



TOWN OF LITTLETON, MASSACHUSETTS

OTHER POSTEMPLOYMENT BENEFITS PROGRAM

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

Disclosures as of
June 30, 2023

KMS Actuarial, LLC
52 Hunt Road
Kingston, NH 03848

January, 2024



January 10, 2024

Ms. Robin Healy
Treasurer/Collector/Assistant Finance Director
Town of Littleton
P.O. Box 1305
Littleton, MA 01460

Dear Robin:

We are pleased to present the enclosed report of the July 1, 2022 actuarial valuation of the retiree health care benefits for the Town of Littleton. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2023 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, 2022 and rolled forward to the plan's measurement date of June 30, 2023.

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 Littleton as well as health plan rates provided by the Town. 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 6%, the rate that reflects the long-term expected rate of return on OPEB plan assets. The long-term expected rate of return is based on the target allocations provided in the investment policy statement and long-term expected rates of return by asset class provided by the Town's investment consultant, Bartholomew & Company.

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 Middlesex County 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. The potential range of future measurements was not assessed as it was outside the scope of the project.

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 valuation report is intended for the sole use of the Town of Littleton and may only be provided to other parties in its entirety, unless expressly authorized by KMS Actuaries. Further, it is intended to provide information to comply with the stated purpose of the report. It may not be appropriate for other purposes.

KMS Actuaries is completely independent of the Town of Littleton 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 Littleton, other than as consulting actuary for this assignment, that would impair our independence.

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. All other assumptions and methods have been selected based on the expertise of the undersigned pension actuaries, Linda L. Bournival, FSA, EA and Amanda J. Makarevich, FSA.

The undersigned credentialed actuaries agree that the analysis, assumptions and results are overall reasonable. They 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.

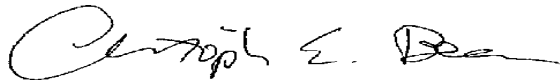
Respectfully submitted,



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EXECUTIVE SUMMARY

Purpose of Report

This report presents the results of the actuarial valuation of the Town of Littleton's retiree health care benefits as of July 1, 2022. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2023 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 Littleton. 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 Littleton.

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 Littleton Other Postemployment Benefits Program

The Town of Littleton 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, 2023	June 30, 2022	% Change
Valuation Date	July 1, 2022	July 1, 2020	
Membership Data			
Active Plan Members	386	394	(2.0%)
Inactive Plan Members (excludes covered spouses)	176	164	7.3%
Total Plan Members	562	558	0.7%
Covered Spouses	89	Not Available	
Covered Payroll	\$25,756,169	Not Available	
Net OPEB Liability			
Discount Rate	6.00%	6.50%	
Total OPEB Liability (TOL)	\$35,946,001	\$29,221,422	23.0%
Fiduciary Net Position (FNP)	\$24,559,017	\$20,124,047	22.0%
Net OPEB Liability	\$11,386,984	\$9,097,375	25.2%
FNP as % of TOL	68.3%	68.9%	
OPEB Expense			
OPEB Expense	\$2,148,905	\$1,420,391	51.3%
Deferred Outflows	\$9,703,548	\$7,166,385	
Deferred Inflows	\$6,620,547	\$8,160,102	
Recognition Period	7.71	7.50	

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, the difference between expected and actual experience resulted in an actuarial loss of approximately \$1,476,000. This loss is primarily attributable to the following:

- ◆ a loss due to several new early retirees since the prior valuation
- ◆ a loss due to a retiree who was previously assumed to be eligible for Medicare actually not being eligible for Medicare
- ◆ a gain due to lower than expected medical premiums since the prior valuation
- ◆ a gain due to more retirees and survivors dying or dropping coverage than expected since the prior valuation

Changes of Assumptions

The discount rate changed from 6.5% as of June 30, 2022 to 6% as of June 30, 2023. In addition, many other assumptions were updated in this valuation, including the inflation rate, healthcare trend rates, and mortality tables and mortality improvement rates. 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	(58,000)
◆ Increase due to change in Trend Assumption	1,046,000
◆ Increase due to change in Mortality Tables and Mortality Improvement Rates	301,000
◆ Increase due to change in Discount Rate	2,283,000
Total	\$ 3,572,000

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, 2023, is \$35,946,001. The Total OPEB Liability as of the prior measurement date, June 30, 2022, was \$29,221,422. During the current measurement period ending June 30, 2023, the Total OPEB Liability increased by \$6,724,579, or 23.0%. The development of the Total OPEB Liability for the current measurement period is shown in Section 1, Exhibit 1.2.

EXECUTIVE SUMMARY

Fiduciary Net Position

The Fiduciary Net Position is equal to the market value of assets and as of the current measurement date, June 30, 2023, is \$24,559,017. The Fiduciary Net Position as of the prior measurement date, June 30, 2022, was \$20,124,047. During the plan years ended June 30, 2023 and June 30, 2022, the actual rates of return were 8.51% and -15.59%, respectively. The expected long-term rate of return is 6.00%. The Fiduciary Net Position is shown in Section 1, Exhibit 1.1.

Employer Future Period Contributions

Contributions will be made based on the actuarially determined contributions developed in the most recent actuarial valuation.

Discount Rate

As of the June 30, 2023 measurement date, the OPEB plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability. Projected benefit payments are discounted to their actuarial present value using a single discount rate of 6%.

OPEB Expense

The OPEB Expense for the current measurement period ending June 30, 2023, is \$2,148,905. Benefit changes are recognized immediately and experience gains and losses and assumption changes developed in this valuation are recognized over 7.71 years. Investment gains and losses are recognized over 5 years. The OPEB Expense for the prior measurement period was \$1,420,391. 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, other than medical trend rates in the short term, do not reflect the potential impact of the COVID-19 pandemic on the OPEB program. Especially in the short range, it is very likely that the pandemic materially affected 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 Section 20 of Chapter 32B of the Massachusetts General Laws 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, contributions from employers to the OPEB trust and earnings on those contributions 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

2023

2022

Trust Fund Composition at Fiscal Year-End		
Domestic Equity	\$9,848,166	\$8,765,811
International Equity	5,267,909	3,898,430
Domestic Bond	5,921,179	5,047,461
Alternative	2,171,017	1,326,101
International Bond	1,227,951	985,842
Cash & Equivalents	122,795	100,402
Total Market Value of Assets	\$24,559,017	\$20,124,047
Asset Activity		
Market value, beginning of year	\$20,124,047	\$21,650,957
Employer Premiums	1,310,029	1,278,495
OPEB Trust Contributions	2,625,985	2,011,465
Benefit Payments	(1,310,029)	(1,278,495)
Administrative Expenses	-	-
Investment Return	1,808,985	(3,538,375)
Market value, end of year	\$24,559,017	\$20,124,047
Money-Weighted Rate of Return	8.51%	-15.59%
(Gain) / Loss on OPEB Plan Investments		
Projected earnings	\$1,382,480	\$1,471,655
Actual earnings	1,808,985	(3,538,375)
(Gain) / Loss on OPEB plan investments	(\$426,505)	\$5,010,030

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, 2023 measurement date was developed from an actuarial valuation as of July 1, 2022 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, 2022 to the end of the measurement period, June 30, 2023 is shown below:

Measurement Date	June 30, 2023
1. Total OPEB Liability, beginning of year:	
a. Actives	\$15,829,311
b. Retirees, Covered Spouses and Survivors	13,392,111
c. Total OPEB Liability at 6.5% (a. + b.)	\$29,221,422
2. Service Cost	\$1,060,820
3. Expected Benefit Payments	
a. Current retirees	(\$1,234,696)
b. Future retirees	(75,333)
c. Total (a. + b.)	(\$1,310,029)
4. Interest [6.5% x (1.c. + 2. + .5 x 3.c)]	\$1,925,770
5. Changes of benefit terms	\$0
6. Differences between expected and actual experience	\$1,475,538
7. Changes of assumptions or other inputs	\$3,572,480
8. Total OPEB Liability, end of year (1.c. + 2. + 3.c. + 4. + 5. + 6. + 7.)	
a. Actives	\$18,500,813
b. Retirees, Covered Spouses and Survivors	17,445,188
c. Total OPEB Liability at 6% (a. + b.)	\$35,946,001

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.3 - Development of Actuarially Determined Employer Contributions

FYE June 30	(1) Normal Cost	(2) Actuarial Accrued Liability	(3) Expected Benefit Payments	(4) Actuarial Value of Assets	(5) Unfunded Actuarial Accrued Liability (2) - (4)	(6) Amortization Amount	(7) Interest	(8) ADEC (1) + (6) + (7)	(9) OPEB Trust Contributions	(10) Total Employer Contributions
2023	1,060,820	29,221,422	1,310,029	20,124,047	9,097,375	712,402	115,259	1,888,481	2,625,985	3,936,014
2024	1,629,547	35,946,001	1,432,799	24,559,017	11,386,984	873,235	150,167	2,652,949	1,220,150	2,652,949
2025	1,686,582	38,354,924	1,549,311	27,210,350	11,144,574	873,399	153,599	2,713,580	1,164,269	2,713,580
2026	1,745,612	40,848,883	1,691,095	29,961,438	10,887,445	873,091	157,122	2,775,825	1,084,730	2,775,825
2027	1,806,708	43,409,076	1,769,938	32,793,861	10,615,215	872,962	160,780	2,840,450	1,070,512	2,840,450
2028	1,869,943	46,106,468	1,948,329	35,779,679	10,326,789	872,932	164,573	2,907,448	959,119	2,907,448
2029	1,935,391	48,849,068	2,157,013	38,827,980	10,021,088	872,917	168,498	2,976,806	819,793	2,976,806
2030	2,003,130	51,610,745	2,246,885	41,913,684	9,697,061	872,823	172,557	3,048,510	801,625	3,048,510
2031	2,073,240	54,517,397	2,273,246	45,163,705	9,353,692	873,361	176,796	3,123,397	850,151	3,123,397
2032	2,145,803	57,645,625	2,500,539	48,656,474	8,989,151	873,581	181,163	3,200,547	700,008	3,200,547
2033	2,220,906	60,804,451	2,696,722	52,201,947	8,602,504	873,351	185,655	3,279,912	583,190	3,279,912
2034	2,298,638	64,030,433	2,794,261	55,837,530	8,192,903	873,444	190,325	3,362,407	568,146	3,362,407
2035	2,379,090	67,431,948	2,974,756	59,673,321	7,758,627	872,736	195,110	3,446,936	472,180	3,446,936
2036	2,462,358	70,937,001	3,040,754	63,637,957	7,299,044	873,091	200,127	3,535,576	494,822	3,535,576
2037	2,548,541	74,672,672	3,170,498	67,861,162	6,811,510	873,271	205,309	3,627,121	456,623	3,627,121
2038	2,637,740	78,590,259	3,392,648	72,295,725	6,294,534	873,028	210,646	3,721,414	328,766	3,721,414
2039	2,730,061	82,608,734	3,445,233	76,861,937	5,746,797	873,373	216,206	3,819,640	374,407	3,819,640
2040	2,825,613	86,912,038	3,506,998	81,746,209	5,165,829	872,606	221,893	3,920,112	413,114	3,920,112
2041	2,924,509	91,511,235	3,621,712	86,960,419	4,550,816	873,477	227,879	4,025,865	404,153	4,025,865
2042	3,026,867	96,373,108	3,833,597	92,475,128	3,897,980	872,031	233,934	4,132,832	299,235	4,132,832
2043	3,132,807	101,417,044	4,016,343	98,209,538	3,207,506	873,980	240,407	4,247,194	230,851	4,247,194
2044	3,242,455	106,687,764	4,189,136	104,214,226	2,473,538	874,042	246,990	4,363,487	174,351	4,363,487
2045	3,355,941	112,213,052	4,257,336	110,517,587	1,695,465	873,951	253,794	4,483,686	226,350	4,483,686
2046	3,473,399	118,119,937	4,371,952	117,249,132	870,805	870,805	260,652	4,604,856	232,904	4,604,856
2047	3,594,968	124,387,736	4,300,961	124,387,736	-	-	215,698	3,810,666	-	3,810,666
2048	3,720,792	131,233,556	4,396,124	131,233,556	-	-	223,248	3,944,040	-	3,944,040
2049	3,851,020	138,525,522	4,470,912	138,525,522	-	-	231,061	4,082,081	-	4,082,081
2050	3,985,806	146,316,049	4,482,403	146,316,049	-	-	239,148	4,224,954	-	4,224,954
2051	4,125,309	154,705,050	4,611,566	154,705,050	-	-	247,519	4,372,828	-	4,372,828
2052	4,269,695	163,612,282	4,536,772	163,612,282	-	-	256,182	4,525,877	-	4,525,877

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.1 - Plan Description

Plan Administration

The Town of Littleton 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, 2023, OPEB plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefit payments ¹	176
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	386
	<u>562</u>

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

Contributions will be made based on the actuarially determined contributions developed in the most recent actuarial valuation.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

The components of the net OPEB liability at June 30, 2023, were as follows:

Total OPEB liability	\$ 35,946,001
Fiduciary net position	(24,559,017)
Net OPEB liability	\$ 11,386,984

Fiduciary net position as a percentage of the total OPEB liability 68.32%

Actuarial Assumptions

The total OPEB liability was determined by an actuarial valuation as of July 1, 2022, rolled forward to the measurement date and using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.5% per year, based on current economic data, analyses from economists and other experts, and professional judgment.
Discount rate	6%, net of investment expenses, including inflation.
Healthcare cost trend rate	8% for 2022, decreasing 0.5% per year to 6%, then grading down to an ultimate trend rate of 4.1%, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical trend rate is reached in 2075.
Pre-Retirement Mortality - General and Public Safety employees	RP-2014 Blue Collar Employee Mortality Table, projected with generational mortality improvement using scale MP-2021.
Healthy Retiree Mortality - General and Public Safety employees	RP-2014 Blue Collar Healthy Annuitant Mortality Table, projected with generational mortality improvement using scale MP-2021.
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-2021
Pre-Retirement Mortality - Teachers	PUB-2010 Teachers Headcount-Weighted Employee Mortality Table, base year 2010, projected with generational mortality improvement using Scale MP-2021.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

Healthy Retiree Mortality - Teachers

PUB-2010 Teachers Headcount-Weighted Retiree Mortality Table, base year 2010, projected with generational mortality improvement using Scale MP-2021.

Disabled Retiree Mortality - Teachers

PUB-2010 Teachers Headcount-Weighted Retiree Mortality Table, base year 2010, projected with generational mortality improvement using Scale MP-2021.

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, 2023 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rates of Return ¹
Domestic Equity	40%	3.90%
International Equity	20%	5.75%
Domestic Bond	25%	1.39%
Alternative	10%	3.14%
International Bond	5%	1.21%
Cash & Equivalents	0%	0.00%
Total	100%	

¹ provided by the Town's investment consultant, Bartholomew & Company.

Discount Rate

The discount rate used to measure the total OPEB liability was 6%. 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 available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

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 6 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (5 percent) or 1-percentage point higher (7 percent) than the current rate:

	1% Decrease (5%)	Assumed Discount Rate (6%)	1% Increase (7%)
Total OPEB Liability	\$ 41,303,583	\$ 35,946,001	\$ 31,600,868
Fiduciary Net Position	(24,559,017)	(24,559,017)	(24,559,017)
Net OPEB Liability	\$ 16,744,566	\$ 11,386,984	\$ 7,041,851
% Change in NOL	47.1%		-38.2%

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 3.1%) or 1-percentage point higher (9% year 1 decreasing to 5.1%) than the current healthcare cost trend rates:

	1% Decrease 7% Year 1 Decreasing to 3.1%	Assumed Healthcare Cost Trend Rates 8% Year 1 Decreasing to 4.1%	1% Increase 9% Year 1 Decreasing to 5.1%
Total OPEB Liability	\$ 30,887,741	\$ 35,946,001	\$ 42,333,316
Fiduciary Net Position	(24,559,017)	(24,559,017)	(24,559,017)
Net OPEB Liability	\$ 6,328,724	\$ 11,386,984	\$ 17,774,299
% Change in NOL	-44.4%		56.1%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30	2023	2022	2021	2020	2019
Total OPEB Liability					
Service cost	\$ 1,060,820	\$ 1,062,792	\$ 1,225,955	\$ 1,022,757	\$ 923,015
Interest	1,925,770	1,828,880	2,285,218	2,157,973	1,949,574
Changes of benefit terms	-	-	-	(406,443)	-
Differences between expected and actual experience	1,475,538	-	(9,876,472)	-	(1,661,369)
Changes of assumptions	3,572,480	(104,824)	2,019,866	3,264,788	2,595,779
Benefit payments	(1,310,029)	(1,278,495)	(1,141,254)	(1,179,063)	(1,077,132)
Net change in total OPEB liability	\$ 6,724,579	\$ 1,508,353	\$ (5,486,687)	\$ 4,860,012	\$ 2,729,867
Total OPEB liability—beginning	\$ 29,221,422	\$ 27,713,069	\$ 33,199,756	\$ 28,339,744	\$ 25,609,877
Total OPEB liability—ending (a)	\$ 35,946,001	\$ 29,221,422	\$ 27,713,069	\$ 33,199,756	\$ 28,339,744
Plan Fiduciary Net Position					
Contributions—employer	\$ 3,936,014	\$ 3,289,960	\$ 3,839,864	\$ 3,441,437	\$ 3,498,393
Net investment income	1,808,985	(3,538,375)	4,325,944	274,805	664,043
Benefit payments	(1,310,029)	(1,278,495)	(1,141,254)	(1,179,063)	(1,077,132)
Administrative expenses	-	-	-	-	-
Other	-	-	-	-	-
Net change in plan fiduciary net position	\$ 4,434,970	\$ (1,526,910)	\$ 7,024,554	\$ 2,537,179	\$ 3,085,304
Plan fiduciary net position—beginning	\$ 20,124,047	\$ 21,650,957	\$ 14,626,403	\$ 12,089,224	\$ 9,003,920
Plan fiduciary net position—ending (b)	\$ 24,559,017	\$ 20,124,047	\$ 21,650,957	\$ 14,626,403	\$ 12,089,224
Net OPEB liability—ending (a) – (b)	\$ 11,386,984	\$ 9,097,375	\$ 6,062,112	\$ 18,573,353	\$ 16,250,520
Plan fiduciary net position as a percentage of the total OPEB liability	68.32%	68.87%	78.13%	44.06%	42.66%
Covered payroll	\$ 25,756,169	Not Available	\$ 22,079,971	\$ 23,272,636	\$ 21,401,305
Net OPEB liability as a percentage of covered payroll	44.21%	Not available	27.46%	79.81%	75.93%
Discount Rate	6.00%	6.50%	6.50%	6.75%	7.50%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios, continued

Fiscal Year Ended June 30	2018	2017	2016	2015	2014
Total OPEB Liability					
Service cost	\$ 887,514	\$ 853,379			
Interest	1,818,827	1,690,414			
Changes of benefit terms	-	-			
Differences between expected and actual experience	-	-			
Changes of assumptions	-	-			
Benefit payments	(919,952)	(811,562)			
Net change in total OPEB liability	\$ 1,786,389	\$ 1,732,231			
Total OPEB liability—beginning	\$ 23,823,488	\$ 22,091,257			
Total OPEB liability—ending (a)	\$ 25,609,877	\$ 23,823,488			
Plan Fiduciary Net Position					
Contributions—employer	\$ 2,352,890	\$ 1,959,853			
Net investment income	461,845	541,215			
Benefit payments	(919,952)	(811,562)			
Administrative expenses	-	-			
Other	-	-			
Net change in plan fiduciary net position	\$ 1,894,783	\$ 1,689,506			
Plan fiduciary net position—beginning	\$ 7,109,137	\$ 5,419,631			
Plan fiduciary net position—ending (b)	\$ 9,003,920	\$ 7,109,137			
Net OPEB liability—ending (a) – (b)	\$ 16,605,957	\$ 16,714,351			
Plan fiduciary net position as a percentage of the total OPEB liability	35.16%	29.84%			
Covered payroll	\$ 19,528,449	\$ 20,907,161			
Net OPEB liability as a percentage of covered payroll	85.03%	79.95%			
Discount Rate	7.50%	7.50%			

Note: Only 7 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

Notes to Schedule

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 6.5% as of June 30, 2022 to 6% as of June 30, 2023. In addition, many other assumptions were updated in this valuation, including the inflation rate, healthcare trend rates, and mortality tables and mortality improvement rates.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Investment Returns

Fiscal Year Ended June 30	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expenses	8.51%	-15.59%	26.99%	2.11%	6.73%	5.90%	8.66%			

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 7 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, 2022	\$ 20,124,047	12	1.00	\$ 21,835,880
Monthly net external cash flows:				
July	-	11	0.92	-
August	-	10	0.83	-
September	1,500,000	9	0.75	1,594,714
October	-	8	0.67	-
November	50,000	7	0.58	52,439
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	1,075,985	0	0.00	1,075,985
Ending value - June 30, 2023				\$ 24,559,017
Money-weighted rate of return:				8.51%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	2023	2022	2021	2020	2019
Actuarially determined contribution	\$ 1,888,481	\$ 1,642,881	\$ 2,843,309	\$ 2,519,732	\$ 2,657,431
Contributions in relation to the actuarially determined contribution	<u>3,936,014</u>	<u>3,289,960</u>	<u>3,839,864</u>	<u>3,441,437</u>	<u>3,498,393</u>
Contribution deficiency (excess)	<u>\$ (2,047,533)</u>	<u>\$ (1,647,079)</u>	<u>\$ (996,555)</u>	<u>\$ (921,705)</u>	<u>\$ (840,962)</u>
Covered payroll	\$ 25,756,169	Not Available	\$ 22,079,971	\$ 23,272,636	\$ 21,401,305
Contributions as a percentage of covered payroll	15.28%	Not available	17.39%	14.79%	16.35%
Discount rate	6.50%	6.50%	6.75%	7.50%	7.50%
Inflation	2.50%	2.40%	2.20%	2.40%	2.60%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Schedule of Employer Contributions, continued

Fiscal Year Ended June 30	2018	2017	2016	2015	2014
Actuarially determined contribution	\$ 2,383,507	\$ 2,602,241			
Contributions in relation to the actuarially determined contribution	<u>2,352,890</u>	<u>1,959,853</u>			
Contribution deficiency (excess)	<u>\$ 30,617</u>	<u>\$ 642,388</u>			
Covered payroll	\$ 19,528,449	\$ 20,907,161			
Contributions as a percentage of covered payroll	12.05%	9.37%			
Discount rate	7.50%	6.70%			
Inflation	3.00%	3.00%			

Note: Only 7 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	Level dollar amount over 24 years on a closed amortization period for partial pre-funding.
Amortization period	24 years
Asset valuation method	Market value
Healthcare cost trend rates	8% for 2022, decreasing 0.5% per year to 6%, then grading down to an ultimate trend rate of 4.1%, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical trend 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, 2023		
	Experience Losses	Experience Gains	Amounts Recognized in OPEB Expense through June 30, 2023	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2019	\$ -	\$ 1,661,369	\$ (1,043,575)	\$ -	\$ 617,794
2020	-	-	-	-	-
2021	-	9,876,472	(3,950,589)	-	5,925,883
2022	-	-	-	-	-
2023	1,475,538	-	191,380	1,284,158	-
Total				<u>\$ 1,284,158</u>	<u>\$ 6,543,677</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, 2023		
	Increases in the Total OPEB Liability	Decreases in the Total OPEB Liability	Amounts Recognized in OPEB Expense through June 30, 2023	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2019	\$ 2,595,779	\$ -	\$ 1,630,515	\$ 965,264	\$ -
2020	3,264,788	-	1,640,596	1,624,192	-
2021	2,019,866	-	807,945	1,211,921	-
2022	-	104,824	(27,954)	-	76,870
2023	3,572,480	-	463,357	3,109,123	-
Total				<u>\$ 6,910,500</u>	<u>\$ 76,870</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, 2023
Year	Investment Earnings Less Than Projected (a)	Investment Earnings Greater Than Projected (b)	Amounts Recognized in OPEB Expense through June 30, 2023 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) + (c)
2019	\$ 75,432	\$ -	\$ 75,432	\$ -	\$ -
2020	702,166	-	561,732	140,434	-
2021	-	3,240,895	(1,944,537)	-	1,296,358
2022	5,010,030	-	2,004,012	3,006,018	-
2023	-	426,505	(85,301)	-	341,204
Subtotal				\$ 3,146,452	\$ 1,637,562
Net				\$ 1,508,890	\$ -

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

Year ended June 30

2024	\$	529,709
2025	\$	389,275
2026	\$	1,032,760
2027	\$	(98,344)
2028	\$	116,990
Thereafter		1,112,611
Deferred Outflows	\$	9,703,548
Deferred Inflows	\$	6,620,547

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, 2023 is presented below:

Fiscal Year Ended June 30, 2023

Measurement Date	6/30/2023
1. Service cost	\$ 1,060,820
2. Interest on the total OPEB liability	
a. Total OPEB liability, beginning of year	29,221,422
b. Service cost, beginning of year	1,060,820
c. Benefit payments	(1,310,029)
d. Interest on total OPEB liability = 6.5% times (a. + b. + .5 times c.)	1,925,770
3. Differences between expected and actual experience	(1,334,198)
4. Changes of benefit terms	-
5. Changes of assumptions	1,454,947
6. Projected earnings on OPEB plan investments	
a. Plan fiduciary net position, beginning of year	20,124,047
b. Contributions - Employer	3,936,014
c. Benefit payments	(1,310,029)
d. Administrative expenses and other	-
e. Total projected earnings	(1,382,480)
7. Differences between projected and actual earnings on OPEB plan investments	424,046
8. OPEB plan administrative expenses	-
9. Other changes in fiduciary net position	-
10. Total OPEB Expense	\$ 2,148,905

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 Middlesex County 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, 2023	Individual	Family
HMO	\$910.53	\$2,388.05
PPO	\$1,106.18	\$2,901.20

Medicare Plans - January 1, 2024

Medex	\$348.01
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Participant Contributions Retired employees contribute 30% of the health plan premium.

Continuation of Coverage to Spouse After Death of Retiree Surviving spouse may continue coverage for lifetime by paying 30% of the required medical premium for employees hired prior to July 1, 2010. For employees hired after July 1, 2010, surviving spouses may continue coverage for lifetime by paying 50% of the required medical premium.

Dental Coverage Dental coverage is provided. Retirees contribute 100% of the monthly premiums.

Life Insurance Coverage Retirees are eligible for a \$5,000 life insurance benefit. The total monthly cost is \$3.95. Retirees contribute \$1.18 towards the monthly premiums.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Valuation Date	July 1, 2022
Disclosure Date	June 30, 2023
GASB 75 Reporting Date	June 30, 2023
Long-Term Expected Rate of Return	<p>6%, net of investment expenses and including inflation at 2.5%. Previously, 6.5%.</p> <p>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.</p>
Municipal Bond Rate	3.65%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2023.
Discount Rate (GASB)	<p>6%, compounded annually, for the measurement as of June 30, 2023. 6.5%, compounded annually, for the measurement as of June 30, 2022.</p> <p>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.</p>
Discount Rate (ADEC)	6.5%, compounded annually, for development of the Actuarially Determined Contribution (ADEC) as of June 30, 2023.
Amortization Method	Level dollar amount over 24 years on a closed 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%
Ultimate	4.10%

Trend rates after year 5 grade down to the ultimate rate of 4.1 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

Not applicable as retirees pay 100% of the dental premium.

Inflation

2.5% 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 - 80% of eligible retired employees will elect to participate.

Dental - Not applicable as retirees pay 100% of dental premium.

Life - 80% 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.

60% 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, 2022 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	\$4,470	\$5,248	\$4,470	\$5,248
20-24	3,522	5,587	3,522	5,587
25-29	3,665	8,242	3,665	8,242
30-34	4,604	10,415	4,604	10,415
35-39	5,775	10,728	5,775	10,728
40-44	7,196	10,987	7,196	10,987
45-49	9,083	12,060	9,083	12,060
50-54	11,970	14,187	11,970	14,187
55-59	15,555	16,404	15,555	16,404
60-64	19,962	19,524	19,962	19,524
65-69	2,955	2,878	24,906	23,404
70-74	3,541	3,395	29,841	27,597
75-79	4,182	3,939	35,249	32,049
80-84	4,807	4,517	40,515	36,742
85-89	5,355	5,050	46,370	41,945
90-94	5,829	5,389	46,370	41,945
95+	6,195	5,212	46,370	41,945

Retiree Contributions

Annual per capita participant contributions for the fiscal year beginning July 1, 2022 are as follows:

Plan	Contribution	
	30%	50%
Non-Medicare	\$ 3,705	\$6,175
Medicare	1,119	1,865

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.

Actuarial Value of Assets

Market value of assets as of the disclosure date

Census Data

Employee and retiree data were compiled and submitted by the Town as of June 30, 2023. 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 Employee Mortality Table, projected with generational mortality improvement using scale MP-2021.

Healthy Retiree Mortality

Healthy retiree mortality rates for General and Public Safety employees are based on the RP-2014 Blue Collar Healthy Annuitant Mortality Table, projected with generational mortality improvement using scale MP-2021.

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-2021.

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	0.00%	0.00%	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	50.00%	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 improvement using Scale MP-2021.

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 improvement using Scale MP-2021.

Disabled Retiree Mortality

Disabled retiree mortality rates for Teachers are based on the PUB-2010 Teachers Headcount-Weighted Retiree Mortality Table, base year 2010, projected with generational mortality improvement using Scale MP-2021.

Turnover Rates

Turnover rates for Teachers are as follows:

	Service					
	0		5		10+	
Age	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, 2022

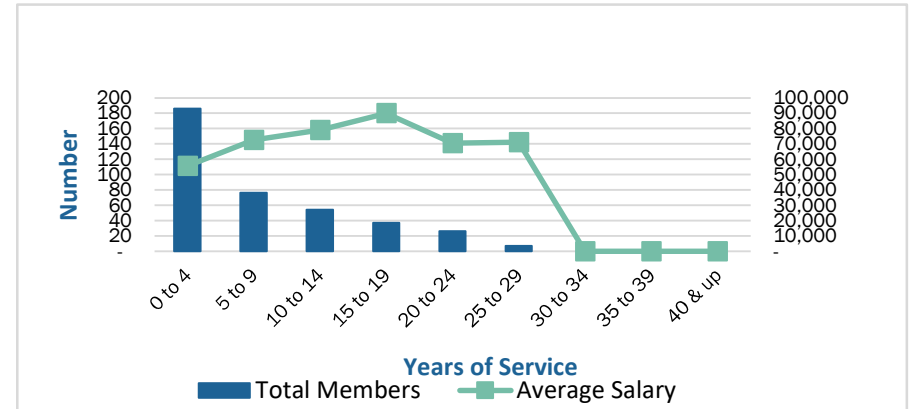
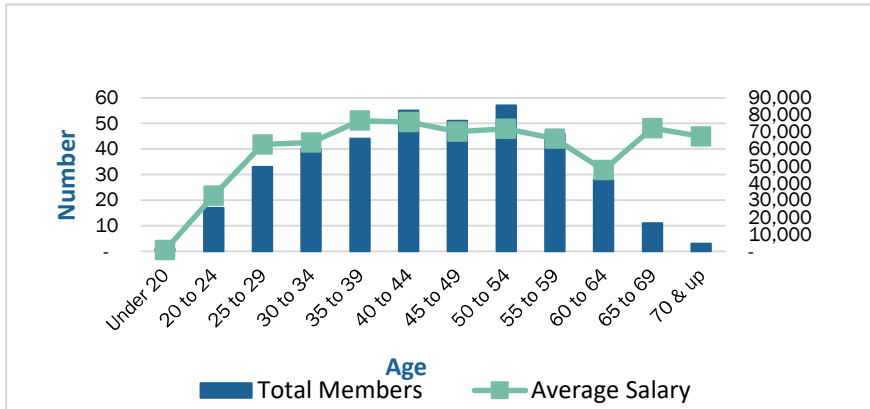
Age	Years of Service									Total	Total Salary	Average Salary
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up			
Under 20	1	-	-	-	-	-	-	-	-	1	666	666
20 to 24	17	-	-	-	-	-	-	-	-	17	555,147	32,656
25 to 29	29	4	-	-	-	-	-	-	-	33	2,068,344	62,677
30 to 34	26	10	3	1	-	-	-	-	-	40	2,553,723	63,843
35 to 39	25	10	8	1	-	-	-	-	-	44	3,372,758	76,654
40 to 44	27	13	6	7	2	-	-	-	-	55	4,166,881	75,761
45 to 49	21	9	8	4	8	1	-	-	-	51	3,576,292	70,123
50 to 54	20	12	15	6	2	2	-	-	-	57	4,096,826	71,874
55 to 59	10	9	8	11	8	-	-	-	-	46	3,034,799	65,974
60 to 64	9	6	4	4	4	1	-	-	-	28	1,334,156	47,648
65 to 69	1	2	2	2	2	2	-	-	-	11	794,502	72,227
70 & up	-	1	-	1	-	1	-	-	-	3	202,076	67,359
Total	186	76	54	37	26	7	-	-	-	386	25,756,169	66,726
Total Salary	10,325,931	5,508,376	4,266,469	3,328,227	1,829,964	497,201	-	-	-			
Average Salary	55,516	72,479	79,009	89,952	70,383	71,029	-	-	-			

Average Age:

45.0

Average Service:

7.6



SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.2 - Retired Members, Covered Spouses and Survivors as of July 1, 2022

Non-Medicare Plans			Medicare Plans		
Age	HMO	PPO	Medex	Medex (Low Income Subsidy)	Total
Under 40	0	0	0	0	0
40 to 44	0	0	0	0	0
45 to 49	1	0	0	0	1
50 to 54	1	1	0	0	2
55 to 59	8	2	1	0	11
60 to 64	11	0	5	0	16
65 to 69	1	0	28	0	29
70 to 74	1	0	38	0	39
75 to 79	1	0	32	0	33
80 to 84	0	0	8	1	9
85 to 89	0	0	7	1	8
90+	0	0	4	0	4
Total	24	3	123	2	152
Covered Spouses	16	1	72	0	89

Average Age: 72.7

In addition, there are 24 retirees that are not covered under any medical plan but are covered under a life insurance 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	Public Safety	Teachers	Dispatch	Water	Total
Summary of Member Data Used in Valuation						
Active Members	56	46	268	7	9	386
Average Age	48.7	39.2	45.5	34.7	44.2	45.0
Average Service	6.8	6.8	8.1	4.5	6.0	7.6
Covered Payroll	3,823,514	4,785,684	15,891,121	483,553	772,297	25,756,169
Retired Members and Survivors	37	14	120	0	5	176
Average Age	75.3	66.1	72.9	-	66.4	72.7
Covered Spouses	13	8	64	0	4	89
Expected Benefit Payments	229,737	180,799	815,148	36	84,309	1,310,029
OPEB Trust contributions	356,143	387,469	1,820,672	11,701	50,000	2,625,985
Total Employer Contributions	585,880	568,268	2,635,820	11,737	134,309	3,936,014
Beginning Net OPEB Liability - June 30, 2022						
Total OPEB Liability	4,578,978	4,003,632	19,206,420	245,549	1,186,843	29,221,422
Fiduciary Net Position	3,175,578	2,776,568	13,319,891	170,291	681,719	20,124,047
Net OPEB Liability	1,403,400	1,227,064	5,886,529	75,258	505,124	9,097,375
Total OPEB Liability, beginning of year	4,578,978	4,003,632	19,206,420	245,549	1,186,843	29,221,422
Service cost	119,714	291,654	572,741	15,553	61,158	1,060,820
Interest	297,950	273,318	1,259,152	16,970	78,380	1,925,770
Changes of benefit terms	0	0	0	0	0	0
Differences between expected and actual experience	(320,886)	425,813	1,544,059	(133,530)	(39,918)	1,475,538
Changes of assumptions	344,416	398,182	2,722,423	12,885	94,574	3,572,480
Benefit payments	(229,737)	(180,799)	(815,148)	(36)	(84,309)	(1,310,029)
Net change in total OPEB liability	211,457	1,208,168	5,283,227	(88,158)	109,885	6,724,579
Total OPEB Liability, end of year	4,790,435	5,211,800	24,489,647	157,391	1,296,728	35,946,001
Ending Net OPEB Liability - June 30, 2023						
Total OPEB Liability	4,790,435	5,211,800	24,489,647	157,391	1,296,728	35,946,001
Fiduciary Net Position	3,814,891	3,414,413	16,340,476	196,906	792,331	24,559,017
Net OPEB Liability	975,544	1,797,387	8,149,171	(39,515)	504,397	11,386,984

SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	Town	Public Safety	Teachers	Dispatch	Water	Total
Total Deferred Outflows of Resources						
Differences between Expected and Actual Experience	201,227	175,943	844,041	10,791	52,157	1,284,158
Changes in Assumptions	1,082,871	946,809	4,542,078	58,069	280,673	6,910,500
Differences between Expected and Actual Earnings on OPEB Plan Investments	238,103	208,186	998,718	12,768	51,115	1,508,890
Total Deferred Outflows of Resources	1,522,201	1,330,937	6,384,837	81,628	383,945	9,703,548
Total Deferred Inflows of Resources						
Differences between Expected and Actual Experience	1,025,390	896,550	4,300,975	54,987	265,775	6,543,677
Changes in Assumptions	12,045	10,532	50,524	646	3,122	76,870
Differences between Expected and Actual Earnings on OPEB Plan Investments	0	0	0	0	0	0
Total Deferred Inflows of Resources	1,037,435	907,082	4,351,500	55,633	268,897	6,620,547
Total OPEB Expense (Income)	(508,730)	549,296	2,288,346	(140,711)	(39,296)	2,148,905
Sensitivity of the Net OPEB Liability to Changes in the Discount Rate						
Current Discount Rate: 6%	975,544	1,797,387	8,149,171	(39,515)	504,397	11,386,984
1% Decrease in the Discount Rate: 5%	1,689,536	2,574,181	11,799,237	(16,057)	697,668	16,744,566
1% Increase in the Discount Rate: 7%	396,479	1,167,387	5,188,876	(58,540)	347,649	7,041,851
Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates						
Current Trend Rates	975,544	1,797,387	8,149,171	(39,515)	504,397	11,386,984
1% Decrease in Trend Rates	301,442	1,063,991	4,703,030	(61,663)	321,924	6,328,724
1% Increase in Trend Rates	1,826,766	2,723,482	12,500,784	(11,548)	734,815	17,774,299
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in OPEB Expense						
2024	83,290	72,825	349,361	4,466	19,767	529,709
2025	61,209	53,518	256,739	3,282	14,527	389,275
2026	162,389	141,985	681,139	8,708	38,539	1,032,760
2027	(15,463)	(13,520)	(64,862)	(829)	(3,670)	(98,344)
2028	18,395	16,084	77,159	986	4,366	116,990
Thereafter	174,945	152,963	733,803	9,381	41,519	1,112,611

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.

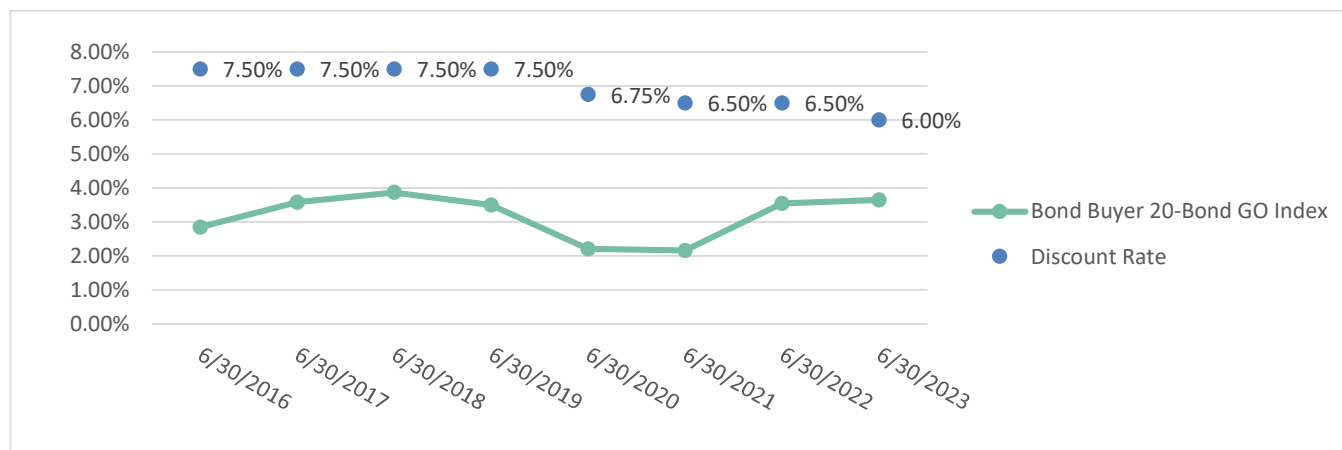
Projected cash flows into and out of the OPEB plan are assumed to be contributions to the OPEB plan, benefit payments, OPEB plan administrative expenses and OPEB plan investment earnings. These projected cash flows are used to project the OPEB plan's fiduciary net position at the beginning of each period. 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 6%, a long-term investment return rate of 6% and a municipal bond rate of 3.65%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2023. The OPEB plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability. Projected benefit payments are discounted to their actuarial present value using a single discount rate of 6%.

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) * 5.58%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2023	28,212,273	-	28,212,273	1,310,029	2,625,985	-	3,936,014
2024	26,679,903	2,519,800	29,199,703	1,432,799	1,220,150	140,622	2,512,327
2025	25,465,358	4,756,335	30,221,693	1,549,311	1,164,269	265,437	2,448,143
2026	24,341,604	6,937,848	31,279,452	1,691,095	1,084,730	387,180	2,388,645
2027	23,334,974	9,039,259	32,374,233	1,769,938	1,070,512	504,454	2,335,996
2028	22,454,672	11,052,659	33,507,331	1,948,329	959,119	616,816	2,290,632
2029	21,461,799	13,218,289	34,680,088	2,157,013	819,793	737,673	2,239,133
2030	20,579,282	15,314,609	35,893,891	2,246,885	801,625	854,662	2,193,848
2031	19,687,593	17,462,584	37,150,177	2,273,246	850,151	974,534	2,148,863
2032	18,773,979	19,676,454	38,450,433	2,500,539	700,008	1,098,084	2,102,463
2033	17,800,500	21,995,698	39,796,198	2,696,722	583,190	1,227,514	2,052,398
2034	16,768,703	24,420,362	41,189,065	2,794,261	568,146	1,362,827	1,999,580
2035	15,945,463	26,685,219	42,630,682	2,974,756	472,180	1,489,222	1,957,714
2036	15,161,069	28,961,687	44,122,756	3,040,754	494,822	1,616,265	1,919,311
2037	14,287,492	31,379,560	45,667,052	3,170,498	456,623	1,751,199	1,875,922
2038	13,402,610	33,862,789	47,265,399	3,392,648	328,766	1,889,780	1,831,634
2039	12,586,173	36,333,515	48,919,688	3,445,233	374,407	2,027,664	1,791,976
2040	11,746,564	38,885,313	50,631,877	3,506,998	413,114	2,170,072	1,750,040
2041	11,059,114	41,344,879	52,403,993	3,621,712	404,153	2,307,333	1,718,532
2042	10,323,046	43,915,087	54,238,133	3,833,597	299,235	2,450,769	1,682,063
2043	9,571,196	46,565,272	56,136,468	4,016,343	230,851	2,598,668	1,648,526
2044	8,791,127	49,310,117	58,101,244	4,189,136	174,351	2,751,849	1,611,638
2045	8,013,768	52,121,020	60,134,788	4,257,336	226,350	2,908,717	1,574,969
2046	7,266,608	54,972,898	62,239,506	4,371,952	232,904	3,067,872	1,536,984
2047	6,646,548	57,771,341	64,417,889	4,300,961	-	3,224,045	1,076,916
2048	6,114,518	60,557,997	66,672,515	4,396,124	-	3,379,559	1,016,565
2049	5,627,893	63,378,160	69,006,053	4,470,912	-	3,536,944	933,968
2050	5,136,677	66,284,588	71,421,265	4,482,403	-	3,699,143	783,260
2051	4,676,414	69,244,595	73,921,009	4,611,566	-	3,864,332	747,234
2052	4,231,080	72,277,164	76,508,244	4,536,772	-	4,033,571	503,201
2053	3,761,747	75,424,286	79,186,033	4,568,666	-	4,209,202	359,464
2054	3,324,442	78,633,102	81,957,544	4,594,314	-	4,388,277	206,037

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) * 5.58%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2055	2,916,201	81,909,857	84,826,058	4,471,549	-	4,571,142	-
2056	2,522,180	85,272,790	87,794,970	4,590,136	-	4,758,818	-
2057	2,165,069	88,702,725	90,867,794	4,552,726	-	4,950,232	-
2058	1,866,242	92,181,925	94,048,167	4,481,184	-	5,144,396	-
2059	1,554,549	95,785,304	97,339,853	4,510,094	-	5,345,489	-
2060	1,232,985	99,513,763	100,746,748	4,469,905	-	5,553,563	-
2061	959,676	103,313,208	104,272,884	4,312,761	-	5,765,599	-
2062	706,016	107,216,419	107,922,435	4,314,096	-	5,983,425	-
2063	557,490	111,142,230	111,699,720	4,277,358	-	6,202,513	-
2064	420,298	115,188,912	115,609,210	4,084,549	-	6,428,346	-
2065	305,873	119,349,659	119,655,532	4,113,436	-	6,660,545	-
2066	222,484	123,620,992	123,843,476	4,069,989	-	6,898,915	-
2067	153,374	128,024,624	128,177,998	4,045,586	-	7,144,669	-
2068	108,990	132,555,238	132,664,228	3,917,705	-	7,397,509	-
2069	59,964	137,247,512	137,307,476	3,842,388	-	7,659,370	-
2070	41,716	142,071,522	142,113,238	3,810,260	-	7,928,584	-
2071	24,514	147,062,687	147,087,201	3,666,813	-	8,207,126	-
2072	11,972	152,223,281	152,235,253	3,595,143	-	8,495,123	-
2073	8,853	157,554,634	157,563,487	3,518,091	-	8,792,650	-
2074	91	163,078,118	163,078,209	3,434,567	-	9,100,899	-
2075	-	168,785,946	168,785,946	3,339,887	-	9,419,435	-
2076	-	174,693,454	174,693,454	3,227,761	-	9,749,116	-
2077	-	180,807,725	180,807,725	3,110,488	-	10,090,335	-
2078	-	187,135,995	187,135,995	2,990,123	-	10,443,496	-
2079	-	193,685,755	193,685,755	2,866,348	-	10,809,019	-
2080	-	200,464,756	200,464,756	2,722,951	-	11,187,334	-
2081	-	207,481,022	207,481,022	2,583,926	-	11,578,891	-
2082	-	214,742,858	214,742,858	2,431,927	-	11,984,152	-
2083	-	222,258,858	222,258,858	2,285,667	-	12,403,598	-
2084	-	230,037,918	230,037,918	2,137,163	-	12,837,723	-
2085	-	238,089,245	238,089,245	1,974,068	-	13,287,044	-
2086	-	246,422,369	246,422,369	1,824,948	-	13,752,090	-

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) * 5.58%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2087	-	255,047,152	255,047,152	1,664,279	-	14,233,414	-
2088	-	263,973,802	263,973,802	1,512,466	-	14,731,583	-
2089	-	273,212,885	273,212,885	1,369,419	-	15,247,188	-
2090	-	282,775,336	282,775,336	1,218,483	-	15,780,840	-
2091	-	292,672,473	292,672,473	1,087,617	-	16,333,169	-
2092	-	302,916,010	302,916,010	953,967	-	16,904,830	-
2093	-	313,518,070	313,518,070	833,446	-	17,496,499	-
2094	-	324,491,202	324,491,202	717,532	-	18,108,877	-
2095	-	335,848,394	335,848,394	610,735	-	18,742,688	-
2096	-	347,603,088	347,603,088	518,528	-	19,398,682	-
2097	-	359,769,196	359,769,196	433,008	-	20,077,635	-
2098	-	372,361,118	372,361,118	360,544	-	20,780,353	-
2099	-	385,393,757	385,393,757	295,040	-	21,507,665	-
2100	-	398,882,538	398,882,538	238,739	-	22,260,433	-
2101	-	412,843,427	412,843,427	189,665	-	23,039,548	-
2102	-	427,292,947	427,292,947	149,516	-	23,845,933	-
2103	-	442,248,200	442,248,200	116,535	-	24,680,540	-
2104	-	457,726,887	457,726,887	89,642	-	25,544,359	-
2105	-	473,747,328	473,747,328	67,991	-	26,438,412	-
2106	-	490,328,484	490,328,484	50,805	-	27,363,756	-
2107	-	507,489,981	507,489,981	37,368	-	28,321,488	-
2108	-	525,252,130	525,252,130	27,029	-	29,312,740	-
2109	-	543,635,955	543,635,955	19,203	-	30,338,686	-
2110	-	562,663,213	562,663,213	13,384	-	31,400,540	-
2111	-	582,356,425	582,356,425	9,139	-	32,499,558	-
2112	-	602,738,900	602,738,900	6,108	-	33,637,043	-
2113	-	623,834,762	623,834,762	3,988	-	34,814,340	-
2114	-	645,668,979	645,668,979	2,539	-	36,032,841	-
2115	-	668,267,393	668,267,393	1,577	-	37,293,991	-
2116	-	691,656,752	691,656,752	953	-	38,599,281	-
2117	-	715,864,738	715,864,738	559	-	39,950,255	-
2118	-	740,920,004	740,920,004	319	-	41,348,514	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 1: Projection of Contributions

Projected Payroll				Projected Contributions			
Year	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) * 5.58%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2119	-	766,852,204	766,852,204	176	-	42,795,712	-
2120	-	793,692,031	793,692,031	93	-	44,293,562	-
2121	-	821,471,252	821,471,252	49	-	45,843,837	-
2122	-	850,222,746	850,222,746	25	-	47,448,371	-
2123	-	879,980,542	879,980,542	13	-	49,109,064	-
2124	-	910,779,861	910,779,861	6	-	50,827,881	-
2125	-	942,657,156	942,657,156	3	-	52,606,857	-
2126	-	975,650,156	975,650,156	2	-	54,448,097	-
2127	-	1,009,797,911	1,009,797,911	-	-	56,353,781	-
2128	-	1,045,140,838	1,045,140,838	-	-	58,326,163	-

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)
2023	20,124,047	3,936,014	1,310,029	-	1,808,985	24,559,017
2024	24,559,017	2,512,327	1,432,799	-	1,505,927	27,144,472
2025	27,144,472	2,448,143	1,549,311	-	1,655,633	29,698,937
2026	29,698,937	2,388,645	1,691,095	-	1,802,863	32,199,350
2027	32,199,350	2,335,996	1,769,938	-	1,948,943	34,714,351
2028	34,714,351	2,290,632	1,948,329	-	2,093,130	37,149,784
2029	37,149,784	2,239,133	2,157,013	-	2,231,451	39,463,354
2030	39,463,354	2,193,848	2,246,885	-	2,366,210	41,776,527
2031	41,776,527	2,148,863	2,273,246	-	2,502,860	44,155,004
2032	44,155,004	2,102,463	2,500,539	-	2,637,358	46,394,286
2033	46,394,286	2,052,398	2,696,722	-	2,764,327	48,514,288
2034	48,514,288	1,999,580	2,794,261	-	2,887,017	50,606,625
2035	50,606,625	1,957,714	2,974,756	-	3,005,886	52,595,468
2036	52,595,468	1,919,311	3,040,754	-	3,122,085	54,596,110
2037	54,596,110	1,875,922	3,170,498	-	3,236,929	56,538,463
2038	56,538,463	1,831,634	3,392,648	-	3,345,477	58,322,926
2039	58,322,926	1,791,976	3,445,233	-	3,449,778	60,119,447
2040	60,119,447	1,750,040	3,506,998	-	3,554,458	61,916,947
2041	61,916,947	1,718,532	3,621,712	-	3,657,921	63,671,688
2042	63,671,688	1,682,063	3,833,597	-	3,755,755	65,275,909
2043	65,275,909	1,648,526	4,016,343	-	3,845,520	66,753,613
2044	66,753,613	1,611,638	4,189,136	-	3,927,892	68,104,006
2045	68,104,006	1,574,969	4,257,336	-	4,005,769	69,427,408
2046	69,427,408	1,536,984	4,371,952	-	4,080,595	70,673,035
2047	70,673,035	1,076,916	4,300,961	-	4,143,661	71,592,651
2048	71,592,651	1,016,565	4,396,124	-	4,194,172	72,407,264
2049	72,407,264	933,968	4,470,912	-	4,238,328	73,108,648
2050	73,108,648	783,260	4,482,403	-	4,275,545	73,685,050
2051	73,685,050	747,234	4,611,566	-	4,305,173	74,125,891
2052	74,125,891	503,201	4,536,772	-	4,326,546	74,418,866
2053	74,418,866	359,464	4,568,666	-	4,338,856	74,548,520
2054	74,548,520	206,037	4,594,314	-	4,341,263	74,501,506
2055	74,501,506	-	4,471,549	-	4,335,944	74,365,901
2056	74,365,901	-	4,590,136	-	4,324,250	74,100,015

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)
2057	74,100,015	-	4,552,726	-	4,309,419	73,856,708
2058	73,856,708	-	4,481,184	-	4,296,967	73,672,491
2059	73,672,491	-	4,510,094	-	4,285,047	73,447,444
2060	73,447,444	-	4,469,905	-	4,272,749	73,250,288
2061	73,250,288	-	4,312,761	-	4,265,634	73,203,161
2062	73,203,161	-	4,314,096	-	4,262,767	73,151,832
2063	73,151,832	-	4,277,358	-	4,260,789	73,135,263
2064	73,135,263	-	4,084,549	-	4,265,579	73,316,293
2065	73,316,293	-	4,113,436	-	4,275,574	73,478,431
2066	73,478,431	-	4,069,989	-	4,286,606	73,695,048
2067	73,695,048	-	4,045,586	-	4,300,335	73,949,797
2068	73,949,797	-	3,917,705	-	4,319,457	74,351,549
2069	74,351,549	-	3,842,388	-	4,345,821	74,854,982
2070	74,854,982	-	3,810,260	-	4,376,991	75,421,713
2071	75,421,713	-	3,666,813	-	4,415,298	76,170,198
2072	76,170,198	-	3,595,143	-	4,462,358	77,037,413
2073	77,037,413	-	3,518,091	-	4,516,702	78,036,024
2074	78,036,024	-	3,434,567	-	4,579,124	79,180,581
2075	79,180,581	-	3,339,887	-	4,650,638	80,491,332
2076	80,491,332	-	3,227,761	-	4,732,647	81,996,218
2077	81,996,218	-	3,110,488	-	4,826,458	83,712,188
2078	83,712,188	-	2,990,123	-	4,933,028	85,655,093
2079	85,655,093	-	2,866,348	-	5,053,315	87,842,060
2080	87,842,060	-	2,722,951	-	5,188,835	90,307,944
2081	90,307,944	-	2,583,926	-	5,340,959	93,064,977
2082	93,064,977	-	2,431,927	-	5,510,941	96,143,991
2083	96,143,991	-	2,285,667	-	5,700,069	99,558,393
2084	99,558,393	-	2,137,163	-	5,909,389	103,330,619
2085	103,330,619	-	1,974,068	-	6,140,615	107,497,166
2086	107,497,166	-	1,824,948	-	6,395,082	112,067,300
2087	112,067,300	-	1,664,279	-	6,674,110	117,077,131
2088	117,077,131	-	1,512,466	-	6,979,254	122,543,919
2089	122,543,919	-	1,369,419	-	7,311,553	128,486,053
2090	128,486,053	-	1,218,483	-	7,672,609	134,940,179

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)
2091	134,940,179	-	1,087,617	-	8,063,782	141,916,344
2092	141,916,344	-	953,967	-	8,486,362	149,448,739
2093	149,448,739	-	833,446	-	8,941,921	157,557,214
2094	157,557,214	-	717,532	-	9,431,907	166,271,589
2095	166,271,589	-	610,735	-	9,957,973	175,618,827
2096	175,618,827	-	518,528	-	10,521,574	185,621,873
2097	185,621,873	-	433,008	-	11,124,322	196,313,187
2098	196,313,187	-	360,544	-	11,767,975	207,720,618
2099	207,720,618	-	295,040	-	12,454,386	219,879,964
2100	219,879,964	-	238,739	-	13,185,636	232,826,861
2101	232,826,861	-	189,665	-	13,963,922	246,601,118
2102	246,601,118	-	149,516	-	14,791,582	261,243,184
2103	261,243,184	-	116,535	-	15,671,095	276,797,744
2104	276,797,744	-	89,642	-	16,605,175	293,313,277
2105	293,313,277	-	67,991	-	17,596,757	310,842,043
2106	310,842,043	-	50,805	-	18,648,998	329,440,236
2107	329,440,236	-	37,368	-	19,765,293	349,168,161
2108	349,168,161	-	27,029	-	20,949,279	370,090,411
2109	370,090,411	-	19,203	-	22,204,849	392,276,057
2110	392,276,057	-	13,384	-	23,536,162	415,798,835
2111	415,798,835	-	9,139	-	24,947,656	440,737,352
2112	440,737,352	-	6,108	-	26,444,058	467,175,302
2113	467,175,302	-	3,988	-	28,030,398	495,201,712
2114	495,201,712	-	2,539	-	29,712,027	524,911,200
2115	524,911,200	-	1,577	-	31,494,625	556,404,248
2116	556,404,248	-	953	-	33,384,226	589,787,521
2117	589,787,521	-	559	-	35,387,234	625,174,196
2118	625,174,196	-	319	-	37,510,442	662,684,319
2119	662,684,319	-	176	-	39,761,054	702,445,197
2120	702,445,197	-	93	-	42,146,709	744,591,813
2121	744,591,813	-	49	-	44,675,507	789,267,271
2122	789,267,271	-	25	-	47,356,036	836,623,282
2123	836,623,282	-	13	-	50,197,397	886,820,666
2124	886,820,666	-	6	-	53,209,240	940,029,900

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)
2125	940,029,900	-	3	-	56,401,794	996,431,691
2126	996,431,691	-	2	-	59,785,901	1,056,217,590
2127	1,056,217,590	-	-	-	63,373,055	1,119,590,645
2128	1,119,590,645	-	-	-	67,175,439	1,186,766,084

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) = 6%
2024	24,559,017	1,432,799	1,432,799	-	1,391,657	-	1,391,657
2025	27,144,472	1,549,311	1,549,311	-	1,419,645	-	1,419,645
2026	29,698,937	1,691,095	1,691,095	-	1,461,852	-	1,461,852
2027	32,199,350	1,769,938	1,769,938	-	1,443,403	-	1,443,403
2028	34,714,351	1,948,329	1,948,329	-	1,498,946	-	1,498,946
2029	37,149,784	2,157,013	2,157,013	-	1,565,563	-	1,565,563
2030	39,463,354	2,246,885	2,246,885	-	1,538,483	-	1,538,483
2031	41,776,527	2,273,246	2,273,246	-	1,468,427	-	1,468,427
2032	44,155,004	2,500,539	2,500,539	-	1,523,820	-	1,523,820
2033	46,394,286	2,696,722	2,696,722	-	1,550,353	-	1,550,353
2034	48,514,288	2,794,261	2,794,261	-	1,515,498	-	1,515,498
2035	50,606,625	2,974,756	2,974,756	-	1,522,067	-	1,522,067
2036	52,595,468	3,040,754	3,040,754	-	1,467,770	-	1,467,770
2037	54,596,110	3,170,498	3,170,498	-	1,443,771	-	1,443,771
2038	56,538,463	3,392,648	3,392,648	-	1,457,484	-	1,457,484
2039	58,322,926	3,445,233	3,445,233	-	1,396,297	-	1,396,297
2040	60,119,447	3,506,998	3,506,998	-	1,340,876	-	1,340,876
2041	61,916,947	3,621,712	3,621,712	-	1,306,355	-	1,306,355
2042	63,671,688	3,833,597	3,833,597	-	1,304,512	-	1,304,512
2043	65,275,909	4,016,343	4,016,343	-	1,289,337	-	1,289,337
2044	66,753,613	4,189,136	4,189,136	-	1,268,686	-	1,268,686
2045	68,104,006	4,257,336	4,257,336	-	1,216,359	-	1,216,359
2046	69,427,408	4,371,952	4,371,952	-	1,178,402	-	1,178,402
2047	70,673,035	4,300,961	4,300,961	-	1,093,648	-	1,093,648
2048	71,592,651	4,396,124	4,396,124	-	1,054,572	-	1,054,572
2049	72,407,264	4,470,912	4,470,912	-	1,011,804	-	1,011,804
2050	73,108,648	4,482,403	4,482,403	-	956,986	-	956,986
2051	73,685,050	4,611,566	4,611,566	-	928,832	-	928,832
2052	74,125,891	4,536,772	4,536,772	-	862,045	-	862,045
2053	74,418,866	4,568,666	4,568,666	-	818,967	-	818,967
2054	74,548,520	4,594,314	4,594,314	-	776,948	-	776,948
2055	74,501,506	4,471,549	4,471,549	-	713,384	-	713,384

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) = 6%
2056	74,365,901	4,590,136	4,590,136	-	690,852	-	690,852
2057	74,100,015	4,552,726	4,552,726	-	646,435	-	646,435
2058	73,856,708	4,481,184	4,481,184	-	600,261	-	600,261
2059	73,672,491	4,510,094	4,510,094	-	569,938	-	569,938
2060	73,447,444	4,469,905	4,469,905	-	532,886	-	532,886
2061	73,250,288	4,312,761	4,312,761	-	485,049	-	485,049
2062	73,203,161	4,314,096	4,314,096	-	457,735	-	457,735
2063	73,151,832	4,277,358	4,277,358	-	428,148	-	428,148
2064	73,135,263	4,084,549	4,084,549	-	385,706	-	385,706
2065	73,316,293	4,113,436	4,113,436	-	366,447	-	366,447
2066	73,478,431	4,069,989	4,069,989	-	342,053	-	342,053
2067	73,695,048	4,045,586	4,045,586	-	320,757	-	320,757
2068	73,949,797	3,917,705	3,917,705	-	293,036	-	293,036
2069	74,351,549	3,842,388	3,842,388	-	271,134	-	271,134
2070	74,854,982	3,810,260	3,810,260	-	253,648	-	253,648
2071	75,421,713	3,666,813	3,666,813	-	230,282	-	230,282
2072	76,170,198	3,595,143	3,595,143	-	213,001	-	213,001
2073	77,037,413	3,518,091	3,518,091	-	196,638	-	196,638
2074	78,036,024	3,434,567	3,434,567	-	181,103	-	181,103
2075	79,180,581	3,339,887	3,339,887	-	166,142	-	166,142
2076	80,491,332	3,227,761	3,227,761	-	151,476	-	151,476
2077	81,996,218	3,110,488	3,110,488	-	137,710	-	137,710
2078	83,712,188	2,990,123	2,990,123	-	124,888	-	124,888
2079	85,655,093	2,866,348	2,866,348	-	112,941	-	112,941
2080	87,842,060	2,722,951	2,722,951	-	101,218	-	101,218
2081	90,307,944	2,583,926	2,583,926	-	90,613	-	90,613
2082	93,064,977	2,431,927	2,431,927	-	80,456	-	80,456
2083	96,143,991	2,285,667	2,285,667	-	71,337	-	71,337
2084	99,558,393	2,137,163	2,137,163	-	62,926	-	62,926
2085	103,330,619	1,974,068	1,974,068	-	54,834	-	54,834
2086	107,497,166	1,824,948	1,824,948	-	47,823	-	47,823
2087	112,067,300	1,664,279	1,664,279	-	41,144	-	41,144

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) = 6%
2088	117,077,131	1,512,466	1,512,466	-	35,274	-	35,274
2089	122,543,919	1,369,419	1,369,419	-	30,130	-	30,130
2090	128,486,053	1,218,483	1,218,483	-	25,292	-	25,292
2091	134,940,179	1,087,617	1,087,617	-	21,298	-	21,298
2092	141,916,344	953,967	953,967	-	17,623	-	17,623
2093	149,448,739	833,446	833,446	-	14,525	-	14,525
2094	157,557,214	717,532	717,532	-	11,797	-	11,797
2095	166,271,589	610,735	610,735	-	9,473	-	9,473
2096	175,618,827	518,528	518,528	-	7,587	-	7,587
2097	185,621,873	433,008	433,008	-	5,977	-	5,977
2098	196,313,187	360,544	360,544	-	4,695	-	4,695
2099	207,720,618	295,040	295,040	-	3,625	-	3,625
2100	219,879,964	238,739	238,739	-	2,767	-	2,767
2101	232,826,861	189,665	189,665	-	2,074	-	2,074
2102	246,601,118	149,516	149,516	-	1,542	-	1,542
2103	261,243,184	116,535	116,535	-	1,134	-	1,134
2104	276,797,744	89,642	89,642	-	823	-	823
2105	293,313,277	67,991	67,991	-	589	-	589
2106	310,842,043	50,805	50,805	-	415	-	415
2107	329,440,236	37,368	37,368	-	288	-	288
2108	349,168,161	27,029	27,029	-	197	-	197
2109	370,090,411	19,203	19,203	-	132	-	132
2110	392,276,057	13,384	13,384	-	87	-	87
2111	415,798,835	9,139	9,139	-	56	-	56
2112	440,737,352	6,108	6,108	-	35	-	35
2113	467,175,302	3,988	3,988	-	22	-	22
2114	495,201,712	2,539	2,539	-	13	-	13
2115	524,911,200	1,577	1,577	-	8	-	8
2116	556,404,248	953	953	-	4	-	4
2117	589,787,521	559	559	-	2	-	2
2118	625,174,196	319	319	-	1	-	1
2119	662,684,319	176	176	-	1	-	1

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) = 6%
2120	702,445,197	93	93	-	-	-	-
2121	744,591,813	49	49	-	-	-	-
2122	789,267,271	25	25	-	-	-	-
2123	836,623,282	13	13	-	-	-	-
2124	886,820,666	6	6	-	-	-	-
2125	940,029,900	3	3	-	-	-	-
2126	996,431,691	2	2	-	-	-	-
2127	1,056,217,590	-	-	-	-	-	-
2128	1,119,590,645	-	-	-	-	-	-

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

Year	Differences between Expected and Actual Experience	Recognition Period (Years)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2019	(1,661,369)	7.96	(208,715)	(208,715)	(208,715)	(200,364)	-	-	-	-	-	-
2020	-	7.96	-	-	-	-	-	-	-	-	-	-
2021	(9,876,472)	7.50	(1,316,863)	(1,316,863)	(1,316,863)	(1,316,863)	(1,316,863)	(658,431)	-	-	-	-
2022	-	7.50	-	-	-	-	-	-	-	-	-	-
2023	1,475,538	7.71	191,380	191,380	191,380	191,380	191,380	191,380	191,380	135,878	-	-
Net Increase (Decrease) in OPEB Expense			(1,334,198)	(1,334,198)	(1,334,198)	(1,325,847)	(1,125,483)	(467,051)	191,380	135,878	-	-

Year	Changes of Assumptions	Recognition Period (Years)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2019	2,595,779	7.96	326,103	326,103	326,103	313,058	-	-	-	-	-	-
2020	3,264,788	7.96	410,149	410,149	410,149	410,149	393,745	-	-	-	-	-
2021	2,019,866	7.50	269,315	269,315	269,315	269,315	269,315	134,661	-	-	-	-
2022	(104,824)	7.50	(13,977)	(13,977)	(13,977)	(13,977)	(13,977)	(13,977)	(6,985)	-	-	-
2023	3,572,480	7.71	463,357	463,357	463,357	463,357	463,357	463,357	463,357	328,981	-	-
Net Increase (Decrease) in OPEB Expense			1,454,947	1,454,947	1,454,947	1,441,902	1,112,440	584,041	456,372	328,981	-	-

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

Year	Differences between Projected and Actual Earnings on OPEB Plan Investments	Recognition Period (Years)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2019	75,432	5	15,087	-	-	-	-	-	-	-	-	-
2020	702,166	5	140,433	140,434	-	-	-	-	-	-	-	-
2021	(3,240,895)	5	(648,179)	(648,179)	(648,179)	-	-	-	-	-	-	-
2022	5,010,030	5	1,002,006	1,002,006	1,002,006	1,002,006	-	-	-	-	-	-
2023	(426,505)	5	(85,301)	(85,301)	(85,301)	(85,301)	(85,301)	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			424,046	408,960	268,526	916,705	(85,301)	-	-	-	-	-