



TOWN OF DRACUT, MASSACHUSETTS

OTHER POSTEMPLOYMENT BENEFITS PROGRAM

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

Disclosures as of
June 30, 2022

KMS Actuarial, LLC
52 Hunt Road
Kingston, NH 03848

October, 2022



October 31, 2022

Mr. Victor Garofalo
Town of Dracut
62 Arlington Street
Dracut, MA 01826-2648

Dear Victor:

We are pleased to present the enclosed report of the July 1, 2021 actuarial valuation of the retiree health care benefits for the Town of Dracut. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2022 under the following Governmental Accounting Standards Board (GASB) Statements:

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

Results are based on liabilities developed in an actuarial valuation performed as of July 1, 2021 and rolled forward to the plan's measurement date of June 30, 2022.

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

Our calculations are based on member census data and other information provided by the Town of Dracut 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 3.54%, the rate that reflects a tax-exempt, high quality municipal bond rate. The municipal bond rate of 3.54% is based on the Bond Buyer 20-Bond GO Index published on June 30, 2022.

Mr. Victor Garofalo

October 31, 2022

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This report was completed in accordance with generally accepted actuarial standards and procedures, and conforms to the Code of Professional Conduct of the American Academy of Actuaries. The actuarial assumptions other than those explicitly applicable to the postemployment benefit plans are consistent with those used by the 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.

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

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

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

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

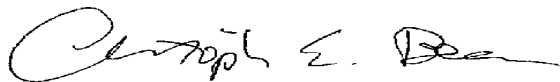
Respectfully submitted,



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EXECUTIVE SUMMARY

Purpose of Report

This report presents the results of the actuarial valuation of the Town of Dracut's retiree health care benefits as of July 1, 2021. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2022 under the following Governmental Accounting Standards Board (GASB) Statements:

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

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

GASB Accounting Standards

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

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

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 Dracut Other Postemployment Benefits Program

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

Summary of Principal Results

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

Disclosure Date	June 30, 2022	June 30, 2021	% Change
Valuation Date	July 1, 2021 December 31, 2020		
Membership Data			
Active Plan Members*	592	443	33.6%
Inactive Plan Members (excludes covered spouses)**	461	687	(32.9%)
Total Plan Members	1,053	1,130	(6.8%)
Covered Spouses	242	Not available	0.0%
Covered Payroll	\$38,408,279	\$39,616,804	(3.1%)
Net OPEB Liability			
Discount Rate	3.54%	2.16%	
Total OPEB Liability (TOL)	\$148,678,608	\$161,256,038	(7.8%)
Fiduciary Net Position (FNP)	\$784,386	\$814,790	(3.7%)
Net OPEB Liability	\$147,894,222	\$160,441,248	(7.8%)
FNP as % of TOL	0.5%	0.5%	
OPEB Expense			
OPEB Expense	\$7,673,934	\$8,589,002	(10.7%)
Deferred Outflows	\$13,545,307	\$10,050,493	
Deferred Inflows	\$30,603,383	\$11,205,772	
Recognition Period	6.88	5.14	

*Active member count as of June 30, 2021 included only actives with coverage. The count as of June 30, 2022 includes actives without coverage.

**Inactive plan member count as of June 30, 2021 includes covered spouses. The count as of June 30, 2022 excludes them.

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 \$8,037,000. This loss is primarily due to claims cost developed in this valuation that was higher than expected from the prior valuation, offset by premium rates lower than expected from the prior valuation.

Changes of Assumptions

The discount rate changed from 2.16% as of June 30, 2021 to 3.54% as of June 30, 2022. In addition, many other assumptions were updated in this valuation, including the inflation rate, healthcare trend rates, mortality tables and mortality improvement rates, and participation rates. A summary of the impact on the Total OPEB Liability (TOL) of each assumption change is provided below:

◆ Increase due to change in Inflation Assumption	11,487,000
◆ Increase due to change in Trend Assumption	3,510,000
◆ Decrease due to change in Mortality Tables and Mortality Improvement Rates	(6,467,000)
◆ Increase due to change in Participation Rate	3,053,000
◆ Decrease due to change in Discount Rate	(39,715,000)
Total	\$ (28,132,000)

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

Changes of Benefit Terms

The retiree contribution rates were updated since the prior valuation. All other benefit terms are the same as those used in the prior measurement. A Summary of the Principal Plan Provisions is provided in Section 5.

Total OPEB Liability

The Total OPEB Liability as of the current measurement date, June 30, 2022, is \$148,678,608. The Total OPEB Liability as of the prior measurement date, June 30, 2021, was \$161,256,038. During the current measurement period ending June 30, 2022, the Total OPEB Liability decreased by \$12,577,430, or -7.8%. The development of the Total OPEB Liability for the current measurement period is shown in Section 1, Exhibit 1.2.

Fiduciary Net Position

The Fiduciary Net Position is equal to the market value of assets and as of the current measurement date, June 30, 2022, is \$784,386. The Fiduciary Net Position as of the prior measurement date, June 30, 2021, was \$814,790. During the plan year ended June 30, 2022, the actual rate of return was -3.73%. The expected long-term rate of return is 6.90%. The Fiduciary Net Position is shown in Section 1, Exhibit 1.1.

EXECUTIVE SUMMARY

Employer Future Period Contributions

The Town does not have a formal funding policy, therefore no future contributions have been assumed.

Discount Rate

As of the June 30, 2022 measurement date, the OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore the 3.54% municipal bond rate was applied to all periods to determine the total OPEB liability. Projected benefit payments are discounted to their actuarial present value using a single discount rate of 3.54%.

OPEB Expense

The OPEB Expense for the current measurement period ending June 30, 2022, is \$7,673,934. Benefit changes are recognized immediately and experience gains and losses and assumption changes developed in this valuation are recognized over 6.88 years. Investment gains and losses are recognized over 5 years. The OPEB Expense for the prior measurement period was \$8,589,002. The development of the OPEB expense for the current measurement period is shown in Section 4, Exhibit 4.2.

COVID-19 Pandemic

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

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.1 - OPEB Trust Assets

The Town has established an irrevocable trust pursuant to 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, employer contributions to the trust must be irrevocable. Asset information for the current and prior fiscal years was provided by the Town and is presented below:

Fiscal Year Ended June 30 **2022** **2021**

Trust Fund Composition at Fiscal Year-End		
Global Equity	\$290,376	\$0
Core Fixed Income	112,881	-
Value Added Fixed Income	52,937	-
Private Equity	143,242	-
Real Estate	82,520	-
Timberland	24,912	-
Portfolio Completion Strategies	66,950	-
Overlay	4,671	-
Cash	5,897	-
Investments	-	814,790
Total Market Value of Assets	\$784,386	\$814,790

Asset Activity		
Market value, beginning of year	\$814,790	\$630,988
Employer Premiums	4,318,163	3,867,206
OPEB Trust Contributions	-	-
Benefit Payments	(4,318,163)	(3,867,206)
Administrative Expenses	-	-
Investment Return	(30,404)	183,802
Market value, end of year	\$784,386	\$814,790

Money-Weighted Rate of Return	-3.73%	Not available
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(Gain) / Loss on OPEB Plan Investments		
Projected earnings	\$57,035	\$45,747
Actual earnings	(30,404)	183,802
(Gain) / Loss on OPEB plan investments	\$87,439	(\$138,055)

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.2 - Total OPEB Liability

The Total OPEB Liability, developed using the Entry Age Normal funding method, is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service. The total OPEB liability as of the June 30, 2022 measurement date was developed from an actuarial valuation as of July 1, 2021 and rolled forward to the OPEB plan's fiscal year-end.

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

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

The development of the Total OPEB Liability from the beginning of the measurement period, June 30, 2021 to the end of the measurement period, June 30, 2022 is shown below:

Measurement Date	June 30, 2022
1. Total OPEB Liability, beginning of year:	
a. Actives	Not available
b. Retirees, Covered Spouses and Survivors	Not available
c. Total OPEB Liability at 2.16% (a. + b.)	\$161,256,038
2. Service Cost*	\$6,316,000
3. Expected Benefit Payments	
a. Current retirees	(\$4,090,916)
b. Future retirees	(227,247)
c. Total (a. + b.)	(\$4,318,163)
4. Interest [2.16% x (1.c. + 2. + .5 x 3.c)]	\$3,572,920
5. Changes of benefit terms	\$1,947,898
6. Differences between expected and actual experience	\$8,036,704
7. Changes of assumptions or other inputs	(\$28,132,789)
8. Total OPEB Liability, end of year (1.c. + 2. + 3.c. + 4. + 5. + 6. + 7.)	
a. Actives	\$67,485,549
b. Retirees, Covered Spouses and Survivors	81,193,059
c. Total OPEB Liability at 3.54% (a. + b.)	\$148,678,608

*Estimated based on the June 30, 2021 service cost in the GASB 74/75 report prepared by Segal.

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.3 - Development of Actuarially Determined Employer Contributions

The Town does not have a formal funding policy, therefore no future contributions have been assumed.

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

Fiscal Year Ending	June 30, 2022	June 30, 2023
Discount Rate	2.16%	3.54%
1. Normal Cost	\$6,316,000	\$5,884,648
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$161,256,038	\$148,678,608
b. Actuarial Value of Plan Assets	\$814,790	\$784,386
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$160,441,248	\$147,894,222
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$160,441,248	\$147,894,222
b. Amortization Period in years	30	30
c. Payroll Growth Rate	3.0%	3.0%
d. Amortization Factor	33.87	27.84
e. Amortization Amount (3.a. / 3.d.)	\$4,736,972	\$5,312,292
4. Interest on 1. and 3.e.	\$238,744	\$396,372
5. Actuarially Determined Employer Contribution (1. + 3.e. + 4.)	\$11,291,716	\$11,593,312
6. Actual Employer Contribution to OPEB Trust	\$0	TBD
7. Expected Benefit Payments	\$4,318,163	
8. Total Contribution (6. + 7.)	\$4,318,163	

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.1 - Plan Description

Plan Administration

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

Plan Membership

At June 30, 2022, OPEB plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefit payments ¹	461
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	592
	<u>1,053</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

The Town does not have a formal funding policy, therefore no future contributions have been assumed.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

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

Total OPEB liability	\$ 148,678,608
Fiduciary net position	(784,386)
Net OPEB liability	\$ 147,894,222

Fiduciary net position as a percentage of the total OPEB liability 0.53%

Actuarial Assumptions

The total OPEB liability was determined by an actuarial valuation as of July 1, 2021, rolled forward to the measurement date and using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.4% per year, based on current economic data, analyses from economists and other experts, and professional judgment.
Discount rate	3.54 percent, net of investment expenses, including inflation.
Healthcare cost trend rate	7.5 percent for 2021, decreasing 0.6 percent per year to 5.7 percent, then grading down to an ultimate trend rate of 3.9 percent, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical inflation rate is reached in 2075.
Pre-Retirement Mortality - General and Public Safety Employees	RP-2014 Blue Collar 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 using Scale MP-2020.
Healthy Retiree Mortality - Teachers	PUB-2010 Teachers Headcount-Weighted Retiree Mortality Table, base year 2010, projected with generational mortality using Scale MP-2020.
Disabled Retiree Mortality - Teachers	PUB-2010 Teachers Headcount-Weighted Disabled Mortality Table, base year 2010, projected with generational mortality using Scale MP-2020.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

Long-Term Expected Rate of Return

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage provided in the investment policy statement and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of June 30, 2022 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rates of Return¹
Global Equity	38%	4.21%
Core Fixed Income	15%	0.19%
Value Added Fixed Income	8%	4.00%
Private Equity	15%	7.70%
Real Estate	10%	3.60%
Timberland	4%	4.20%
Portfolio Completion Strategies	10%	3.00%
Total	100%	

¹ provided by the Pension Reserves Investment Management Board.

Discount Rate

The discount rate used to measure the total OPEB liability was 3.54%. The projection of cash flows used to determine the discount rate assumed that contributions from the Town will be made in accordance with the plan's funding policy. Based on those assumptions, the OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore the 3.54% municipal bond rate was applied to all periods to determine the total OPEB liability.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

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

The following presents the net OPEB liability calculated using the current discount rate of 3.54 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (2.54 percent) or 1-percentage point higher (4.54 percent) than the current rate:

	1% Decrease (2.54%)	Assumed Discount Rate (3.54%)	1% Increase (4.54%)
Total OPEB Liability	\$ 176,063,116	\$ 148,678,608	\$ 127,134,290
Fiduciary Net Position	(784,386)	(784,386)	(784,386)
Net OPEB Liability	\$ 175,278,730	\$ 147,894,222	\$ 126,349,904
% Change in NOL	18.5%		-14.6%

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

The following presents the net OPEB liability calculated using the current healthcare cost trend rates as well as what the net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage point lower (6.5% year 1 decreasing to 2.9%) or 1-percentage point higher (8.5% year 1 decreasing to 4.9%) than the current healthcare cost trend rates:

	1% Decrease 6.5% Year 1 Decreasing to 2.9%	Assumed Healthcare Cost Trend Rates 7.5% Year 1 Decreasing to 3.9%	1% Increase 8.5% Year 1 Decreasing to 4.9%
Total OPEB Liability	\$ 124,290,274	\$ 148,678,608	\$ 180,598,369
Fiduciary Net Position	(784,386)	(784,386)	(784,386)
Net OPEB Liability	\$ 123,505,888	\$ 147,894,222	\$ 179,813,983
% Change in NOL	-16.5%		21.6%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30	2022	2021	2020	2019	2018
Total OPEB Liability					
Service cost	\$ 6,316,000	\$ 6,131,844	\$ 4,949,869	\$ 4,605,049	\$ 4,766,437
Interest	3,572,920	3,705,296	5,241,294	5,839,575	5,454,222
Changes of benefit terms	1,947,898	-	(5,991,583)	-	-
Differences between expected and actual experience	8,036,704	(3,202,642)	-	360,781	-
Changes of assumptions	(28,132,789)	(4,962,899)	16,510,306	(7,856,855)	(7,006,957)
Benefit payments	(4,318,163)	(3,867,206)	(4,119,273)	(4,707,074)	(4,322,562)
Net change in total OPEB liability	\$ (12,577,430)	\$ (2,195,607)	\$ 16,590,613	\$ (1,758,524)	\$ (1,108,860)
Total OPEB liability—beginning	\$ 161,256,038	\$ 163,451,645	\$ 146,861,032	\$ 148,619,556	\$ 149,728,416
Total OPEB liability—ending (a)	\$ 148,678,608	\$ 161,256,038	\$ 163,451,645	\$ 146,861,032	\$ 148,619,556
Plan Fiduciary Net Position					
Contributions—employer	\$ 4,318,163	\$ 3,867,206	\$ 4,119,273	\$ 4,832,074	\$ 4,447,562
Net investment income	(30,404)	183,802	12,079	37,812	1,340
Benefit payments	(4,318,163)	(3,867,206)	(4,119,273)	(4,707,074)	(4,322,562)
Administrative expenses	-	-	-	-	-
Other	-	-	-	-	-
Net change in plan fiduciary net position	\$ (30,404)	\$ 183,802	\$ 12,079	\$ 162,812	\$ 126,340
Plan fiduciary net position—beginning	\$ 814,790	\$ 630,988	\$ 618,909	\$ 456,097	\$ 329,757
Plan fiduciary net position—ending (b)	\$ 784,386	\$ 814,790	\$ 630,988	\$ 618,909	\$ 456,097
Net OPEB liability—ending (a) – (b)	\$ 147,894,222	\$ 160,441,248	\$ 162,820,657	\$ 146,242,123	\$ 148,163,459
Plan fiduciary net position as a percentage of the total OPEB liability	0.53%	0.51%	0.39%	0.42%	0.31%
Covered payroll*	\$ 38,408,279	\$ 39,616,804	\$ 14,696,246	\$ 13,716,674	Not available
Net OPEB liability as a percentage of covered payroll	385.06%	404.98%	1107.91%	1066.16%	Not available
Discount Rate	3.54%	2.16%	2.21%	3.50%	3.87%

*Covered payroll prior to 2021 does not include payroll for School employees.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30

2017

Total OPEB Liability	
Service cost	
Interest	
Changes of benefit terms	
Differences between expected and actual experience	
Changes of assumptions	
Benefit payments	
Net change in total OPEB liability	
Total OPEB liability—beginning	
Total OPEB liability—ending (a)	\$ 149,728,416
Plan Fiduciary Net Position	
Contributions—employer	
Net investment income	
Benefit payments	
Administrative expenses	
Other	
Net change in plan fiduciary net position	
Plan fiduciary net position—beginning	
Plan fiduciary net position—ending (b)	\$ 329,757
Net OPEB liability—ending (a) – (b)	\$ 149,398,659
Plan fiduciary net position as a percentage of the total OPEB liability	0.22%
Covered payroll	
Net OPEB liability as a percentage of covered payroll	
Discount Rate	3.58%

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

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Changes of Benefit Terms

The retiree contribution rates were updated since the prior valuation. All other benefit terms are the same as those used in the prior measurement.

Changes of Assumptions

The discount rate changed from 2.16% as of June 30, 2021 to 3.54% as of June 30, 2022. In addition, many other assumptions were updated in this valuation, including the inflation rate, healthcare trend rates, mortality tables and mortality improvement rates, and participation rates.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Investment Returns

Fiscal Year Ended June 30	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Annual money-weighted rate of return, net of investment expenses	-3.73%	Not available	Not available	Not available	Not available	Not available				

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

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

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Investment Returns

Calculation of Money-Weighted Rate of Return

	Plan Investments/ Net External Cash Flows (a)	Periods Invested (b)	Period Weight (c)=(b)÷12	(d)=(a) x (1+r _{mw}) ^(c)
Beginning value - July 1, 2021	\$ 814,790	12	1.00	\$ 784,386
Monthly net external cash flows:				
July	-	11	0.92	-
August	-	10	0.83	-
September	-	9	0.75	-
October	-	8	0.67	-
November	-	7	0.58	-
December	-	6	0.50	-
January	-	5	0.42	-
February	-	4	0.33	-
March	-	3	0.25	-
April	-	2	0.17	-
May	-	1	0.08	-
June	-	0	0.00	-
Ending value - June 30, 2022				\$ 784,386
Money-weighted rate of return:				-3.73%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	2022	2021	2020	2019	2018
Actuarially determined contribution	\$ 11,291,716	\$ 6,162,361	\$ 6,631,296	\$ 6,356,960	\$ 6,121,928
Contributions in relation to the actuarially determined contribution	<u>4,318,163</u>	<u>3,867,206</u>	<u>4,119,273</u>	<u>4,832,074</u>	<u>4,447,562</u>
Contribution deficiency (excess)	<u>\$ 6,973,553</u>	<u>\$ 2,295,155</u>	<u>\$ 2,512,023</u>	<u>\$ 1,524,886</u>	<u>\$ 1,674,366</u>
Covered payroll	\$ 38,408,279	\$ 39,616,804	\$ 14,696,246	\$ 13,716,674	Not available
Contributions as a percentage of covered payroll	11.24%	9.76%	28.03%	35.23%	Not available
Discount rate	2.16%	7.00%	7.25%	7.25%	Not available
Inflation	2.40%	3.00%	3.50%	3.50%	Not available

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	2017	2016	2015	2014	2013
Actuarially determined contribution	\$ 5,849,091				
Contributions in relation to the actuarially determined contribution	<u>4,078,342</u>				
Contribution deficiency (excess)	<u>\$ 1,770,749</u>				
Covered payroll	Not available				
Contributions as a percentage of covered payroll	Not available				
Discount rate	Not available				
Inflation	Not available				

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

Notes to Schedule

Valuation Date

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

Methods and Assumptions as of Current Measurement Date

Actuarial cost method	Entry Age Normal
Amortization method	Increasing at 3% over 30 years on an open amortization period for partial pre-funding.
Amortization period	30 years
Asset valuation method	Market value
Healthcare cost trend rates	7.5 percent for 2021, decreasing 0.6 percent per year to 5.7 percent, then grading down to an ultimate trend rate of 3.9 percent, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical inflation rate is reached in 2075.

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

Exhibit 4.1 - Deferred Outflows and Deferred Inflows of Resources

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

					Balances at June 30, 2022	
	Experience Losses	Experience Gains	Amounts Recognized in OPEB Expense through June 30, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources	
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)	
2018	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019	360,781	-	288,625	72,156	-	-
2020	-	-	-	-	-	-
2021	-	3,202,642	(1,246,162)	-	1,956,480	-
2022	8,036,704	-	1,168,126	6,868,578	-	-
Total				<u>\$ 6,940,734</u>	<u>\$ 1,956,480</u>	

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

					Balances at June 30, 2022	
	Increases in the Total OPEB Liability	Decreases in the Total OPEB Liability	Amounts Recognized in OPEB Expense through June 30, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources	
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)	
2018	\$ -	\$ 7,006,957	\$ (7,006,957)	\$ -	\$ -	-
2019	-	7,856,855	(6,285,484)	-	1,571,371	-
2020	16,510,306	-	9,906,184	6,604,122	-	-
2021	-	4,962,899	(1,931,088)	-	3,031,811	-
2022	-	28,132,789	(4,089,068)	-	24,043,721	-
Total				<u>\$ 6,604,122</u>	<u>\$ 28,646,903</u>	

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

Exhibit 4.1 - Deferred Outflows and Deferred Inflows of Resources

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

					Balances at June 30, 2022	
Year	Investment Earnings Less Than Projected (a)	Investment Earnings Greater Than Projected (b)	Amounts Recognized in OPEB Expense through June 30, 2022 (c)	Deferred Outflows of Resources (a) - (c)	Deferred Inflows of Resources (b) + (c)	
2018	\$ 28,079	\$ -	\$ 28,079	\$ -	\$ -	
2019	1,083	-	868	215	-	
2020	32,792	-	19,674	13,118	-	
2021	-	138,055	(55,222)	-	82,833	
2022	87,439	-	17,488	69,951	-	
Subtotal				\$ 83,284	\$ 82,833	
Net				\$ 451	\$ -	

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

Year ended June 30	
2023	\$ (2,710,072)
2024	\$ (1,211,072)
2025	\$ (4,519,692)
2026	\$ (3,125,865)
2027	\$ (2,920,942)
Thereafter	\$ (2,570,433)
Deferred Outflows	\$ 13,545,307
Deferred Inflows	\$ 30,603,383

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

Exhibit 4.2 - OPEB Expense

The OPEB Expense and deferred outflows and inflows of resources primarily result from changes in the components of the net OPEB liability (NOL). Most changes in the NOL are included in the OPEB Expense in the period of the change, including service cost, interest on total OPEB liability, changes in benefit terms and projected earnings on the OPEB plan's investments. Other changes in the net OPEB liability are included in OPEB Expense over the current and future periods. These include the effects on the total OPEB liability of changes of economic and demographic assumptions and differences between expected and actual experience. In addition, the effect on the net OPEB liability of differences between the projected earnings on OPEB plan investments and actual experience with regard to those earnings are included in OPEB expense over the current and future periods. The OPEB Expense for the reporting period ending June 30, 2022 is presented below:

Fiscal Year Ended June 30, 2022

Measurement Date	6/30/2022
1. Service cost	\$ 6,316,000
2. Interest on the total OPEB liability	
a. Total OPEB liability, beginning of year	161,256,038
b. Service cost, beginning of year	6,316,000
c. Benefit payments	<u>(4,318,163)</u>
d. Interest on total OPEB liability = 2.16% times (a. + b. + .5 times c.)	3,572,920
3. Differences between expected and actual experience	617,200
4. Changes of benefit terms	1,947,898
5. Changes of assumptions	(4,725,316)
6. Projected earnings on OPEB plan investments	
a. Plan fiduciary net position, beginning of year	814,790
b. Contributions - Employer	4,318,163
c. Benefit payments	(4,318,163)
d. Administrative expenses and other	<u>-</u>
e. Total projected earnings	(57,035)
7. Differences between projected and actual earnings on OPEB plan investments	2,267
8. OPEB plan administrative expenses	-
9. Other changes in fiduciary net position	-
10. Total OPEB Expense	<u>\$ 7,673,934</u>

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, 2022	Individual	Family
HMO Blue New England (Broad-network)	\$824.76	\$1,979.38
HMO Blue Select	\$742.28	\$1,781.44
Blue Care Elect PPO	\$1,057.35	\$2,537.56
Medicare Plans - January 1, 2022		
Medex 2 w/ PDP	\$378.66	
Managed Blue for Seniors	\$339.54	

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Participant Contributions Retired employees contribute 20% - 25% of the total medical premium, depending on the selected plan, as shown below:

Non-Medicare Plans	Rate
HMO Blue New England (Broad-network)	25%
HMO Blue Select	20%
Blue Care Elect PPO	25%

Medicare Plans	
Medex 2 w/ PDP	22%
Managed Blue for Seniors	22%

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

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

Medicare Part B Reimbursement The Town reimburses the Medicare Part B premium for certain retirees, based on information provided in the retiree data.

Dental Coverage Dental coverage is provided. The total monthly costs are \$36.47 and \$106.01 for individual and family plans, respectively. Retirees contribute 50% of the monthly premiums.

Life Insurance Coverage Retirees are eligible for a \$5,000 life insurance benefit. The total monthly cost is \$7.80. Retirees contribute \$1.56 towards the monthly premiums.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Valuation Date	July 1, 2021
Disclosure Date	June 30, 2022
GASB 75 Reporting Date	June 30, 2022
Long-Term Expected Rate of Return	<p>6.9%, compounded annually, net of fees.</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	3.54%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2022.
Discount Rate (GASB)	<p>3.54%, compounded annually, for the measurement as of June 30, 2022.</p> <p>2.16%, compounded annually, for the measurement as of June 30, 2021.</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)	2.16%, compounded annually, for development of the Actuarially Determined Contribution (ADEC) as of June 30, 2022.
Amortization Method	Increasing at 3% over 30 years on an open amortization period for partial pre-funding.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Medical Trend Rates

Year	Trend
1	7.50%
2	6.90%
3	6.30%
4	5.70%
Ultimate	3.90%

Trend rates after year 4 grade down to the ultimate rate of 3.9 percent utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate trend rate is reached in 2075.

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

Dental Trend Rates

Dental trend rates are 4% per year.

Medicare Trend Rates

6% per year.

Inflation

2.4% per year, based on current economic data, analyses from economists and other experts, and professional judgment.

Payroll Growth

3% per year.

Participation Rates

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

Dental - 85% of eligible retirees will elect to participate.

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.

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

For current retirees, the actual census information is used.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Medical Per Capita Costs

The following annual per capita costs are for the fiscal year beginning July 1, 2021 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	Male	Female
Under 20	\$4,088	\$4,799
20-24	3,221	5,109
25-29	3,352	7,537
30-34	4,210	9,524
35-39	5,281	9,810
40-44	6,581	10,047
45-49	8,306	11,028
50-54	10,946	12,974
55-59	14,225	15,001
60-64	18,255	17,854
65-69	3,595	3,501
70-74	4,308	4,130
75-79	5,087	4,791
80-84	5,847	5,495
85-89	6,514	6,143
90-94	7,091	6,556
95+	7,537	6,340

Retiree Contributions

Annual per capita participant contributions for the fiscal year beginning July 1, 2021 are as follows:

Plan	Contribution
Non-Medicare	\$ 2,954
Medicare	963

Actuarial Cost Method

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

Employee Data

Employee and retiree data were compiled and submitted by the Town as of June 30, 2022. 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 using Scale MP-2020.

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

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

Turnover Rates Turnover rates for Teachers are as follows:

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

Disability Rates Disability rates for Teachers are as follows:

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

35% of the disabilities are job-related.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Teachers

Retirement Rates

Retirement rates for Teachers are as follows:

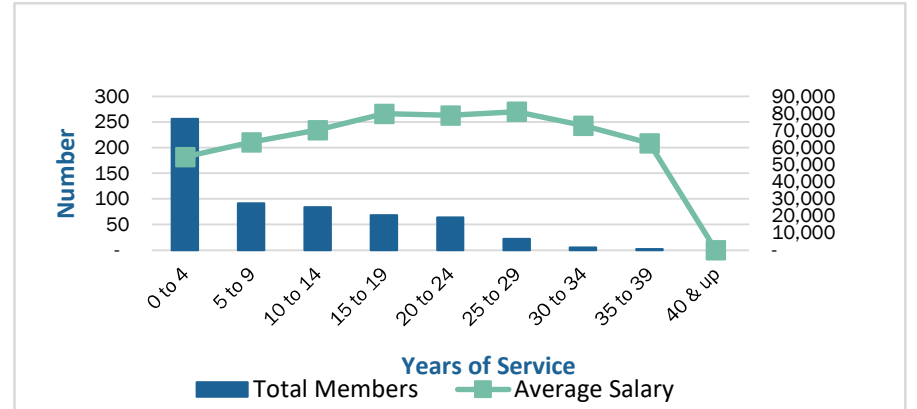
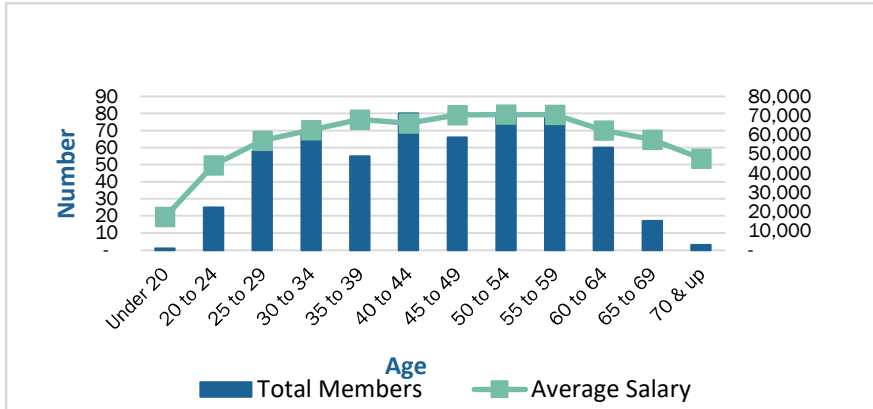
Age	Years of Service					
	Less than 20		20-29		30+	
	Male	Female	Male	Female	Male	Female
50	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
51	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
52	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
53	0.0%	0.0%	1.5%	1.0%	2.0%	1.5%
54	0.0%	0.0%	2.5%	1.0%	2.0%	2.0%
55	5.0%	3.0%	3.0%	3.0%	6.0%	5.0%
56	5.0%	3.0%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

SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.1 - Active Members by Age and Years of Service as of July 1, 2021

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	17,299	17,299
20 to 24	24	1	-	-	-	-	-	-	-	25	1,103,843	44,154
25 to 29	52	6	-	-	-	-	-	-	-	58	3,301,622	56,925
30 to 34	43	23	4	-	-	-	-	-	-	70	4,370,505	62,436
35 to 39	19	13	20	3	-	-	-	-	-	55	3,736,357	67,934
40 to 44	34	9	14	17	5	1	-	-	-	80	5,284,557	66,057
45 to 49	22	6	11	13	14	-	-	-	-	66	4,647,130	70,411
50 to 54	26	11	10	10	15	7	-	-	-	79	5,579,147	70,622
55 to 59	22	9	13	12	14	5	2	1	-	78	5,502,765	70,548
60 to 64	12	10	9	8	11	7	2	1	-	60	3,745,039	62,417
65 to 69	1	3	3	4	3	2	1	-	-	17	977,010	57,471
70 & up	-	-	-	1	2	-	-	-	-	3	143,006	47,669
Total	256	91	84	68	64	22	5	2	-	592	38,408,279	64,879
Total Salary	13,988,756	5,756,828	5,903,025	5,435,845	5,048,817	1,784,806	364,969	125,234	-			
Average Salary	54,644	63,262	70,274	79,939	78,888	81,128	72,994	62,617	-			

Average Age: 45.4 Average Service: 9.6



SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.2 - Retired Members, Covered Spouses and Survivors as of July 1, 2021

Age	Non-Medicare Plans			Medicare Plans		Total
	HMO Blue New England (Broad-network)	HMO Blue Select	Blue Care Elect PPO	Medex 2 w/ PDP	Managed Blue for Seniors	
Under 40	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0
45 to 49	3	0	0	0	0	3
50 to 54	3	1	4	0	0	8
55 to 59	13	2	7	0	0	22
60 to 64	24	3	20	14	0	61
65 to 69	1	0	4	101	0	106
70 to 74	0	0	0	119	2	121
75 to 79	0	0	0	62	0	62
80 to 84	0	0	0	32	0	32
85 to 89	0	0	0	19	2	21
90+	0	0	0	9	2	11
Total	44	6	35	356	6	447
Covered Spouses	34	4	26	165	1	230

Average Age: 71.4

In addition, there are 26 retirees, survivors and covered spouses that are not covered under any medical plan but are covered under a dental and/or 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.

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

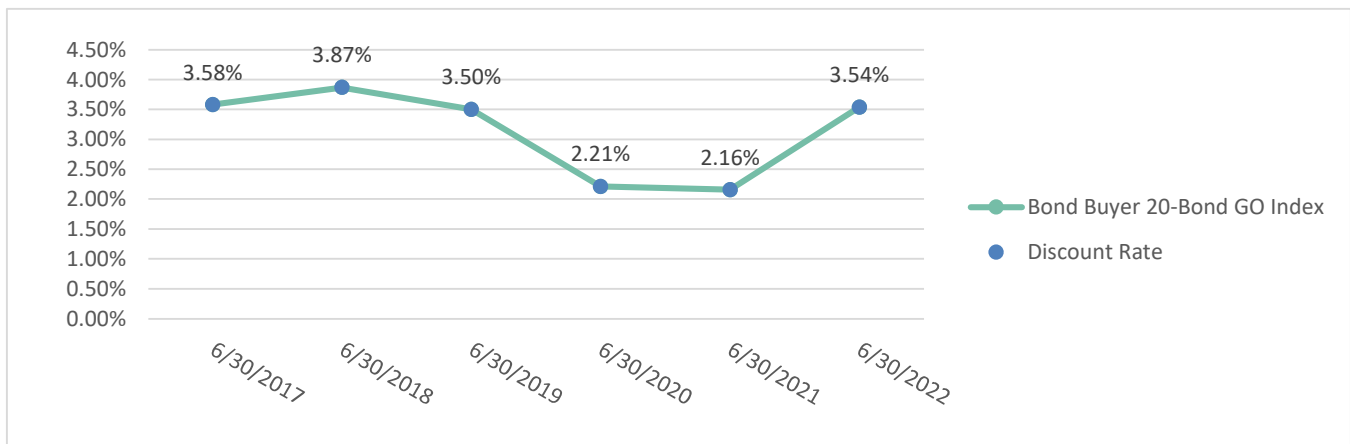
Projected cash flows into and out of the OPEB plan are assumed to be contributions to the OPEB plan, benefit payments, OPEB plan administrative expenses and OPEB plan investment earnings. These projected cash flows are used to project the OPEB plan's fiduciary net position at the beginning of each period.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

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

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

For purposes of this valuation, liabilities are based on a discount rate of 3.54%, the rate that reflects a tax-exempt, high quality municipal bond rate. The municipal bond rate of 3.54% is based on the Bond Buyer 20-Bond GO Index published on June 30, 2022. The OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore the 3.54% municipal bond rate was applied to all periods to determine the total OPEB liability. Projected benefit payments are discounted to their actuarial present value using a single discount rate of 3.54%.

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



APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

Table 1: Projection of Contributions

Year	Projected Payroll			Projected Contributions			
	Payroll for Current Plan Members (a)	Payroll for Future Plan Members (b)	Total Payroll (c) = (a) + (b)	Employer Contributions (Benefit Payments) (d)	Employer Contributions (OPEB Trust) (e)	Employer Contributions Related to Payroll of Future Employees (f) = (b) * 14.49%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2022	39,415,387	-	39,415,387	4,318,163	-	-	4,318,163
2023	36,985,624	3,612,225	40,597,849	4,552,846	-	523,591	4,029,255
2024	34,993,024	6,822,760	41,815,784	4,795,705	-	988,957	3,806,748
2025	33,228,253	9,842,005	43,070,258	5,054,271	-	1,426,596	3,627,675
2026	31,755,873	12,606,493	44,362,366	5,260,127	-	1,827,308	3,432,819
2027	30,465,479	15,227,758	45,693,237	5,457,720	-	2,207,260	3,250,460
2028	29,214,965	17,849,069	47,064,034	5,774,769	-	2,587,218	3,187,551
2029	27,917,760	20,558,195	48,475,955	6,081,544	-	2,979,905	3,101,639
2030	26,663,109	23,267,125	49,930,234	6,424,819	-	3,372,564	3,052,255
2031	25,543,267	25,884,874	51,428,141	6,644,301	-	3,752,006	2,892,295
2032	24,463,300	28,507,685	52,970,985	6,924,629	-	4,132,181	2,792,448
2033	23,437,774	31,122,341	54,560,115	7,334,693	-	4,511,175	2,823,518
2034	22,519,371	33,677,547	56,196,918	7,668,333	-	4,881,552	2,786,781
2035	21,573,283	36,309,543	57,882,826	7,948,091	-	5,263,059	2,685,032
2036	20,743,905	38,875,406	59,619,311	8,071,824	-	5,634,980	2,436,844
2037	19,877,792	41,530,098	61,407,890	8,253,571	-	6,019,777	2,233,794
2038	19,105,761	44,144,366	63,250,127	8,554,727	-	6,398,714	2,156,013
2039	18,295,010	46,852,621	65,147,631	8,833,804	-	6,791,275	2,042,529
2040	17,421,704	49,680,356	67,102,060	9,164,134	-	7,201,155	1,962,979
2041	16,402,449	52,712,673	69,115,122	9,591,199	-	7,640,688	1,950,511
2042	15,444,355	55,744,221	71,188,576	9,947,017	-	8,080,110	1,866,907
2043	14,474,194	58,850,039	73,324,233	10,026,286	-	8,530,298	1,495,988
2044	13,688,021	61,835,939	75,523,960	10,130,597	-	8,963,103	1,167,494
2045	12,957,173	64,832,506	77,789,679	10,304,530	-	9,397,455	907,075
2046	12,183,975	67,939,394	80,123,369	10,460,249	-	9,847,797	612,452
2047	11,345,342	71,181,728	82,527,070	10,464,041	-	10,317,773	146,268
2048	10,569,363	74,433,519	85,002,882	10,754,443	-	10,789,119	-
2049	9,615,765	77,937,203	87,552,968	11,066,795	-	11,296,977	-
2050	8,776,657	81,402,900	90,179,557	10,991,706	-	11,799,329	-
2051	7,931,688	84,953,256	92,884,944	11,235,426	-	12,313,952	-
2052	7,204,512	88,466,980	95,671,492	11,458,467	-	12,823,266	-
2053	6,388,744	92,152,893	98,541,637	11,333,368	-	13,357,538	-

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) * 14.49%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2054	5,554,679	95,943,207	101,497,886	11,565,402	-	13,906,943	-
2055	4,701,594	99,841,229	104,542,823	11,664,616	-	14,471,960	-
2056	3,821,995	103,857,113	107,679,108	11,613,852	-	15,054,061	-
2057	3,109,955	107,799,526	110,909,481	11,529,549	-	15,625,513	-
2058	2,460,982	111,775,783	114,236,765	11,623,018	-	16,201,870	-
2059	1,863,185	115,800,683	117,663,868	11,383,429	-	16,785,279	-
2060	1,320,111	119,873,673	121,193,784	11,078,492	-	17,375,657	-
2061	947,158	123,882,440	124,829,598	11,029,447	-	17,956,727	-
2062	672,766	127,901,720	128,574,486	10,653,923	-	18,539,321	-
2063	484,029	131,947,692	132,431,721	10,405,135	-	19,125,783	-
2064	304,909	136,099,764	136,404,673	10,332,731	-	19,727,625	-
2065	195,868	140,300,945	140,496,813	10,140,196	-	20,336,585	-
2066	108,769	144,602,948	144,711,717	10,021,907	-	20,960,159	-
2067	63,408	148,989,661	149,053,069	10,037,326	-	21,596,012	-
2068	28,254	153,496,407	153,524,661	9,920,363	-	22,249,264	-
2069	11,812	158,118,589	158,130,401	9,817,111	-	22,919,248	-
2070	5,554	162,868,759	162,874,313	9,797,373	-	23,607,784	-
2071	2,700	167,757,842	167,760,542	9,644,803	-	24,316,455	-
2072	789	172,792,569	172,793,358	9,540,464	-	25,046,238	-
2073	481	177,976,678	177,977,159	9,408,068	-	25,797,673	-
2074	-	183,316,474	183,316,474	9,224,879	-	26,571,675	-
2075	-	188,815,968	188,815,968	9,068,011	-	27,368,825	-
2076	-	194,480,447	194,480,447	8,815,983	-	28,189,890	-
2077	-	200,314,860	200,314,860	8,566,662	-	29,035,586	-
2078	-	206,324,306	206,324,306	8,301,197	-	29,906,654	-
2079	-	212,514,035	212,514,035	7,994,153	-	30,803,854	-
2080	-	218,889,456	218,889,456	7,689,210	-	31,727,969	-
2081	-	225,456,140	225,456,140	7,314,975	-	32,679,808	-
2082	-	232,219,824	232,219,824	6,944,017	-	33,660,203	-
2083	-	239,186,419	239,186,419	6,547,713	-	34,670,009	-
2084	-	246,362,012	246,362,012	6,128,198	-	35,710,109	-
2085	-	253,752,872	253,752,872	5,708,600	-	36,781,412	-

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) * 14.49%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2086	-	261,365,458	261,365,458	5,251,026	-	37,884,855	-
2087	-	269,206,422	269,206,422	4,800,509	-	39,021,400	-
2088	-	277,282,615	277,282,615	4,344,019	-	40,192,042	-
2089	-	285,601,093	285,601,093	3,883,011	-	41,397,803	-
2090	-	294,169,126	294,169,126	3,441,566	-	42,639,738	-
2091	-	302,994,200	302,994,200	3,018,379	-	43,918,930	-
2092	-	312,084,026	312,084,026	2,610,127	-	45,236,498	-
2093	-	321,446,547	321,446,547	2,230,125	-	46,593,593	-
2094	-	331,089,943	331,089,943	1,879,679	-	47,991,400	-
2095	-	341,022,641	341,022,641	1,563,850	-	49,431,142	-
2096	-	351,253,320	351,253,320	1,287,201	-	50,914,077	-
2097	-	361,790,920	361,790,920	1,043,514	-	52,441,499	-
2098	-	372,644,648	372,644,648	834,514	-	54,014,744	-
2099	-	383,823,987	383,823,987	656,457	-	55,635,186	-
2100	-	395,338,707	395,338,707	509,245	-	57,304,242	-
2101	-	407,198,868	407,198,868	388,350	-	59,023,369	-
2102	-	419,414,834	419,414,834	291,892	-	60,794,070	-
2103	-	431,997,279	431,997,279	215,842	-	62,617,892	-
2104	-	444,957,197	444,957,197	156,969	-	64,496,429	-
2105	-	458,305,913	458,305,913	112,226	-	66,431,322	-
2106	-	472,055,090	472,055,090	78,853	-	68,424,261	-
2107	-	486,216,743	486,216,743	54,430	-	70,476,989	-
2108	-	500,803,245	500,803,245	36,885	-	72,591,299	-
2109	-	515,827,342	515,827,342	24,521	-	74,769,038	-
2110	-	531,302,162	531,302,162	15,980	-	77,012,109	-
2111	-	547,241,227	547,241,227	10,202	-	79,322,472	-
2112	-	563,658,464	563,658,464	6,372	-	81,702,146	-
2113	-	580,568,218	580,568,218	3,888	-	84,153,211	-
2114	-	597,985,265	597,985,265	2,316	-	86,677,807	-
2115	-	615,924,823	615,924,823	1,345	-	89,278,141	-
2116	-	634,402,568	634,402,568	758	-	91,956,486	-
2117	-	653,434,645	653,434,645	418	-	94,715,180	-

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) * 14.49%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2118	-	673,037,684	673,037,684	222	-	97,556,636	-
2119	-	693,228,815	693,228,815	115	-	100,483,335	-
2120	-	714,025,679	714,025,679	59	-	103,497,835	-
2121	-	735,446,449	735,446,449	29	-	106,602,770	-
2122	-	757,509,842	757,509,842	14	-	109,800,853	-
2123	-	780,235,137	780,235,137	7	-	113,094,878	-
2124	-	803,642,191	803,642,191	3	-	116,487,725	-
2125	-	827,751,457	827,751,457	1	-	119,982,356	-
2126	-	852,584,001	852,584,001	1	-	123,581,827	-
2127	-	878,161,521	878,161,521	-	-	127,289,282	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
2022	814,790	4,318,163	4,318,163	-	(30,404)	784,386
2023	784,386	4,029,255	4,552,846	-	36,059	296,854
2024	296,854	3,806,748	4,795,705	-	-	-
2025	-	3,627,675	5,054,271	-	-	-
2026	-	3,432,819	5,260,127	-	-	-
2027	-	3,250,460	5,457,720	-	-	-
2028	-	3,187,551	5,774,769	-	-	-
2029	-	3,101,639	6,081,544	-	-	-
2030	-	3,052,255	6,424,819	-	-	-
2031	-	2,892,295	6,644,301	-	-	-
2032	-	2,792,448	6,924,629	-	-	-
2033	-	2,823,518	7,334,693	-	-	-
2034	-	2,786,781	7,668,333	-	-	-
2035	-	2,685,032	7,948,091	-	-	-
2036	-	2,436,844	8,071,824	-	-	-
2037	-	2,233,794	8,253,571	-	-	-
2038	-	2,156,013	8,554,727	-	-	-
2039	-	2,042,529	8,833,804	-	-	-
2040	-	1,962,979	9,164,134	-	-	-
2041	-	1,950,511	9,591,199	-	-	-
2042	-	1,866,907	9,947,017	-	-	-
2043	-	1,495,988	10,026,286	-	-	-
2044	-	1,167,494	10,130,597	-	-	-
2045	-	907,075	10,304,530	-	-	-
2046	-	612,452	10,460,249	-	-	-
2047	-	146,268	10,464,041	-	-	-
2048	-	-	10,754,443	-	-	-
2049	-	-	11,066,795	-	-	-
2050	-	-	10,991,706	-	-	-
2051	-	-	11,235,426	-	-	-
2052	-	-	11,458,467	-	-	-
2053	-	-	11,333,368	-	-	-
2054	-	-	11,565,402	-	-	-
2055	-	-	11,664,616	-	-	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
2056	-	-	11,613,852	-	-	-
2057	-	-	11,529,549	-	-	-
2058	-	-	11,623,018	-	-	-
2059	-	-	11,383,429	-	-	-
2060	-	-	11,078,492	-	-	-
2061	-	-	11,029,447	-	-	-
2062	-	-	10,653,923	-	-	-
2063	-	-	10,405,135	-	-	-
2064	-	-	10,332,731	-	-	-
2065	-	-	10,140,196	-	-	-
2066	-	-	10,021,907	-	-	-
2067	-	-	10,037,326	-	-	-
2068	-	-	9,920,363	-	-	-
2069	-	-	9,817,111	-	-	-
2070	-	-	9,797,373	-	-	-
2071	-	-	9,644,803	-	-	-
2072	-	-	9,540,464	-	-	-
2073	-	-	9,408,068	-	-	-
2074	-	-	9,224,879	-	-	-
2075	-	-	9,068,011	-	-	-
2076	-	-	8,815,983	-	-	-
2077	-	-	8,566,662	-	-	-
2078	-	-	8,301,197	-	-	-
2079	-	-	7,994,153	-	-	-
2080	-	-	7,689,210	-	-	-
2081	-	-	7,314,975	-	-	-
2082	-	-	6,944,017	-	-	-
2083	-	-	6,547,713	-	-	-
2084	-	-	6,128,198	-	-	-
2085	-	-	5,708,600	-	-	-
2086	-	-	5,251,026	-	-	-
2087	-	-	4,800,509	-	-	-
2088	-	-	4,344,019	-	-	-
2089	-	-	3,883,011	-	-	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
2090	-	-	3,441,566	-	-	-
2091	-	-	3,018,379	-	-	-
2092	-	-	2,610,127	-	-	-
2093	-	-	2,230,125	-	-	-
2094	-	-	1,879,679	-	-	-
2095	-	-	1,563,850	-	-	-
2096	-	-	1,287,201	-	-	-
2097	-	-	1,043,514	-	-	-
2098	-	-	834,514	-	-	-
2099	-	-	656,457	-	-	-
2100	-	-	509,245	-	-	-
2101	-	-	388,350	-	-	-
2102	-	-	291,892	-	-	-
2103	-	-	215,842	-	-	-
2104	-	-	156,969	-	-	-
2105	-	-	112,226	-	-	-
2106	-	-	78,853	-	-	-
2107	-	-	54,430	-	-	-
2108	-	-	36,885	-	-	-
2109	-	-	24,521	-	-	-
2110	-	-	15,980	-	-	-
2111	-	-	10,202	-	-	-
2112	-	-	6,372	-	-	-
2113	-	-	3,888	-	-	-
2114	-	-	2,316	-	-	-
2115	-	-	1,345	-	-	-
2116	-	-	758	-	-	-
2117	-	-	418	-	-	-
2118	-	-	222	-	-	-
2119	-	-	115	-	-	-
2120	-	-	59	-	-	-
2121	-	-	29	-	-	-
2122	-	-	14	-	-	-
2123	-	-	7	-	-	-

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)
2124	-	-	3	-	-	-
2125	-	-	1	-	-	-
2126	-	-	1	-	-	-
2127	-	-	-	-	-	-

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments (b)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g) = 3.54%
2023	784,386	4,552,846	-	4,552,846	-	4,474,339	4,474,339
2024	296,854	4,795,705	-	4,795,705	-	4,551,874	4,551,874
2025	-	5,054,271	-	5,054,271	-	4,633,275	4,633,275
2026	-	5,260,127	-	5,260,127	-	4,657,123	4,657,123
2027	-	5,457,720	-	5,457,720	-	4,666,857	4,666,857
2028	-	5,774,769	-	5,774,769	-	4,769,136	4,769,136
2029	-	6,081,544	-	6,081,544	-	4,850,771	4,850,771
2030	-	6,424,819	-	6,424,819	-	4,949,367	4,949,367
2031	-	6,644,301	-	6,644,301	-	4,943,448	4,943,448
2032	-	6,924,629	-	6,924,629	-	4,975,870	4,975,870
2033	-	7,334,693	-	7,334,693	-	5,090,334	5,090,334
2034	-	7,668,333	-	7,668,333	-	5,139,929	5,139,929
2035	-	7,948,091	-	7,948,091	-	5,145,301	5,145,301
2036	-	8,071,824	-	8,071,824	-	5,046,747	5,046,747
2037	-	8,253,571	-	8,253,571	-	4,983,949	4,983,949
2038	-	8,554,727	-	8,554,727	-	4,989,186	4,989,186
2039	-	8,833,804	-	8,833,804	-	4,975,802	4,975,802
2040	-	9,164,134	-	9,164,134	-	4,985,384	4,985,384
2041	-	9,591,199	-	9,591,199	-	5,039,320	5,039,320
2042	-	9,947,017	-	9,947,017	-	5,047,586	5,047,586
2043	-	10,026,286	-	10,026,286	-	4,913,860	4,913,860
2044	-	10,130,597	-	10,130,597	-	4,795,232	4,795,232
2045	-	10,304,530	-	10,304,530	-	4,710,799	4,710,799
2046	-	10,460,249	-	10,460,249	-	4,618,493	4,618,493
2047	-	10,464,041	-	10,464,041	-	4,462,205	4,462,205
2048	-	10,754,443	-	10,754,443	-	4,429,246	4,429,246
2049	-	11,066,795	-	11,066,795	-	4,402,056	4,402,056
2050	-	10,991,706	-	10,991,706	-	4,222,704	4,222,704
2051	-	11,235,426	-	11,235,426	-	4,168,761	4,168,761
2052	-	11,458,467	-	11,458,467	-	4,106,159	4,106,159
2053	-	11,333,368	-	11,333,368	-	3,922,474	3,922,474
2054	-	11,565,402	-	11,565,402	-	3,865,927	3,865,927

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		Actuarial Present Value of Projected Benefit Payments			Present Value of Benefit Payments Using the Single Discount Rate (g) = 3.54%
		Projected Benefit Payments (b)	"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	
2055	-	11,664,616	-	11,664,616	-	3,765,782	3,765,782
2056	-	11,613,852	-	11,613,852	-	3,621,203	3,621,203
2057	-	11,529,549	-	11,529,549	-	3,472,008	3,472,008
2058	-	11,623,018	-	11,623,018	-	3,380,487	3,380,487
2059	-	11,383,429	-	11,383,429	-	3,197,608	3,197,608
2060	-	11,078,492	-	11,078,492	-	3,005,555	3,005,555
2061	-	11,029,447	-	11,029,447	-	2,889,945	2,889,945
2062	-	10,653,923	-	10,653,923	-	2,696,108	2,696,108
2063	-	10,405,135	-	10,405,135	-	2,543,122	2,543,122
2064	-	10,332,731	-	10,332,731	-	2,439,082	2,439,082
2065	-	10,140,196	-	10,140,196	-	2,311,796	2,311,796
2066	-	10,021,907	-	10,021,907	-	2,206,711	2,206,711
2067	-	10,037,326	-	10,037,326	-	2,134,543	2,134,543
2068	-	9,920,363	-	9,920,363	-	2,037,541	2,037,541
2069	-	9,817,111	-	9,817,111	-	1,947,396	1,947,396
2070	-	9,797,373	-	9,797,373	-	1,877,033	1,877,033
2071	-	9,644,803	-	9,644,803	-	1,784,627	1,784,627
2072	-	9,540,464	-	9,540,464	-	1,704,965	1,704,965
2073	-	9,408,068	-	9,408,068	-	1,623,822	1,623,822
2074	-	9,224,879	-	9,224,879	-	1,537,767	1,537,767
2075	-	9,068,011	-	9,068,011	-	1,459,935	1,459,935
2076	-	8,815,983	-	8,815,983	-	1,370,832	1,370,832
2077	-	8,566,662	-	8,566,662	-	1,286,521	1,286,521
2078	-	8,301,197	-	8,301,197	-	1,204,031	1,204,031
2079	-	7,994,153	-	7,994,153	-	1,119,854	1,119,854
2080	-	7,689,210	-	7,689,210	-	1,040,309	1,040,309
2081	-	7,314,975	-	7,314,975	-	955,841	955,841
2082	-	6,944,017	-	6,944,017	-	876,345	876,345
2083	-	6,547,713	-	6,547,713	-	798,079	798,079
2084	-	6,128,198	-	6,128,198	-	721,408	721,408
2085	-	5,708,600	-	5,708,600	-	649,037	649,037
2086	-	5,251,026	-	5,251,026	-	576,602	576,602

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments (b)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g) = 3.54%
2087	-	4,800,509	-	4,800,509	-	509,109	509,109
2088	-	4,344,019	-	4,344,019	-	444,946	444,946
2089	-	3,883,011	-	3,883,011	-	384,128	384,128
2090	-	3,441,566	-	3,441,566	-	328,818	328,818
2091	-	3,018,379	-	3,018,379	-	278,525	278,525
2092	-	2,610,127	-	2,610,127	-	232,619	232,619
2093	-	2,230,125	-	2,230,125	-	191,957	191,957
2094	-	1,879,679	-	1,879,679	-	156,261	156,261
2095	-	1,563,850	-	1,563,850	-	125,561	125,561
2096	-	1,287,201	-	1,287,201	-	99,815	99,815
2097	-	1,043,514	-	1,043,514	-	78,152	78,152
2098	-	834,514	-	834,514	-	60,363	60,363
2099	-	656,457	-	656,457	-	45,860	45,860
2100	-	509,245	-	509,245	-	34,359	34,359
2101	-	388,350	-	388,350	-	25,307	25,307
2102	-	291,892	-	291,892	-	18,371	18,371
2103	-	215,842	-	215,842	-	13,120	13,120
2104	-	156,969	-	156,969	-	9,215	9,215
2105	-	112,226	-	112,226	-	6,363	6,363
2106	-	78,853	-	78,853	-	4,318	4,318
2107	-	54,430	-	54,430	-	2,879	2,879
2108	-	36,885	-	36,885	-	1,884	1,884
2109	-	24,521	-	24,521	-	1,210	1,210
2110	-	15,980	-	15,980	-	761	761
2111	-	10,202	-	10,202	-	469	469
2112	-	6,372	-	6,372	-	283	283
2113	-	3,888	-	3,888	-	167	167
2114	-	2,316	-	2,316	-	96	96
2115	-	1,345	-	1,345	-	54	54
2116	-	758	-	758	-	29	29
2117	-	418	-	418	-	16	16
2118	-	222	-	222	-	8	8

APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position (a)	Projected Benefit Payments (b)	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments (c)	"Unfunded" Portion of Benefit Payments (d)	Present Value of "Funded" Benefit Payments (e)	Present Value of "Unfunded" Benefit Payments (f)	Present Value of Benefit Payments Using the Single Discount Rate (g) = 3.54%
2119	-	115	-	115	-	4	4
2120	-	59	-	59	-	2	2
2121	-	29	-	29	-	1	1
2122	-	14	-	14	-	-	-
2123	-	7	-	7	-	-	-
2124	-	3	-	3	-	-	-
2125	-	1	-	1	-	-	-
2126	-	1	-	1	-	-	-
2127	-	-	-	-	-	-	-

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

Year	Differences between Expected and Actual Experience	Recognition Period (Years)										
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2018	-	5.00	-	-	-	-	-	-	-	-	-	-
2019	360,781	5.00	72,156	72,156	-	-	-	-	-	-	-	-
2020	-	5.00	-	-	-	-	-	-	-	-	-	-
2021	(3,202,642)	5.14	(623,082)	(623,082)	(623,082)	(623,082)	(87,234)	-	-	-	-	-
2022	8,036,704	6.88	1,168,126	1,168,126	1,168,126	1,168,126	1,168,126	1,168,126	1,027,948	-	-	-
Net Increase (Decrease) in OPEB Expense			617,200	617,200	545,044	545,044	1,080,892	1,168,126	1,027,948	-	-	-

Year	Changes of Assumptions	Recognition Period (Years)										
			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2018	(7,006,957)	5.00	(1,401,393)	-	-	-	-	-	-	-	-	-
2019	(7,856,855)	5.00	(1,571,371)	(1,571,371)	-	-	-	-	-	-	-	-
2020	16,510,306	5.00	3,302,061	3,302,061	3,302,061	-	-	-	-	-	-	-
2021	(4,962,899)	5.14	(965,545)	(965,545)	(965,545)	(965,545)	(135,176)	-	-	-	-	-
2022	(28,132,789)	6.88	(4,089,068)	(4,089,068)	(4,089,068)	(4,089,068)	(4,089,068)	(4,089,068)	(3,598,381)	-	-	-
Net Increase (Decrease) in OPEB Expense			(4,725,316)	(3,323,923)	(1,752,552)	(5,054,613)	(4,224,244)	(4,089,068)	(3,598,381)	-	-	-

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)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2018	28,079	5	5,615	-	-	-	-	-	-	-	-	-
2019	1,083	5	217	215	-	-	-	-	-	-	-	-
2020	32,792	5	6,558	6,559	6,559	-	-	-	-	-	-	-
2021	(138,055)	5	(27,611)	(27,611)	(27,611)	(27,611)	-	-	-	-	-	-
2022	87,439	5	17,488	17,488	17,488	17,488	17,487	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			2,267	(3,349)	(3,564)	(10,123)	17,487	-	-	-	-	-