



# **TOWN OF PLYMOUTH, MASSACHUSETTS**

**OTHER POSTEMPLOYMENT BENEFITS PROGRAM**

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

**Disclosures as of**  
**June 30, 2023**

KMS Actuarial, LLC  
52 Hunt Road  
Kingston, NH 03848

January, 2024





January 19, 2024

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

Dear Lynne:

We are pleased to present the enclosed report of the July 1, 2022 actuarial valuation of the retiree health care benefits for the Town of Plymouth. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 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 Plymouth as well as health plan rates provided by the Town as of July 1, 2023. 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 3.65%, the rate that reflects a tax-exempt, high quality municipal bond rate. The municipal bond rate of 3.65% is based on the Bond Buyer 20-Bond GO Index published on June 30, 2023.

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

Future actuarial valuation results may differ significantly from the current results presented in this report. Examples of potential sources of volatility include plan experience differing from that anticipated by the economic or demographic assumptions, the effect of new entrants, changes in economic or demographic assumptions, the effect of law changes and the delayed effect of smoothing techniques. 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 Plymouth 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 Plymouth and any of its officers or key personnel. None of the actuaries signing this report or anyone closely associated with them has a relationship with the Town of Plymouth, other than as consulting actuary for this assignment, that would impair our independence.

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.

Ms. Lynne A. Barrett

January 19, 2024

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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,



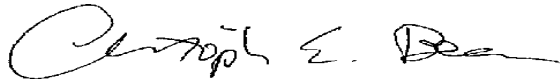
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Linda L. Bournival, FSA, EA  
Member, American Academy of Actuaries  
(603) 792-9494



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Amanda J. Makarevich, FSA  
Member, American Academy of Actuaries  
(603) 792-9494



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Christopher E. Bean, ASA  
Member, American Academy of Actuaries  
(508) 628-9022

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## EXECUTIVE SUMMARY

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### Purpose of Report

This report presents the results of the actuarial valuation of the Town of Plymouth's retiree health care benefits as of July 1, 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 Plymouth. The effective date for GASB 75 is for fiscal years beginning after June 15, 2017, which is the fiscal year ending June 30, 2018 for the Town of Plymouth.

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

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

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

## EXECUTIVE SUMMARY

### Town of Plymouth Other Postemployment Benefits Program

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

### Summary of Principal Results

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

Disclosure Date	June 30, 2023	June 30, 2022	% Change
Valuation Date	July 1, 2022	July 1, 2020	
<b>Membership Data</b>			
Active Plan Members	1,602	1,624	(1.4%)
Inactive Plan Members (excludes covered spouses)	1,379	1,392	(0.9%)
Total Plan Members	2,981	3,016	(1.2%)
Covered Spouses	870	790	10.1%
Covered Payroll	\$128,790,794	\$118,519,409	8.7%
<b>Net OPEB Liability</b>			
Discount Rate	3.65%	3.54%	
Total OPEB Liability (TOL)	\$587,234,406	\$766,749,426	(23.4%)
Fiduciary Net Position (FNP)	\$10,819,823	\$8,587,208	26.0%
Net OPEB Liability	\$576,414,583	\$758,162,218	(24.0%)
FNP as % of TOL	1.8%	1.1%	
<b>OPEB Expense (Income)*</b>			
OPEB Expense (Income)	(\$148,456,266)	\$62,445,315	(337.7%)
Deferred Outflows	\$139,417,335	\$180,044,398	
Deferred Inflows	\$221,997,352	\$248,141,538	
Recognition Period	6.54	6.78	

\*June 30, 2022 values reflect correction to FY2022 OPEB trust contribution.



## 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 gain of approximately \$25,801,000. This gain is primarily attributable to the following:

- ◆ a gain due to lower than expected medical premiums since the prior valuation
- ◆ a gain due to active employee turnover replaced by lower service employees
- ◆ a gain due to more retirees and beneficiaries dying or dropping coverage than expected since the prior valuation

### Changes of Assumptions

The discount rate changed from 3.54% as of June 30, 2022 to 3.65% 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	(1,249,000)
◆ Increase due to change in Trend Assumption	12,781,000
◆ Increase due to change in Mortality Tables and Mortality Improvement Rates	14,515,000
◆ Decrease due to change in Discount Rate	(10,169,000)
Total	\$ 15,878,000

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

### Changes of Benefit Terms

On July 1, 2023, the prescription drug coverage included in both Medicare plans offered was replaced by the BCBS Blue Medicare Rx plan, leading to significant decreases in Medicare premiums. Additionally, employees hired on or after July 1, 2024 will be required to contribute 30% of the medical and dental premium upon retirement. Since this change only affects future employees, it has no impact on this 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, 2023, is \$587,234,406. The Total OPEB Liability as of the prior measurement date, June 30, 2022, was \$766,749,426. During the current measurement period ending June 30, 2023, the Total OPEB Liability decreased by \$179,515,020, or -23.4%. The development of the Total OPEB Liability for the current measurement period is shown in Section 1, Exhibit 1.2.

## EXECUTIVE SUMMARY

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### 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 \$10,819,823. The Fiduciary Net Position as of the prior measurement date, June 30, 2022, was \$8,587,208. During the plan years ended June 30, 2023 and June 30, 2022, the actual rates of return were 10.99% and -12.30%, 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

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

### Discount Rate

As of the June 30, 2023 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 3.65% 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 3.65%.

### OPEB Expense (Income)

The OPEB Income for the current measurement period ending June 30, 2023, is \$148,456,266. Benefit changes are recognized immediately and experience gains and losses and assumption changes developed in this valuation are recognized over 6.54 years. Investment gains and losses are recognized over 5 years. The OPEB Expense for the prior measurement period was \$62,445,315. 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 special legislation enacted under Chapter 113 of the Acts of 2012 for the purpose of accumulating assets to prefund the OPEB liabilities. Plan assets segregated and restricted in an OPEB trust must be dedicated to providing plan benefits to retirees and beneficiaries in accordance with the terms of the plan and must be legally protected from creditors of the employer. Further, 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 Equities	\$4,523,593	\$3,649,508
International Equities	2,271,304	1,554,739
Fixed Income	4,024,926	3,382,961
Total Market Value of Assets	\$10,819,823	\$8,587,208
Asset Activity		
Market value, beginning of year	\$8,587,208	\$8,619,502
Employer Premiums	17,636,873	20,322,457
OPEB Trust Contributions*	1,171,619	1,134,259
Benefit Payments	(17,636,873)	(20,322,457)
Administrative Expenses	-	-
Investment Return*	1,060,996	(1,166,553)
Market value, end of year	\$10,819,823	\$8,587,208
<b>Money-Weighted Rate of Return</b>	10.99%	-12.30%
(Gain) / Loss on OPEB Plan Investments		
Projected earnings	\$555,373	\$520,547
Actual earnings	1,060,996	(1,166,553)
(Gain) / Loss on OPEB plan investments	(\$505,623)	\$1,687,100

\*FY2022 OPEB Trust Contributions and Investment Return amounts disclosed in the June 30, 2022 report have been revised.

## 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	\$358,078,989
b. Retirees, Covered Spouses and Survivors	408,670,437
c. Total OPEB Liability at 3.54% (a. + b.)	\$766,749,426
2. Service Cost	\$25,374,857
3. Expected Benefit Payments	
a. Current retirees	(\$16,922,790)
b. Future retirees	(714,083)
c. Total (a. + b.)	(\$17,636,873)
4. Interest [3.54% x (1.c. + 2. + .5 x 3.c)]	\$27,729,027
5. Changes of benefit terms	(\$205,058,796)
6. Differences between expected and actual experience	(\$25,800,860)
7. Changes of assumptions or other inputs	\$15,877,625
8. Total OPEB Liability, end of year (1.c. + 2. + 3.c. + 4. + 5. + 6. + 7.)	
a. Actives	\$247,613,010
b. Retirees, Covered Spouses and Survivors	339,621,396
c. Total OPEB Liability at 3.65% (a. + b.)	\$587,234,406

## SECTION 1 - PRINCIPAL VALUATION RESULTS

### Exhibit 1.3 - Development of Actuarially Determined Employer Contributions

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

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

Fiscal Year Ending	June 30, 2023	June 30, 2024
<b>Discount Rate</b>	<b>3.54%</b>	<b>3.65%</b>
1. Normal Cost	\$25,374,857	\$17,765,602
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$766,749,426	\$587,234,406
b. Actuarial Value of Plan Assets	\$8,587,208	\$10,819,823
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$758,162,218	\$576,414,583
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$758,162,218	\$576,414,583
b. Amortization Period in years	30	30
c. Payroll Growth Rate	3.5%	3.5%
d. Amortization Factor	29.83	29.38
e. Amortization Amount (3.a. / 3.d.)	\$25,416,098	\$19,619,285
4. Interest on 1. and 3.e.	\$1,798,000	\$1,364,548
5. Actuarially Determined Employer Contribution (1. + 3.e. + 4.)	\$52,588,955	\$38,749,435
6. Actual Employer Contribution to OPEB Trust	\$1,171,619	TBD
7. Expected Benefit Payments	\$17,636,873	
8. Total Contribution (6. + 7.)	\$18,808,492	

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.1 - Plan Description

#### Plan Administration

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

#### Plan Membership

At June 30, 2023, OPEB plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefit payments <sup>1</sup>	1,379
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	1,602
	<u>2,981</u>

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

#### Benefits Provided

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

#### Employer Future Period Contributions

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

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.2 - Net OPEB Liability

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

Total OPEB liability	\$ 587,234,406
Fiduciary net position	(10,819,823)
Net OPEB liability	\$ 576,414,583

Fiduciary net position as a percentage of the total OPEB liability 1.84%

#### 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	3.65%, 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 Employees Mortality Table projected generationally with Scale MP-2018.
Healthy Retiree Mortality - General and Public Safety employees	RP-2014 Blue Collar Healthy Annuitant Table projected generationally with Scale MP-2018.
Disabled Retiree Mortality - General and Public Safety employees	RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2018.
Pre-Retirement Mortality - Teachers	PUB-2010 Teachers Headcount-Weighted Employee Mortality Table, base year 2010, projected with generational mortality improvement using Scale MP-2021.
Healthy Retiree Mortality - Teachers	PUB-2010 Teachers Headcount-Weighted Retiree 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

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 <sup>1</sup>
Domestic Equities	40%	5.14%
International Equities	20%	5.95%
Fixed Income	40%	2.26%
Total	100%	

<sup>1</sup> Target asset allocation provided by Fiduciary Investment Advisors in the investment policy statement and long-term expected real rates of return are based on those provided in the Horizon Actuarial Services, LLC "Survey of Capital Market Expectations, 2023 Edition" and professional judgement.

#### Discount Rate

The discount rate used to measure the total OPEB liability was 3.65%. 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 3.65% 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 3.65 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (2.65 percent) or 1-percentage point higher (4.65 percent) than the current rate:

	<b>1% Decrease (2.65%)</b>	<b>Assumed Discount Rate (3.65%)</b>	<b>1% Increase (4.65%)</b>
Total OPEB Liability	\$ 690,348,194	\$ 587,234,406	\$ 505,767,019
Fiduciary Net Position	(10,819,823)	(10,819,823)	(10,819,823)
Net OPEB Liability	\$ 679,528,371	\$ 576,414,583	\$ 494,947,196
% Change in NOL	17.9%		-14.1%

#### 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:

	<b>1% Decrease 7% Year 1 Decreasing to 3.1%</b>	<b>Assumed Healthcare Cost Trend Rates 8% Year 1 Decreasing to 4.1%</b>	<b>1% Increase 9% Year 1 Decreasing to 5.1%</b>
Total OPEB Liability	\$ 496,118,278	\$ 587,234,406	\$ 705,651,571
Fiduciary Net Position	(10,819,823)	(10,819,823)	(10,819,823)
Net OPEB Liability	\$ 485,298,455	\$ 576,414,583	\$ 694,831,748
% Change in NOL	-15.8%		20.5%

## 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
<b>Total OPEB Liability</b>					
Service cost	\$ 25,374,857	\$ 38,009,669	\$ 40,436,080	\$ 28,061,321	\$ 21,914,725
Interest	27,729,027	21,117,382	22,650,812	27,716,155	23,742,073
Changes of benefit terms	(205,058,796)	-	(9,686,259)	(32,274,418)	-
Differences between expected and actual experience	(25,800,860)	-	(52,938,875)	-	15,849,776
Changes of assumptions	15,877,625	(221,863,323)	(25,487,904)	216,350,799	129,379,977
Benefit payments	(17,636,873)	(20,322,457)	(19,306,442)	(19,083,851)	(18,182,695)
<b>Net change in total OPEB liability</b>	<b>\$(179,515,020)</b>	<b>\$(183,058,729)</b>	<b>\$ (44,332,588)</b>	<b>\$ 220,770,006</b>	<b>\$ 172,703,856</b>
<b>Total OPEB liability—beginning</b>	<b>\$ 766,749,426</b>	<b>\$ 949,808,155</b>	<b>\$994,140,743</b>	<b>\$ 773,370,737</b>	<b>\$ 600,666,881</b>
<b>Total OPEB liability—ending (a)</b>	<b>\$ 587,234,406</b>	<b>\$ 766,749,426</b>	<b>\$949,808,155</b>	<b>\$ 994,140,743</b>	<b>\$ 773,370,737</b>
<b>Plan Fiduciary Net Position</b>					
Contributions—employer	\$ 18,808,492	\$ 21,456,716	\$ 19,831,950	\$ 20,125,099	\$ 19,153,288
Net investment income	1,060,996	(1,166,553)	1,511,928	377,296	370,873
Benefit payments	(17,636,873)	(20,322,457)	(19,306,442)	(19,083,851)	(18,182,695)
Administrative expenses	-	-	-	-	-
Other	-	-	-	-	-
<b>Net change in plan fiduciary net position</b>	<b>\$ 2,232,615</b>	<b>\$ (32,294)</b>	<b>\$ 2,037,436</b>	<b>\$ 1,418,544</b>	<b>\$ 1,341,466</b>
<b>Plan fiduciary net position—beginning</b>	<b>\$ 8,587,208</b>	<b>\$ 8,619,502</b>	<b>\$ 6,582,066</b>	<b>\$ 5,163,522</b>	<b>\$ 3,822,056</b>
<b>Plan fiduciary net position—ending (b)</b>	<b>\$ 10,819,823</b>	<b>\$ 8,587,208</b>	<b>\$ 8,619,502</b>	<b>\$ 6,582,066</b>	<b>\$ 5,163,522</b>
<b>Net OPEB liability—ending (a) – (b)</b>	<b>\$ 576,414,583</b>	<b>\$ 758,162,218</b>	<b>\$941,188,653</b>	<b>\$ 987,558,677</b>	<b>\$ 768,207,215</b>
Plan fiduciary net position as a percentage of the total OPEB liability	1.84%	1.12%	0.91%	0.66%	0.67%
Covered payroll	\$ 128,790,794	\$ 118,519,409	\$117,913,268	\$ 112,135,762	\$ 108,493,908
Net OPEB liability as a percentage of covered payroll	447.56%	639.69%	798.20%	880.68%	708.06%
<b>Discount Rate</b>	<b>3.65%</b>	<b>3.54%</b>	<b>2.16%</b>	<b>2.21%</b>	<b>3.50%</b>

## 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
<b>Total OPEB Liability</b>					
Service cost	\$ 23,038,206	\$ 27,863,367			
Interest	22,140,028	19,356,363			
Changes of benefit terms	-	-			
Differences between expected and actual experience	-	-			
Changes of assumptions	(31,391,364)	(86,284,600)			
Benefit payments	(17,036,667)	(16,651,413)			
<b>Net change in total OPEB liability</b>	<b>\$ (3,249,797)</b>	<b>\$ (55,716,283)</b>			
<b>Total OPEB liability—beginning</b>	<b>\$603,916,678</b>	<b>\$659,632,961</b>			
<b>Total OPEB liability—ending (a)</b>	<b>\$600,666,881</b>	<b>\$603,916,678</b>			
<b>Plan Fiduciary Net Position</b>					
Contributions—employer	\$ 17,980,980	\$ 17,363,363			
Net investment income	228,269	171,891			
Benefit payments	(17,036,667)	(16,651,413)			
Administrative expenses	-	-			
Other	-	-			
<b>Net change in plan fiduciary net position</b>	<b>\$ 1,172,582</b>	<b>\$ 883,841</b>			
<b>Plan fiduciary net position—beginning</b>	<b>\$ 2,649,474</b>	<b>\$ 1,765,633</b>			
<b>Plan fiduciary net position—ending (b)</b>	<b>\$ 3,822,056</b>	<b>\$ 2,649,474</b>			
<b>Net OPEB liability—ending (a) – (b)</b>	<b>\$596,844,825</b>	<b>\$601,267,204</b>			
Plan fiduciary net position as a percentage of the total OPEB liability	0.64%	0.44%			
Covered payroll	\$104,133,239	\$ 92,397,157			
Net OPEB liability as a percentage of covered payroll	573.15%	650.74%			
<b>Discount Rate</b>	<b>3.87%</b>	<b>3.58%</b>			

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

#### Changes of Benefit Terms

On July 1, 2023, the prescription drug coverage included in both Medicare plans offered was replaced by the BCBS Blue Medicare Rx plan, leading to significant decreases in Medicare premiums. Additionally, employees hired on or after July 1, 2024 will be required to contribute 30% of the medical and dental premium upon retirement. Since this change only affects future employees, it has no impact on this valuation. All other benefit terms are the same as those used in the prior measurement.

#### Changes of Assumptions

The discount rate changed from 3.54% as of June 30, 2022 to 3.65% 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	10.99%	-12.30%	21.56%	6.17%	7.88%	6.50%	7.11%			

\*FY2022 Investment Return disclosed in the June 30, 2022 report has been revised.

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 <sub>mw</sub> ) <sup>(c)</sup>
Beginning value - July 1, 2022	\$ 8,587,208	12	1.00	\$ 9,530,721
Monthly net external cash flows:				
July	1,171,619	11	0.92	1,289,102
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, 2023				\$ 10,819,823
Money-weighted rate of return:				10.99%

## 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	\$ 52,588,955	\$ 65,195,315	\$ 69,213,245	\$ 55,546,616	\$ 44,515,201
Contributions in relation to the actuarially determined contribution*	18,808,492	21,456,716	19,831,950	20,125,099	19,153,288
Contribution deficiency (excess)	\$ 33,780,463	\$ 43,738,599	\$ 49,381,295	\$ 35,421,517	\$ 25,361,913
Covered payroll	\$ 128,790,794	\$ 118,519,409	\$ 117,913,268	\$ 112,135,762	\$ 108,493,908
Contributions as a percentage of covered payroll	14.60%	18.10%	16.82%	17.95%	17.65%
Discount rate	3.54%	2.16%	2.21%	3.50%	3.87%
Inflation	2.50%	2.40%	2.20%	2.40%	2.60%

\*FY2022 contribution disclosed in the June 30, 2022 report has been revised.

## 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	\$ 44,853,623	\$ 39,477,033			
Contributions in relation to the actuarially determined contribution	<u>17,980,980</u>	<u>17,363,363</u>			
Contribution deficiency (excess)	<u>\$ 26,872,643</u>	<u>\$ 22,113,670</u>			
Covered payroll	\$ 104,133,239	\$ 92,397,157			
Contributions as a percentage of covered payroll	17.27%	18.79%			
Discount rate	3.58%	4.00%			
Inflation	2.25%	2.25%			

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	Increasing at 3.5% over 30 years on an open amortization period for partial pre-funding.
Amortization period	30 years
Asset valuation method	Market value
Healthcare cost trend rates	8% 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)
2018	\$ -	\$ -	\$ -	\$ -	\$ -
2019	15,849,776	-	11,740,575	4,109,201	-
2020	-	-	-	-	-
2021	-	52,938,875	(23,424,282)	-	29,514,593
2022	-	-	-	-	-
2023	-	25,800,860	(3,945,086)	-	21,855,774
Total				<u>\$ 4,109,201</u>	<u>\$ 51,370,367</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)
2018	\$ -	\$ 31,391,364	\$ (31,391,364)	\$ -	\$ -
2019	129,379,977	-	95,837,020	33,542,957	-
2020	216,350,799	-	128,207,880	88,142,919	-
2021	-	25,487,904	(11,277,834)	-	14,210,070
2022	-	221,863,323	(65,446,408)	-	156,416,915
2023	15,877,625	-	2,427,771	13,449,854	-
Total				<u>\$135,135,730</u>	<u>\$ 170,626,985</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
	Investment Earnings Less Than Projected	Investment Earnings Greater Than Projected	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)
2018	\$ -	\$ 33,167	\$ (33,167)	\$ -	\$ -
2019	-	76,529	(76,529)	-	-
2020	4,927	-	3,941	986	-
2021	-	1,090,857	(654,513)	-	436,344
2022	1,687,100	-	674,840	1,012,260	-
2023	-	505,623	(101,125)	-	404,498
Subtotal				\$ 1,013,246	\$ 840,842
Net				\$ 172,404	\$ -

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	\$	7,778,707
2025	\$	2,398,841
2026	\$	(21,532,616)
2027	\$	(43,364,190)
2028	\$	(27,041,414)
Thereafter	\$	(819,345)
<b>Deferred Outflows</b>	<b>\$</b>	<b>139,417,335</b>
<b>Deferred Inflows</b>	<b>\$</b>	<b>221,997,352</b>

## SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

### Exhibit 4.2 - OPEB Expense (Income)

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	\$ 25,374,857
2. Interest on the total OPEB liability	
a. Total OPEB liability, beginning of year	766,749,426
b. Service cost, beginning of year	25,374,857
c. Benefit payments	(17,636,873)
d. Interest on total OPEB liability = 3.54% times (a. + b. + .5 times c.)	27,729,027
3. Differences between expected and actual experience	(9,405,065)
4. Changes of benefit terms	(205,058,796)
5. Changes of assumptions	13,455,279
6. Projected earnings on OPEB plan investments	
a. Plan fiduciary net position, beginning of year	8,587,208
b. Contributions - Employer	18,808,492
c. Benefit payments	(17,636,873)
d. Administrative expenses and other	-
e. Total projected earnings	(555,373)
7. Differences between projected and actual earnings on OPEB plan investments	3,805
8. OPEB plan administrative expenses	-
9. Other changes in fiduciary net position	-
10. Total OPEB Expense (Income)	\$ (148,456,266)

## SECTION 5 - SUMMARY OF PLAN PROVISIONS

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

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

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

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

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

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

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

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

<b>Non-Medicare Plans - July 1, 2023</b>	<b>Individual</b>	<b>Family</b>
Blue Choice	\$1,079.06	\$2,556.78
Blue Care Elect	\$1,173.57	\$2,702.84
Access Blue New England Saver (QHDHP)	\$930.11	\$2,203.95
<b>Medicare Plans - July 1, 2023</b>		
Medex w/ OBRA	\$385.40	
Managed Blue	\$364.69	

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

Retired prior to July 1, 1994 - 1%

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

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

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

Hired on or after July 1, 2018 - 25%

Hired on or after July 1, 2024 - 30%

## SECTION 5 - SUMMARY OF PLAN PROVISIONS

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

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

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

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

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

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

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

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

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

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

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<b>Valuation Date</b>	July 1, 2022
<b>Disclosure Date</b>	June 30, 2023
<b>GASB 75 Reporting Date</b>	June 30, 2023
<b>Long-Term Expected Rate of Return</b>	<p>6%, net of investment expenses and including inflation at 2.5%. Previously, 5.75%.</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>
<b>Municipal Bond Rate</b>	3.65%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2023.
<b>Discount Rate (GASB)</b>	<p>3.65%, compounded annually, for the measurement as of June 30, 2023.</p> <p>3.54%, 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>
<b>Discount Rate (ADEC)</b>	3.54%, compounded annually, for development of the Actuarially Determined Contribution (ADEC) as of June 30, 2023.
<b>Amortization Method</b>	Increasing at 3.5% over 30 years on an open amortization period for partial pre-funding.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

### Medical Trend Rates

Year	Trend
1	8.00%
2	7.50%
3	7.00%
4	6.50%
5	6.00%
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

Dental trend rates are 4% per year.

### Medicare Trend Rates

5.5% per year.

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

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

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

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

### Dependent Status

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

70% of employees are assumed to retire with a covered spouse.

For current retirees, the actual census information is used.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

### Medical Per Capita Costs

The following annual per capita costs are for the fiscal year beginning July 1, 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	\$4,660	\$5,471	\$4,660	\$5,471
20-24	3,672	5,825	3,672	5,825
25-29	3,821	8,593	3,821	8,593
30-34	4,800	10,858	4,800	10,858
35-39	6,021	11,184	6,021	11,184
40-44	7,502	11,454	7,502	11,454
45-49	9,469	12,572	9,469	12,572
50-54	12,479	14,791	12,479	14,791
55-59	16,217	17,102	16,217	17,102
60-64	20,811	20,355	20,811	20,355
65-69	3,394	3,306	25,965	24,399
70-74	4,068	3,899	31,110	28,770
75-79	4,803	4,524	36,739	33,384
80-84	5,521	5,189	42,228	38,286
85-89	6,150	5,800	47,037	42,797
90-94	6,696	6,190	51,203	45,677
95+	7,116	5,987	54,428	44,167

### Retiree Contributions

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

Plan	Contribution				
	1%	10%	20%	22.5%	25%
Non-Medicare	\$ 136	\$ 1,365	\$ 2,729	\$ 3,070	\$ 3,412
Medicare	42	418	836	940	1,045

### 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

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### Use of ProVal®

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



## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

### General and Public Safety Employees

#### Pre-Retirement Mortality

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

#### Healthy Retiree Mortality

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

#### Disabled Retiree Mortality

Disabled retiree mortality rates for General and Public Safety employees are based on the RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2018.

#### Turnover Rates

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

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

#### Disability Rates

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

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

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

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

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

### General and Public Safety Employees

#### Retirement Rates

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

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

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

### Teachers

#### Pre-Retirement Mortality

Pre-retirement mortality rates for Teachers are based on the PUB-2010 Teachers Headcount-Weighted Employee Mortality Table, base year 2010, projected with generational mortality 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:

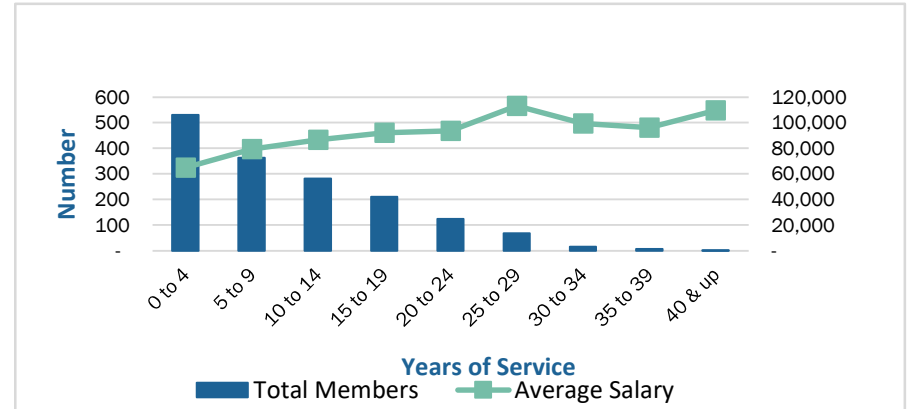
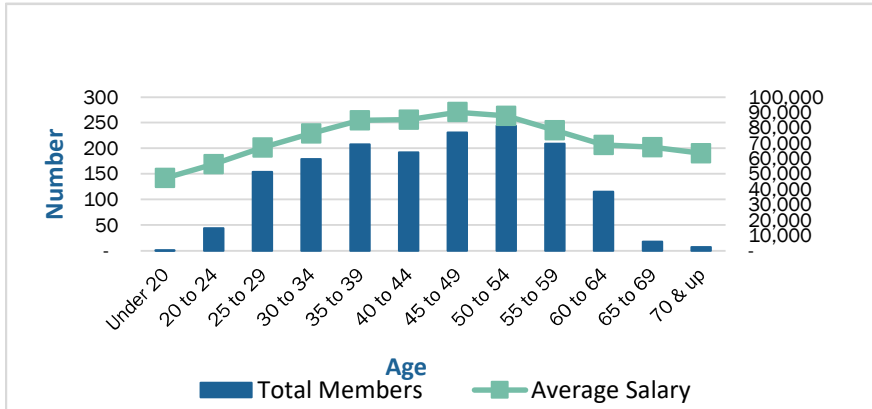
Age	Years of Service					
	Less than 20		20-29		30+	
	Male	Female	Male	Female	Male	Female
50	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
51	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
52	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
53	0.0%	0.0%	1.5%	1.0%	2.0%	1.5%
54	0.0%	0.0%	2.5%	1.0%	2.0%	2.0%
55	5.0%	3.0%	3.0%	3.0%	6.0%	5.0%
56	5.0%	3.0%	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	47,344	47,344	
20 to 24	42	2	-	-	-	-	-	-	-	44	2,479,978	56,363	
25 to 29	121	31	2	-	-	-	-	-	-	154	10,343,594	67,166	
30 to 34	90	71	18	-	-	-	-	-	-	179	13,650,348	76,259	
35 to 39	76	58	60	13	1	-	-	-	-	208	17,657,314	84,891	
40 to 44	51	56	37	44	4	-	-	-	-	192	16,391,462	85,372	
45 to 49	39	50	51	48	37	6	-	-	-	231	20,830,136	90,174	
50 to 54	42	45	53	49	27	26	2	-	-	244	21,421,094	87,791	
55 to 59	44	27	44	29	31	20	10	4	-	209	16,406,009	78,498	
60 to 64	21	17	15	23	17	15	4	2	1	115	7,904,757	68,737	
65 to 69	2	5	1	2	6	1	-	-	1	18	1,214,383	67,466	
70 & up	1	1	1	2	1	-	-	1	-	7	444,374	63,482	
Total	530	363	282	210	124	68	16	7	2	1,602	128,790,794	80,394	
Total Salary	34,421,173	28,804,235	24,442,348	19,352,793	11,590,303	7,696,588	1,590,775	673,331	219,247				
Average Salary	64,946	79,351	86,675	92,156	93,470	113,185	99,423	96,190	109,624				

Average Age: 44.8      Average Service: 10.3



## 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	Blue Choice	Blue Care Elect	Access Blue New England Saver (QHDHP)	Medex w/ OBRA	Managed Blue	Total
Under 40	4	0	0	0	0	4
40 to 44	6	2	0	0	0	8
45 to 49	6	0	0	0	0	6
50 to 54	21	1	0	0	0	22
55 to 59	63	8	0	0	0	71
60 to 64	73	18	0	11	20	122
65 to 69	24	3	0	77	198	302
70 to 74	16	6	0	146	168	336
75 to 79	3	5	0	175	51	234
80 to 84	2	3	0	120	7	132
85 to 89	3	1	0	54	6	64
90+	0	0	0	27	0	27
Total	221	47	0	610	450	1,328
Covered Spouses	174	27	0	272	285	758

Average Age: 71.8

In addition, there are 163 retirees, survivors and covered spouses that are not covered under any medical plan but are covered under either a life insurance plan and/or a dental plan which the Town contributes to.

## SECTION 8 - GLOSSARY OF TERMS

---

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

**Actuarial Cost Method (or Funding Method)** – A procedure for allocating the Actuarial Present Value of projected benefit payments to the current year (Service Cost) and the past (Total OPEB Liability).

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

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

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

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

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

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

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

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

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

## SECTION 8 - GLOSSARY OF TERMS

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**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

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

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

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

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

## SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	Town	School	Sewer	Water	Solid Waste	Airport	Total
<b>Summary of Member Data Used in Valuation</b>							
Active Members	480	1,089	3	18	4	8	1,602
Average Age	43.6	45.1	46.4	46.7	63.5	55.8	44.8
Average Service	10.5	10.2	3.8	10.7	5.5	12.1	10.3
Covered Payroll	45,493,426	80,755,757	244,588	1,419,175	249,437	628,410	128,790,794
Retired Members and Survivors	457	881	5	24	6	6	1,379
Average Age	70.0	72.6	81.3	71.6	76.1	75.3	71.8
Covered Spouses	282	567	2	12	4	3	870
Expected Benefit Payments	6,448,137	10,728,814	39,069	292,614	52,136	76,103	17,636,873
OPEB Trust contributions	398,065	752,550	1,641	13,496	2,297	3,570	1,171,619
Total Employer Contributions	6,846,202	11,481,364	40,710	306,110	54,433	79,673	18,808,492
<b>Beginning Net OPEB Liability - June 30, 2022</b>							
Total OPEB Liability	269,627,095	481,371,707	1,370,836	10,753,538	1,427,632	2,198,618	766,749,426
Fiduciary Net Position	2,967,748	5,441,858	14,455	122,541	16,882	23,724	8,587,208
Net OPEB Liability	266,659,347	475,929,849	1,356,381	10,630,997	1,410,750	2,174,894	758,162,218
Total OPEB Liability, beginning of year	269,627,095	481,371,707	1,370,836	10,753,538	1,427,632	2,198,618	766,749,426
Service cost	9,764,174	15,169,143	45,843	248,562	50,446	96,689	25,374,857
Interest	9,776,320	17,387,645	49,459	384,295	51,401	79,907	27,729,027
Changes of benefit terms	(68,130,774)	(132,307,578)	(408,227)	(2,809,828)	(575,255)	(827,134)	(205,058,796)
Differences between expected and actual experience	(15,403,974)	(9,146,895)	(203,933)	(1,566,157)	220,010	300,089	(25,800,860)
Changes of assumptions	331,981	15,445,393	7,557	46,497	29,157	17,040	15,877,625
Benefit payments	(6,448,137)	(10,728,814)	(39,069)	(292,614)	(52,136)	(76,103)	(17,636,873)
Net change in total OPEB liability	(70,110,410)	(104,181,106)	(548,370)	(3,989,245)	(276,377)	(409,512)	(179,515,020)
Total OPEB Liability, end of year	199,516,685	377,190,601	822,466	6,764,293	1,151,255	1,789,106	587,234,406
<b>Ending Net OPEB Liability - June 30, 2023</b>							
Total OPEB Liability	199,516,685	377,190,601	822,466	6,764,293	1,151,255	1,789,106	587,234,406
Fiduciary Net Position	3,731,808	6,867,789	17,849	150,854	21,264	30,259	10,819,823
Net OPEB Liability	195,784,877	370,322,812	804,617	6,613,439	1,129,991	1,758,847	576,414,583

## SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	Town	School	Sewer	Water	Solid Waste	Airport	Total
<b>Total Deferred Outflows of Resources</b>							
Differences between Expected and Actual Experience	1,444,999	2,579,791	7,347	57,631	7,651	11,783	4,109,201
Changes in Assumptions	47,520,419	84,839,342	241,603	1,895,257	251,613	387,495	135,135,730
Differences between Expected and Actual Earnings on OPEB Plan Investments	59,583	109,255	290	2,460	339	476	172,404
<b>Total Deferred Outflows of Resources</b>	<b>49,025,001</b>	<b>87,528,388</b>	<b>249,240</b>	<b>1,955,348</b>	<b>259,603</b>	<b>399,755</b>	<b>139,417,335</b>
<b>Total Deferred Inflows of Resources</b>							
Differences between Expected and Actual Experience	18,064,367	32,250,746	91,843	720,461	95,648	147,302	51,370,367
Changes in Assumptions	60,000,903	107,121,049	305,056	2,393,016	317,695	489,265	170,626,985
Differences between Expected and Actual Earnings on OPEB Plan Investments	0	0	0	0	0	0	0
<b>Total Deferred Inflows of Resources</b>	<b>78,065,270</b>	<b>139,371,796</b>	<b>396,899</b>	<b>3,113,477</b>	<b>413,343</b>	<b>636,567</b>	<b>221,997,352</b>
<b>Total OPEB Expense (Income)</b>	<b>(59,072,082)</b>	<b>(84,911,564)</b>	<b>(480,756)</b>	<b>(3,509,622)</b>	<b>(195,187)</b>	<b>(287,056)</b>	<b>(148,456,266)</b>
<b>Sensitivity of the Net OPEB Liability to Changes in the Discount Rate</b>							
Current Discount Rate: 3.65%	195,784,877	370,322,812	804,617	6,613,439	1,129,991	1,758,847	576,414,583
1% Decrease in the Discount Rate: 2.65%	230,818,453	436,554,544	949,036	7,801,196	1,332,142	2,073,000	679,528,371
1% Increase in the Discount Rate: 4.65%	168,105,806	317,994,930	690,516	5,675,025	970,277	1,510,643	494,947,196
<b>Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates</b>							
Current Trend Rates	195,784,877	370,322,812	804,617	6,613,439	1,129,991	1,758,847	576,414,583
1% Decrease in Trend Rates	164,827,584	311,797,380	677,002	5,563,882	951,361	1,481,247	485,298,455
1% Increase in Trend Rates	236,017,874	446,384,162	970,469	7,977,474	1,362,144	2,119,624	694,831,748
<b>Deferred Outflows of Resources and Deferred Inflows of Resources recognized in OPEB Expense</b>							
<b>2024</b>	2,735,477	4,883,441	13,909	109,091	14,482	22,307	7,778,707
<b>2025</b>	843,582	1,505,983	4,289	33,642	4,466	6,879	2,398,841
<b>2026</b>	(7,572,207)	(13,518,092)	(38,502)	(301,980)	(40,087)	(61,748)	(21,532,616)
<b>2027</b>	(15,249,546)	(27,223,866)	(77,538)	(608,154)	(80,732)	(124,354)	(43,364,190)
<b>2028</b>	(9,509,443)	(16,976,492)	(48,352)	(379,238)	(50,343)	(77,546)	(27,041,414)
<b>Thereafter</b>	(288,133)	(514,381)	(1,465)	(11,491)	(1,525)	(2,350)	(819,345)

## 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.

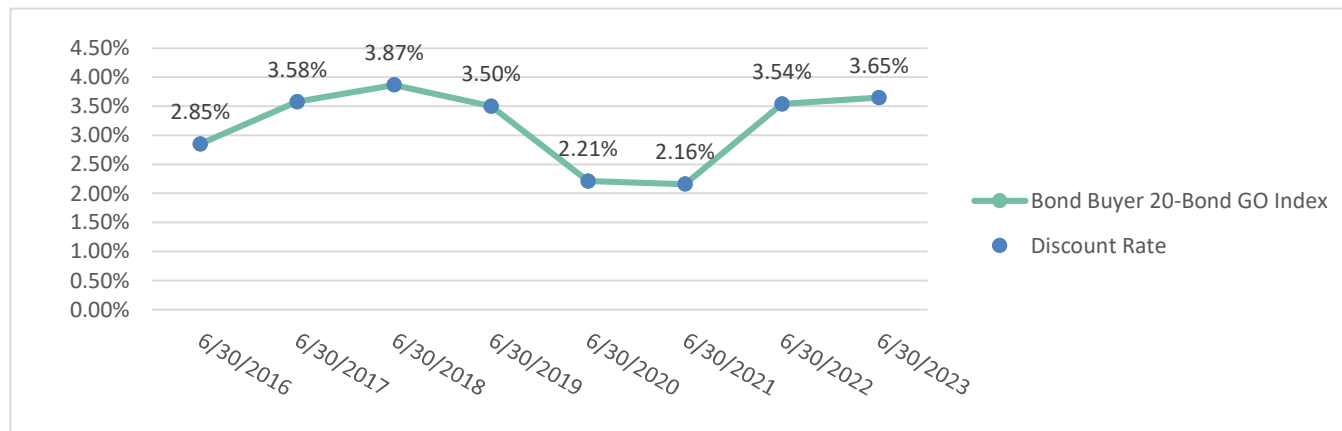
Projected cash flows into and out of the OPEB plan are assumed to be contributions to the OPEB plan, benefit payments, OPEB plan administrative expenses and OPEB plan investment earnings. These projected cash flows are used to project the OPEB plan's fiduciary net position at the beginning of each period. 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 3.65%, the rate that reflects a tax-exempt, high quality municipal bond rate. The municipal bond rate of 3.65% is 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 insufficient to make all projected benefit payments of current plan members. Therefore the 3.65% 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 3.65%.

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) * 13.33%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2023	128,790,794	-	128,790,794	17,636,873	1,171,619	-	18,808,492
2024	123,684,997	9,613,475	133,298,472	18,940,333	1,332,985	1,281,254	18,992,064
2025	119,220,965	18,742,954	137,963,919	20,207,784	1,379,639	2,498,002	19,089,421
2026	115,043,301	27,749,355	142,792,656	21,242,564	1,427,927	3,698,347	18,972,144
2027	111,225,875	36,564,524	147,790,399	22,664,990	1,477,904	4,873,205	19,269,689
2028	107,392,883	45,570,180	152,963,063	23,801,256	1,529,631	6,073,451	19,257,436
2029	103,570,516	54,746,254	158,316,770	24,723,461	1,583,168	7,296,409	19,010,220
2030	99,709,694	64,148,163	163,857,857	26,162,808	1,638,579	8,549,466	19,251,921
2031	95,526,106	74,066,776	169,592,882	27,562,619	1,695,929	9,871,388	19,387,160
2032	91,228,686	84,299,947	175,528,633	28,765,548	1,755,286	11,235,232	19,285,602
2033	86,851,865	94,820,270	181,672,135	30,031,507	1,816,721	12,637,348	19,210,880
2034	82,364,319	105,666,341	188,030,660	31,022,914	1,880,307	14,082,878	18,820,343
2035	78,324,851	116,286,882	194,611,733	31,947,805	1,946,117	15,498,351	18,395,571
2036	74,250,586	127,172,558	201,423,144	32,849,141	2,014,231	16,949,160	17,914,212
2037	70,314,533	138,158,421	208,472,954	33,856,706	2,084,730	18,413,321	17,528,115
2038	66,537,465	149,232,042	215,769,507	34,533,955	2,157,695	19,889,178	16,802,472
2039	62,756,944	160,564,496	223,321,440	35,450,083	2,233,214	21,399,532	16,283,765
2040	58,919,128	172,218,562	231,137,690	36,379,604	2,311,377	22,952,750	15,738,231
2041	55,236,224	183,991,285	239,227,509	36,804,095	2,392,275	24,521,781	14,674,589
2042	51,530,065	196,070,407	247,600,472	37,656,524	2,476,005	26,131,649	14,000,880
2043	47,936,117	208,330,372	256,266,489	38,491,787	2,562,665	27,765,618	13,288,834
2044	44,328,261	220,907,555	265,235,816	38,620,064	2,652,358	29,441,866	11,830,556
2045	41,025,220	233,493,850	274,519,070	39,176,643	2,745,191	31,119,328	10,802,506
2046	37,656,615	246,470,622	284,127,237	39,556,838	2,841,272	32,848,831	9,549,279
2047	34,552,512	259,519,178	294,071,690	39,539,422	2,940,717	34,587,902	7,892,237
2048	31,915,904	272,448,295	304,364,199	39,509,052	3,043,642	36,311,054	6,241,640
2049	29,097,266	285,919,680	315,016,946	39,603,135	3,150,169	38,106,478	4,646,826
2050	26,422,007	299,620,532	326,042,539	39,458,475	3,260,425	39,932,485	2,786,415
2051	23,859,887	313,594,141	337,454,028	39,016,000	3,374,540	41,794,843	595,697
2052	21,298,781	327,966,138	349,264,919	39,159,098	3,492,649	43,710,298	-
2053	18,631,874	342,857,317	361,489,191	38,962,933	3,614,892	45,694,948	-
2054	16,112,380	358,028,933	374,141,313	38,657,110	3,741,413	47,716,973	-

## 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) * 13.33%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2055	13,681,134	373,555,125	387,236,259	38,652,224	3,872,363	49,786,255	-
2056	11,542,787	389,246,741	400,789,528	38,508,657	4,007,895	51,877,585	-
2057	9,531,453	405,285,708	414,817,161	38,439,934	4,148,172	54,015,208	-
2058	7,683,718	421,652,044	429,335,762	38,327,614	4,293,358	56,196,462	-
2059	5,968,099	438,394,415	444,362,514	38,083,106	4,443,625	58,427,832	-
2060	4,381,830	455,533,372	459,915,202	37,603,372	4,599,152	60,712,059	-
2061	3,119,003	472,893,231	476,012,234	36,933,565	4,760,122	63,025,726	-
2062	2,119,871	490,552,791	492,672,662	35,683,647	4,926,727	65,379,337	-
2063	1,350,784	508,565,421	509,916,205	34,698,500	5,099,162	67,780,004	-
2064	896,525	526,866,747	527,763,272	34,012,694	5,277,633	70,219,147	-
2065	591,156	545,643,831	546,234,987	32,743,117	5,462,350	72,721,698	-
2066	337,506	565,015,706	565,353,212	32,303,411	5,653,532	75,303,521	-
2067	225,002	584,915,572	585,140,574	31,850,549	5,851,406	77,955,713	-
2068	130,827	605,489,667	605,620,494	31,316,420	6,056,205	80,697,763	-
2069	76,507	626,740,704	626,817,211	30,964,836	6,268,172	83,530,035	-
2070	35,733	648,720,080	648,755,813	30,516,457	6,487,558	86,459,377	-
2071	23,261	671,439,005	671,462,266	30,053,413	6,714,623	89,487,284	-
2072	18,144	694,945,301	694,963,445	29,463,455	6,949,634	92,620,130	-
2073	2,424	719,284,742	719,287,166	28,846,768	7,192,872	95,864,014	-
2074	1,708	744,460,509	744,462,217	28,134,894	7,444,622	99,219,361	-
2075	-	770,518,395	770,518,395	27,388,225	7,705,184	102,692,275	-
2076	-	797,486,539	797,486,539	26,560,066	7,974,865	106,286,504	-
2077	-	825,398,568	825,398,568	25,662,561	8,253,986	110,006,532	-
2078	-	854,287,518	854,287,518	24,718,288	8,542,875	113,856,760	-
2079	-	884,187,581	884,187,581	23,692,856	8,841,876	117,841,747	-
2080	-	915,134,146	915,134,146	22,666,847	9,151,341	121,966,208	-
2081	-	947,163,841	947,163,841	21,547,581	9,471,638	126,235,025	-
2082	-	980,314,575	980,314,575	20,429,487	9,803,146	130,653,251	-
2083	-	1,014,625,585	1,014,625,585	19,276,485	10,146,256	135,226,115	-
2084	-	1,050,137,480	1,050,137,480	18,067,273	10,501,375	139,959,029	-
2085	-	1,086,892,292	1,086,892,292	16,897,666	10,868,923	144,857,595	-
2086	-	1,124,933,522	1,124,933,522	15,664,015	11,249,335	149,927,611	-

## 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) * 13.33%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2087	-	1,164,306,195	1,164,306,195	14,459,321	11,643,062	155,175,077	-
2088	-	1,205,056,912	1,205,056,912	13,261,931	12,050,569	160,606,205	-
2089	-	1,247,233,904	1,247,233,904	12,056,028	12,472,339	166,227,422	-
2090	-	1,290,887,091	1,290,887,091	10,923,450	12,908,871	172,045,382	-
2091	-	1,336,068,139	1,336,068,139	9,775,898	13,360,681	178,066,970	-
2092	-	1,382,830,524	1,382,830,524	8,701,122	13,828,305	184,299,314	-
2093	-	1,431,229,592	1,431,229,592	7,660,599	14,312,296	190,749,790	-
2094	-	1,481,322,628	1,481,322,628	6,677,667	14,813,226	197,426,033	-
2095	-	1,533,168,920	1,533,168,920	5,762,194	15,331,689	204,335,944	-
2096	-	1,586,829,832	1,586,829,832	4,921,592	15,868,298	211,487,702	-
2097	-	1,642,368,876	1,642,368,876	4,162,349	16,423,689	218,889,772	-
2098	-	1,699,851,787	1,699,851,787	3,476,663	16,998,518	226,550,914	-
2099	-	1,759,346,600	1,759,346,600	2,873,141	17,593,466	234,480,196	-
2100	-	1,820,923,731	1,820,923,731	2,341,697	18,209,237	242,687,003	-
2101	-	1,884,656,062	1,884,656,062	1,882,439	18,846,561	251,181,048	-
2102	-	1,950,619,024	1,950,619,024	1,490,202	19,506,190	259,972,384	-
2103	-	2,018,890,690	2,018,890,690	1,161,101	20,188,907	269,071,418	-
2104	-	2,089,551,864	2,089,551,864	889,383	20,895,519	278,488,917	-
2105	-	2,162,686,179	2,162,686,179	669,069	21,626,862	288,236,029	-
2106	-	2,238,380,195	2,238,380,195	493,784	22,383,802	298,324,290	-
2107	-	2,316,723,502	2,316,723,502	357,032	23,167,235	308,765,641	-
2108	-	2,397,808,825	2,397,808,825	252,705	23,978,088	319,572,438	-
2109	-	2,481,732,134	2,481,732,134	174,913	24,817,321	330,757,473	-
2110	-	2,568,592,759	2,568,592,759	118,225	25,685,928	342,333,985	-
2111	-	2,658,493,506	2,658,493,506	77,938	26,584,935	354,315,675	-
2112	-	2,751,540,779	2,751,540,779	50,091	27,515,408	366,716,723	-
2113	-	2,847,844,706	2,847,844,706	31,350	28,478,447	379,551,809	-
2114	-	2,947,519,271	2,947,519,271	19,105	29,475,193	392,836,122	-
2115	-	3,050,682,445	3,050,682,445	11,336	30,506,824	406,585,386	-
2116	-	3,157,456,331	3,157,456,331	6,548	31,574,563	420,815,875	-
2117	-	3,267,967,303	3,267,967,303	3,692	32,679,673	435,544,430	-
2118	-	3,382,346,159	3,382,346,159	2,020	33,823,462	450,788,485	-

## 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) * 13.33%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2119	-	3,500,728,275	3,500,728,275	1,075	35,007,283	466,566,083	-
2120	-	3,623,253,765	3,623,253,765	556	36,232,538	482,895,895	-
2121	-	3,750,067,647	3,750,067,647	261	37,500,676	499,797,252	-
2122	-	3,881,320,015	3,881,320,015	127	38,813,200	517,290,156	-
2123	-	4,017,166,216	4,017,166,216	57	40,171,662	535,395,311	-
2124	-	4,157,767,034	4,157,767,034	20	41,577,670	554,134,147	-
2125	-	4,303,288,880	4,303,288,880	10	43,032,889	573,528,842	-
2126	-	4,453,903,991	4,453,903,991	3	44,539,040	593,602,352	-
2127	-	4,609,790,631	4,609,790,631	2	46,097,906	614,378,434	-
2128	-	4,771,133,303	4,771,133,303	-	47,711,333	635,881,679	-



## 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	8,587,208	18,808,492	17,636,873	-	1,060,996	10,819,823
2024	10,819,823	18,992,064	18,940,333	-	650,741	11,522,295
2025	11,522,295	19,089,421	20,207,784	-	657,787	11,061,719
2026	11,061,719	18,972,144	21,242,564	-	595,591	9,386,890
2027	9,386,890	19,269,689	22,664,990	-	461,354	6,452,943
2028	6,452,943	19,257,436	23,801,256	-	250,862	2,159,985
2029	2,159,985	19,010,220	24,723,461	-	-	-
2030	-	19,251,921	26,162,808	-	-	-
2031	-	19,387,160	27,562,619	-	-	-
2032	-	19,285,602	28,765,548	-	-	-
2033	-	19,210,880	30,031,507	-	-	-
2034	-	18,820,343	31,022,914	-	-	-
2035	-	18,395,571	31,947,805	-	-	-
2036	-	17,914,212	32,849,141	-	-	-
2037	-	17,528,115	33,856,706	-	-	-
2038	-	16,802,472	34,533,955	-	-	-
2039	-	16,283,765	35,450,083	-	-	-
2040	-	15,738,231	36,379,604	-	-	-
2041	-	14,674,589	36,804,095	-	-	-
2042	-	14,000,880	37,656,524	-	-	-
2043	-	13,288,834	38,491,787	-	-	-
2044	-	11,830,556	38,620,064	-	-	-
2045	-	10,802,506	39,176,643	-	-	-
2046	-	9,549,279	39,556,838	-	-	-
2047	-	7,892,237	39,539,422	-	-	-
2048	-	6,241,640	39,509,052	-	-	-
2049	-	4,646,826	39,603,135	-	-	-
2050	-	2,786,415	39,458,475	-	-	-
2051	-	595,697	39,016,000	-	-	-
2052	-	-	39,159,098	-	-	-
2053	-	-	38,962,933	-	-	-
2054	-	-	38,657,110	-	-	-
2055	-	-	38,652,224	-	-	-
2056	-	-	38,508,657	-	-	-

## 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	-	-	38,439,934	-	-	-
2058	-	-	38,327,614	-	-	-
2059	-	-	38,083,106	-	-	-
2060	-	-	37,603,372	-	-	-
2061	-	-	36,933,565	-	-	-
2062	-	-	35,683,647	-	-	-
2063	-	-	34,698,500	-	-	-
2064	-	-	34,012,694	-	-	-
2065	-	-	32,743,117	-	-	-
2066	-	-	32,303,411	-	-	-
2067	-	-	31,850,549	-	-	-
2068	-	-	31,316,420	-	-	-
2069	-	-	30,964,836	-	-	-
2070	-	-	30,516,457	-	-	-
2071	-	-	30,053,413	-	-	-
2072	-	-	29,463,455	-	-	-
2073	-	-	28,846,768	-	-	-
2074	-	-	28,134,894	-	-	-
2075	-	-	27,388,225	-	-	-
2076	-	-	26,560,066	-	-	-
2077	-	-	25,662,561	-	-	-
2078	-	-	24,718,288	-	-	-
2079	-	-	23,692,856	-	-	-
2080	-	-	22,666,847	-	-	-
2081	-	-	21,547,581	-	-	-
2082	-	-	20,429,487	-	-	-
2083	-	-	19,276,485	-	-	-
2084	-	-	18,067,273	-	-	-
2085	-	-	16,897,666	-	-	-
2086	-	-	15,664,015	-	-	-
2087	-	-	14,459,321	-	-	-
2088	-	-	13,261,931	-	-	-
2089	-	-	12,056,028	-	-	-
2090	-	-	10,923,450	-	-	-

## 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	-	-	9,775,898	-	-	-
2092	-	-	8,701,122	-	-	-
2093	-	-	7,660,599	-	-	-
2094	-	-	6,677,667	-	-	-
2095	-	-	5,762,194	-	-	-
2096	-	-	4,921,592	-	-	-
2097	-	-	4,162,349	-	-	-
2098	-	-	3,476,663	-	-	-
2099	-	-	2,873,141	-	-	-
2100	-	-	2,341,697	-	-	-
2101	-	-	1,882,439	-	-	-
2102	-	-	1,490,202	-	-	-
2103	-	-	1,161,101	-	-	-
2104	-	-	889,383	-	-	-
2105	-	-	669,069	-	-	-
2106	-	-	493,784	-	-	-
2107	-	-	357,032	-	-	-
2108	-	-	252,705	-	-	-
2109	-	-	174,913	-	-	-
2110	-	-	118,225	-	-	-
2111	-	-	77,938	-	-	-
2112	-	-	50,091	-	-	-
2113	-	-	31,350	-	-	-
2114	-	-	19,105	-	-	-
2115	-	-	11,336	-	-	-
2116	-	-	6,548	-	-	-
2117	-	-	3,692	-	-	-
2118	-	-	2,020	-	-	-
2119	-	-	1,075	-	-	-
2120	-	-	556	-	-	-
2121	-	-	261	-	-	-
2122	-	-	127	-	-	-
2123	-	-	57	-	-	-
2124	-	-	20	-	-	-

## 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	-	-	10	-	-	-
2126	-	-	3	-	-	-
2127	-	-	2	-	-	-
2128	-	-	-	-	-	-

## 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) = 3.65%
2024	10,819,823	18,940,333	-	18,940,333	-	18,603,855	18,603,855
2025	11,522,295	20,207,784	-	20,207,784	-	19,149,822	19,149,822
2026	11,061,719	21,242,564	-	21,242,564	-	19,421,540	19,421,540
2027	9,386,890	22,664,990	-	22,664,990	-	19,992,309	19,992,309
2028	6,452,943	23,801,256	-	23,801,256	-	20,255,268	20,255,268
2029	2,159,985	24,723,461	-	24,723,461	-	20,299,161	20,299,161
2030	-	26,162,808	-	26,162,808	-	20,724,490	20,724,490
2031	-	27,562,619	-	27,562,619	-	21,064,477	21,064,477
2032	-	28,765,548	-	28,765,548	-	21,209,652	21,209,652
2033	-	30,031,507	-	30,031,507	-	21,363,318	21,363,318
2034	-	31,022,914	-	31,022,914	-	21,291,432	21,291,432
2035	-	31,947,805	-	31,947,805	-	21,154,073	21,154,073
2036	-	32,849,141	-	32,849,141	-	20,984,938	20,984,938
2037	-	33,856,706	-	33,856,706	-	20,866,954	20,866,954
2038	-	34,533,955	-	34,533,955	-	20,534,842	20,534,842
2039	-	35,450,083	-	35,450,083	-	20,337,286	20,337,286
2040	-	36,379,604	-	36,379,604	-	20,135,592	20,135,592
2041	-	36,804,095	-	36,804,095	-	19,653,200	19,653,200
2042	-	37,656,524	-	37,656,524	-	19,400,283	19,400,283
2043	-	38,491,787	-	38,491,787	-	19,132,274	19,132,274
2044	-	38,620,064	-	38,620,064	-	18,520,052	18,520,052
2045	-	39,176,643	-	39,176,643	-	18,125,380	18,125,380
2046	-	39,556,838	-	39,556,838	-	17,656,807	17,656,807
2047	-	39,539,422	-	39,539,422	-	17,027,528	17,027,528
2048	-	39,509,052	-	39,509,052	-	16,415,292	16,415,292
2049	-	39,603,135	-	39,603,135	-	15,874,946	15,874,946
2050	-	39,458,475	-	39,458,475	-	15,259,970	15,259,970
2051	-	39,016,000	-	39,016,000	-	14,557,501	14,557,501
2052	-	39,159,098	-	39,159,098	-	14,096,375	14,096,375
2053	-	38,962,933	-	38,962,933	-	13,531,848	13,531,848
2054	-	38,657,110	-	38,657,110	-	12,952,856	12,952,856
2055	-	38,652,224	-	38,652,224	-	12,495,146	12,495,146

## 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) = 3.65%
2056	-	38,508,657	-	38,508,657	-	12,010,357	12,010,357
2057	-	38,439,934	-	38,439,934	-	11,566,737	11,566,737
2058	-	38,327,614	-	38,327,614	-	11,126,811	11,126,811
2059	-	38,083,106	-	38,083,106	-	10,666,501	10,666,501
2060	-	37,603,372	-	37,603,372	-	10,161,249	10,161,249
2061	-	36,933,565	-	36,933,565	-	9,628,802	9,628,802
2062	-	35,683,647	-	35,683,647	-	8,975,341	8,975,341
2063	-	34,698,500	-	34,698,500	-	8,420,213	8,420,213
2064	-	34,012,694	-	34,012,694	-	7,963,136	7,963,136
2065	-	32,743,117	-	32,743,117	-	7,395,947	7,395,947
2066	-	32,303,411	-	32,303,411	-	7,039,679	7,039,679
2067	-	31,850,549	-	31,850,549	-	6,696,565	6,696,565
2068	-	31,316,420	-	31,316,420	-	6,352,402	6,352,402
2069	-	30,964,836	-	30,964,836	-	6,059,898	6,059,898
2070	-	30,516,457	-	30,516,457	-	5,761,842	5,761,842
2071	-	30,053,413	-	30,053,413	-	5,474,592	5,474,592
2072	-	29,463,455	-	29,463,455	-	5,178,122	5,178,122
2073	-	28,846,768	-	28,846,768	-	4,891,212	4,891,212
2074	-	28,134,894	-	28,134,894	-	4,602,516	4,602,516
2075	-	27,388,225	-	27,388,225	-	4,322,596	4,322,596
2076	-	26,560,066	-	26,560,066	-	4,044,274	4,044,274
2077	-	25,662,561	-	25,662,561	-	3,770,007	3,770,007
2078	-	24,718,288	-	24,718,288	-	3,503,412	3,503,412
2079	-	23,692,856	-	23,692,856	-	3,239,820	3,239,820
2080	-	22,666,847	-	22,666,847	-	2,990,373	2,990,373
2081	-	21,547,581	-	21,547,581	-	2,742,606	2,742,606
2082	-	20,429,487	-	20,429,487	-	2,508,725	2,508,725
2083	-	19,276,485	-	19,276,485	-	2,283,779	2,283,779
2084	-	18,067,273	-	18,067,273	-	2,065,140	2,065,140
2085	-	16,897,666	-	16,897,666	-	1,863,436	1,863,436
2086	-	15,664,015	-	15,664,015	-	1,666,562	1,666,562
2087	-	14,459,321	-	14,459,321	-	1,484,215	1,484,215

## 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) = 3.65%
2088	-	13,261,931	-	13,261,931	-	1,313,368	1,313,368
2089	-	12,056,028	-	12,056,028	-	1,151,900	1,151,900
2090	-	10,923,450	-	10,923,450	-	1,006,934	1,006,934
2091	-	9,775,898	-	9,775,898	-	869,418	869,418
2092	-	8,701,122	-	8,701,122	-	746,582	746,582
2093	-	7,660,599	-	7,660,599	-	634,156	634,156
2094	-	6,677,667	-	6,677,667	-	533,321	533,321
2095	-	5,762,194	-	5,762,194	-	443,999	443,999
2096	-	4,921,592	-	4,921,592	-	365,873	365,873
2097	-	4,162,349	-	4,162,349	-	298,534	298,534
2098	-	3,476,663	-	3,476,663	-	240,574	240,574
2099	-	2,873,141	-	2,873,141	-	191,811	191,811
2100	-	2,341,697	-	2,341,697	-	150,827	150,827
2101	-	1,882,439	-	1,882,439	-	116,977	116,977
2102	-	1,490,202	-	1,490,202	-	89,342	89,342
2103	-	1,161,101	-	1,161,101	-	67,160	67,160
2104	-	889,383	-	889,383	-	49,632	49,632
2105	-	669,069	-	669,069	-	36,022	36,022
2106	-	493,784	-	493,784	-	25,649	25,649
2107	-	357,032	-	357,032	-	17,892	17,892
2108	-	252,705	-	252,705	-	12,218	12,218
2109	-	174,913	-	174,913	-	8,159	8,159
2110	-	118,225	-	118,225	-	5,321	5,321
2111	-	77,938	-	77,938	-	3,384	3,384
2112	-	50,091	-	50,091	-	2,098	2,098
2113	-	31,350	-	31,350	-	1,267	1,267
2114	-	19,105	-	19,105	-	745	745
2115	-	11,336	-	11,336	-	426	426
2116	-	6,548	-	6,548	-	238	238
2117	-	3,692	-	3,692	-	129	129
2118	-	2,020	-	2,020	-	68	68
2119	-	1,075	-	1,075	-	35	35

## 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) = 3.65%
2120	-	556	-	556	-	17	17
2121	-	261	-	261	-	8	8
2122	-	127	-	127	-	4	4
2123	-	57	-	57	-	2	2
2124	-	20	-	20	-	1	1
2125	-	10	-	10	-	-	-
2126	-	3	-	3	-	-	-
2127	-	2	-	2	-	-	-
2128	-	-	-	-	-	-	-



## 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
2018	-	5.67	-	-	-	-	-	-	-	-	-	-
2019	15,849,776	6.75	2,348,115	2,348,115	1,761,086	-	-	-	-	-	-	-
2020	-	6.75	-	-	-	-	-	-	-	-	-	-
2021	(52,938,875)	6.78	(7,808,094)	(7,808,094)	(7,808,094)	(7,808,094)	(6,090,311)	-	-	-	-	-
2022	-	6.78	-	-	-	-	-	-	-	-	-	-
2023	(25,800,860)	6.54	(3,945,086)	(3,945,086)	(3,945,086)	(3,945,086)	(3,945,086)	(3,945,086)	(2,130,344)	-	-	-
Net Increase (Decrease) in OPEB Expense			(9,405,065)	(9,405,065)	(9,992,094)	(11,753,180)	(10,035,397)	(3,945,086)	(2,130,344)	-	-	-

Year	Changes of Assumptions	Recognition Period (Years)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2018	(31,391,364)	5.67	(3,709,384)	-	-	-	-	-	-	-	-	-
2019	129,379,977	6.75	19,167,404	19,167,404	14,375,553	-	-	-	-	-	-	-
2020	216,350,799	6.75	32,051,970	32,051,970	32,051,970	24,038,979	-	-	-	-	-	-
2021	(25,487,904)	6.78	(3,759,278)	(3,759,278)	(3,759,278)	(3,759,278)	(2,932,236)	-	-	-	-	-
2022	(221,863,323)	6.78	(32,723,204)	(32,723,204)	(32,723,204)	(32,723,204)	(32,723,204)	(25,524,099)	-	-	-	-
2023	15,877,625	6.54	2,427,771	2,427,771	2,427,771	2,427,771	2,427,771	2,427,771	1,310,999	-	-	-
Net Increase (Decrease) in OPEB Expense			13,455,279	17,164,663	12,372,812	(10,015,732)	(33,227,669)	(23,096,328)	1,310,999	-	-	-

## 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
2018	(33,167)	5	-	-	-	-	-	-	-	-	-	-
2019	(76,529)	5	(15,305)	-	-	-	-	-	-	-	-	-
2020	4,927	5	986	986	-	-	-	-	-	-	-	-
2021	(1,090,857)	5	(218,171)	(218,172)	(218,172)	-	-	-	-	-	-	-
2022	1,687,100	5	337,420	337,420	337,420	337,420	-	-	-	-	-	-
2023	(505,623)	5	(101,125)	(101,125)	(101,125)	(101,124)	(101,124)	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			3,805	19,109	18,123	236,296	(101,124)	-	-	-	-	-