491,816,958	5,038,973	14,918,170	323,585,824	-
2098	-	1,544,030,552	1,544,030,552	4,162,092	15,440,306	334,911,328	-
2099	-	1,598,071,621	1,598,071,621	3,395,017	15,980,716	346,633,224	-
2100	-	1,654,004,128	1,654,004,128	2,730,789	16,540,041	358,765,387	-
2101	-	1,711,894,272	1,711,894,272	2,163,539	17,118,943	371,322,176	-
2102	-	1,771,810,572	1,771,810,572	1,686,235	17,718,106	384,318,452	-
2103	-	1,833,823,942	1,833,823,942	1,290,981	18,338,239	397,769,598	-
2104	-	1,898,007,780	1,898,007,780	969,630	18,980,078	411,691,534	-
2105	-	1,964,438,052	1,964,438,052	713,378	19,644,381	426,100,737	-
2106	-	2,033,193,384	2,033,193,384	513,250	20,331,934	441,014,263	-
2107	-	2,104,355,152	2,104,355,152	360,399	21,043,552	456,449,762	-
2108	-	2,178,007,582	2,178,007,582	246,666	21,780,076	472,425,504	-
2109	-	2,254,237,847	2,254,237,847	164,275	22,542,378	488,960,396	-
2110	-	2,333,136,172	2,333,136,172	106,213	23,331,362	506,074,010	-
2111	-	2,414,795,938	2,414,795,938	66,498	24,147,959	523,786,601	-
2112	-	2,499,313,796	2,499,313,796	40,271	24,993,138	542,119,132	-
2113	-	2,586,789,779	2,586,789,779	23,570	25,867,898	561,093,301	-
2114	-	2,677,327,421	2,677,327,421	13,355	26,773,274	580,731,567	-
2115	-	2,771,033,881	2,771,033,881	7,322	27,710,339	601,057,172	-
2116	-	2,868,020,067	2,868,020,067	3,893	28,680,201	622,094,173	-
2117	-	2,968,400,769	2,968,400,769	2,014	29,684,008	643,867,469	-

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) * 21.69%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2118	-	3,072,294,796	3,072,294,796	1,005	30,722,948	666,402,830	-
2119	-	3,179,825,114	3,179,825,114	479	31,798,251	689,726,929	-
2120	-	3,291,118,993	3,291,118,993	212	32,911,190	713,867,372	-
2121	-	3,406,308,158	3,406,308,158	67	34,063,082	738,852,730	-
2122	-	3,525,528,944	3,525,528,944	25	35,255,289	764,712,576	-
2123	-	3,648,922,457	3,648,922,457	8	36,489,225	791,477,516	-
2124	-	3,776,634,743	3,776,634,743	-	37,766,347	819,179,229	-

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)
2022	8,619,502	21,435,576	20,322,457	-	(1,145,413)	8,587,208
2023	8,587,208	21,058,107	21,559,257	-	479,356	8,565,414
2024	8,565,414	20,784,305	22,908,112	-	431,452	6,873,059
2025	6,873,059	20,535,143	24,270,731	-	287,803	3,425,274
2026	3,425,274	20,157,034	25,533,073	-	42,392	-
2027	-	20,038,686	27,064,456	-	-	-
2028	-	19,559,588	28,320,583	-	-	-
2029	-	19,219,143	29,756,008	-	-	-
2030	-	19,305,187	31,658,738	-	-	-
2031	-	19,020,417	33,308,706	-	-	-
2032	-	18,432,658	34,764,012	-	-	-
2033	-	18,118,913	36,491,999	-	-	-
2034	-	17,522,892	37,934,974	-	-	-
2035	-	16,726,047	39,197,655	-	-	-
2036	-	15,856,003	40,431,581	-	-	-
2037	-	15,143,131	41,842,831	-	-	-
2038	-	14,021,536	42,850,546	-	-	-
2039	-	13,023,478	44,027,606	-	-	-
2040	-	11,876,141	45,129,922	-	-	-
2041	-	10,441,032	45,949,171	-	-	-
2042	-	9,408,541	47,211,994	-	-	-
2043	-	8,270,968	48,401,689	-	-	-
2044	-	6,491,220	49,007,686	-	-	-
2045	-	5,154,908	50,047,938	-	-	-
2046	-	3,631,015	50,954,985	-	-	-
2047	-	1,722,264	51,497,456	-	-	-
2048	-	-	51,886,622	-	-	-
2049	-	-	52,324,319	-	-	-
2050	-	-	52,280,917	-	-	-
2051	-	-	52,221,893	-	-	-
2052	-	-	52,568,130	-	-	-
2053	-	-	52,606,318	-	-	-
2054	-	-	52,786,246	-	-	-
2055	-	-	53,094,204	-	-	-

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)
2056	-	-	53,235,752	-	-	-
2057	-	-	53,526,695	-	-	-
2058	-	-	53,716,211	-	-	-
2059	-	-	53,612,316	-	-	-
2060	-	-	53,446,297	-	-	-
2061	-	-	52,875,295	-	-	-
2062	-	-	51,826,902	-	-	-
2063	-	-	51,051,486	-	-	-
2064	-	-	50,343,931	-	-	-
2065	-	-	49,408,063	-	-	-
2066	-	-	49,051,943	-	-	-
2067	-	-	48,555,009	-	-	-
2068	-	-	48,003,745	-	-	-
2069	-	-	47,349,317	-	-	-
2070	-	-	46,568,899	-	-	-
2071	-	-	45,738,032	-	-	-
2072	-	-	44,692,273	-	-	-
2073	-	-	43,563,557	-	-	-
2074	-	-	42,256,843	-	-	-
2075	-	-	40,923,444	-	-	-
2076	-	-	39,517,465	-	-	-
2077	-	-	37,927,171	-	-	-
2078	-	-	36,292,277	-	-	-
2079	-	-	34,570,680	-	-	-
2080	-	-	32,802,822	-	-	-
2081	-	-	30,990,610	-	-	-
2082	-	-	29,127,232	-	-	-
2083	-	-	27,238,262	-	-	-
2084	-	-	25,329,526	-	-	-
2085	-	-	23,443,319	-	-	-
2086	-	-	21,546,824	-	-	-
2087	-	-	19,674,508	-	-	-
2088	-	-	17,842,142	-	-	-
2089	-	-	16,044,453	-	-	-

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)
2090	-	-	14,361,970	-	-	-
2091	-	-	12,719,154	-	-	-
2092	-	-	11,189,131	-	-	-
2093	-	-	9,727,792	-	-	-
2094	-	-	8,375,077	-	-	-
2095	-	-	7,136,347	-	-	-
2096	-	-	6,028,427	-	-	-
2097	-	-	5,038,973	-	-	-
2098	-	-	4,162,092	-	-	-
2099	-	-	3,395,017	-	-	-
2100	-	-	2,730,789	-	-	-
2101	-	-	2,163,539	-	-	-
2102	-	-	1,686,235	-	-	-
2103	-	-	1,290,981	-	-	-
2104	-	-	969,630	-	-	-
2105	-	-	713,378	-	-	-
2106	-	-	513,250	-	-	-
2107	-	-	360,399	-	-	-
2108	-	-	246,666	-	-	-
2109	-	-	164,275	-	-	-
2110	-	-	106,213	-	-	-
2111	-	-	66,498	-	-	-
2112	-	-	40,271	-	-	-
2113	-	-	23,570	-	-	-
2114	-	-	13,355	-	-	-
2115	-	-	7,322	-	-	-
2116	-	-	3,893	-	-	-
2117	-	-	2,014	-	-	-
2118	-	-	1,005	-	-	-
2119	-	-	479	-	-	-
2120	-	-	212	-	-	-
2121	-	-	67	-	-	-
2122	-	-	25	-	-	-
2123	-	-	8	-	-	-
2124	-	-	-	-	-	-

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	Projected Benefit Payments	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments	Present Value of "Unfunded" Benefit Payments	Present Value of Benefit Payments Using the Single Discount Rate (g) = 3.54%
2023	8,587,208	21,559,257	-	21,559,257	-	21,187,500	21,187,500
2024	8,565,414	22,908,112	-	22,908,112	-	21,743,380	21,743,380
2025	6,873,059	24,270,731	-	24,270,731	-	22,249,100	22,249,100
2026	3,425,274	25,533,073	-	25,533,073	-	22,606,042	22,606,042
2027	-	27,064,456	-	27,064,456	-	23,142,623	23,142,623
2028	-	28,320,583	-	28,320,583	-	23,388,766	23,388,766
2029	-	29,756,008	-	29,756,008	-	23,734,037	23,734,037
2030	-	31,658,738	-	31,658,738	-	24,388,349	24,388,349
2031	-	33,308,706	-	33,308,706	-	24,782,117	24,782,117
2032	-	34,764,012	-	34,764,012	-	24,980,571	24,980,571
2033	-	36,491,999	-	36,491,999	-	25,325,730	25,325,730
2034	-	37,934,974	-	37,934,974	-	25,427,048	25,427,048
2035	-	39,197,655	-	39,197,655	-	25,375,118	25,375,118
2036	-	40,431,581	-	40,431,581	-	25,279,039	25,279,039
2037	-	41,842,831	-	41,842,831	-	25,266,945	25,266,945
2038	-	42,850,546	-	42,850,546	-	24,990,783	24,990,783
2039	-	44,027,606	-	44,027,606	-	24,799,357	24,799,357
2040	-	45,129,922	-	45,129,922	-	24,551,146	24,551,146
2041	-	45,949,171	-	45,949,171	-	24,142,192	24,142,192
2042	-	47,211,994	-	47,211,994	-	23,957,595	23,957,595
2043	-	48,401,689	-	48,401,689	-	23,721,559	23,721,559
2044	-	49,007,686	-	49,007,686	-	23,197,370	23,197,370
2045	-	50,047,938	-	50,047,938	-	22,879,818	22,879,818
2046	-	50,954,985	-	50,954,985	-	22,498,051	22,498,051
2047	-	51,497,456	-	51,497,456	-	21,960,177	21,960,177
2048	-	51,886,622	-	51,886,622	-	21,369,645	21,369,645
2049	-	52,324,319	-	52,324,319	-	20,813,127	20,813,127
2050	-	52,280,917	-	52,280,917	-	20,084,859	20,084,859
2051	-	52,221,893	-	52,221,893	-	19,376,264	19,376,263
2052	-	52,568,130	-	52,568,130	-	18,837,870	18,837,870
2053	-	52,606,318	-	52,606,318	-	18,207,026	18,207,026
2054	-	52,786,246	-	52,786,246	-	17,644,677	17,644,677

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) = 3.54%
2055	-	53,094,204	-	53,094,204	-	17,140,832	17,140,832
2056	-	53,235,752	-	53,235,752	-	16,598,927	16,598,927
2057	-	53,526,695	-	53,526,695	-	16,119,029	16,119,029
2058	-	53,716,211	-	53,716,211	-	15,623,044	15,623,044
2059	-	53,612,316	-	53,612,316	-	15,059,713	15,059,713
2060	-	53,446,297	-	53,446,297	-	14,499,786	14,499,786
2061	-	52,875,295	-	52,875,295	-	13,854,429	13,854,429
2062	-	51,826,902	-	51,826,902	-	13,115,441	13,115,441
2063	-	51,051,486	-	51,051,486	-	12,477,509	12,477,509
2064	-	50,343,931	-	50,343,931	-	11,883,885	11,883,885
2065	-	49,408,063	-	49,408,063	-	11,264,217	11,264,217
2066	-	49,051,943	-	49,051,943	-	10,800,683	10,800,683
2067	-	48,555,009	-	48,555,009	-	10,325,733	10,325,733
2068	-	48,003,745	-	48,003,745	-	9,859,475	9,859,475
2069	-	47,349,317	-	47,349,317	-	9,392,566	9,392,566
2070	-	46,568,899	-	46,568,899	-	8,921,920	8,921,920
2071	-	45,738,032	-	45,738,032	-	8,463,143	8,463,143
2072	-	44,692,273	-	44,692,273	-	7,986,904	7,986,904
2073	-	43,563,557	-	43,563,557	-	7,519,020	7,519,020
2074	-	42,256,843	-	42,256,843	-	7,044,120	7,044,120
2075	-	40,923,444	-	40,923,444	-	6,588,609	6,588,609
2076	-	39,517,465	-	39,517,465	-	6,144,725	6,144,725
2077	-	37,927,171	-	37,927,171	-	5,695,813	5,695,813
2078	-	36,292,277	-	36,292,277	-	5,263,944	5,263,944
2079	-	34,570,680	-	34,570,680	-	4,842,803	4,842,803
2080	-	32,802,822	-	32,802,822	-	4,438,048	4,438,048
2081	-	30,990,610	-	30,990,610	-	4,049,512	4,049,512
2082	-	29,127,232	-	29,127,232	-	3,675,900	3,675,900
2083	-	27,238,262	-	27,238,262	-	3,319,982	3,319,982
2084	-	25,329,526	-	25,329,526	-	2,981,777	2,981,777
2085	-	23,443,319	-	23,443,319	-	2,665,380	2,665,380
2086	-	21,546,824	-	21,546,824	-	2,366,002	2,366,002

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) = 3.54%
2087	-	19,674,508	-	19,674,508	-	2,086,544	2,086,544
2088	-	17,842,142	-	17,842,142	-	1,827,521	1,827,521
2089	-	16,044,453	-	16,044,453	-	1,587,202	1,587,202
2090	-	14,361,970	-	14,361,970	-	1,372,187	1,372,187
2091	-	12,719,154	-	12,719,154	-	1,173,679	1,173,679
2092	-	11,189,131	-	11,189,131	-	997,193	997,193
2093	-	9,727,792	-	9,727,792	-	837,315	837,315
2094	-	8,375,077	-	8,375,077	-	696,234	696,234
2095	-	7,136,347	-	7,136,347	-	572,973	572,973
2096	-	6,028,427	-	6,028,427	-	467,470	467,470
2097	-	5,038,973	-	5,038,973	-	377,385	377,385
2098	-	4,162,092	-	4,162,092	-	301,055	301,055
2099	-	3,395,017	-	3,395,017	-	237,174	237,174
2100	-	2,730,789	-	2,730,789	-	184,249	184,249
2101	-	2,163,539	-	2,163,539	-	140,985	140,985
2102	-	1,686,235	-	1,686,235	-	106,125	106,125
2103	-	1,290,981	-	1,290,981	-	78,472	78,472
2104	-	969,630	-	969,630	-	56,923	56,923
2105	-	713,378	-	713,378	-	40,448	40,448
2106	-	513,250	-	513,250	-	28,106	28,106
2107	-	360,399	-	360,399	-	19,061	19,061
2108	-	246,666	-	246,666	-	12,600	12,600
2109	-	164,275	-	164,275	-	8,104	8,104
2110	-	106,213	-	106,213	-	5,061	5,061
2111	-	66,498	-	66,498	-	3,060	3,060
2112	-	40,271	-	40,271	-	1,790	1,790
2113	-	23,570	-	23,570	-	1,012	1,012
2114	-	13,355	-	13,355	-	554	554
2115	-	7,322	-	7,322	-	293	293
2116	-	3,893	-	3,893	-	151	151
2117	-	2,014	-	2,014	-	75	75
2118	-	1,005	-	1,005	-	36	36

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) = 3.54%
	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)		
2119	-	479	-	479	-	17		17
2120	-	212	-	212	-	7		7
2121	-	67	-	67	-	2		2
2122	-	25	-	25	-	1		1
2123	-	8	-	8	-	-		-
2124	-	-	-	-	-	-		-

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

Year	Differences between Expected and Actual Experience	Recognition Period (Years)										
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2018	-	5.67	-	-	-	-	-	-	-	-	-	-
2019	15,849,776	6.75	2,348,115	2,348,115	2,348,115	1,761,086	-	-	-	-	-	-
2020	-	6.75	-	-	-	-	-	-	-	-	-	-
2021	(52,938,875)	6.78	(7,808,094)	(7,808,094)	(7,808,094)	(7,808,094)	(7,808,094)	(6,090,311)	-	-	-	-
2022	-	6.78	-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			(5,459,979)	(5,459,979)	(5,459,979)	(6,047,008)	(7,808,094)	(6,090,311)	-	-	-	-
Year	Changes of Assumptions	Recognition Period (Years)										
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2018	(31,391,364)	5.67	(5,536,396)	(3,709,384)	-	-	-	-	-	-	-	-
2019	129,379,977	6.75	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	24,038,979	-	-	-	-	-
2021	(25,487,904)	6.78	(3,759,278)	(3,759,278)	(3,759,278)	(3,759,278)	(3,759,278)	(2,932,236)	-	-	-	-
2022	(221,863,323)	6.78	(32,723,204)	(32,723,204)	(32,723,204)	(32,723,204)	(32,723,204)	(32,723,204)	(25,524,099)	-	-	-
Net Increase (Decrease) in OPEB Expense			9,200,496	11,027,508	14,736,892	9,945,041	(12,443,503)	(35,655,440)	(25,524,099)	-	-	-

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

Year	Projected and Actual Earnings on OPEB Plan Investments	Recognition Period (Years)	Differences between									
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2018	(33,167)	5	(6,634)	-	-	-	-	-	-	-	-	-
2019	(76,529)	5	(15,306)	(15,305)	-	-	-	-	-	-	-	-
2020	4,927	5	985	986	986	-	-	-	-	-	-	-
2021	(1,090,857)	5	(218,171)	(218,171)	(218,172)	(218,172)	-	-	-	-	-	-
2022	1,665,094	5	333,019	333,019	333,019	333,019	333,018	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			93,893	100,529	115,833	114,847	333,018	-	-	-	-	-