



# **TOWN OF OXFORD, MASSACHUSETTS**

**OTHER POSTEMPLOYMENT BENEFITS PROGRAM**

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

**Disclosures as of**  
**June 30, 2022**

KMS Actuarial, LLC  
52 Hunt Road  
Kingston, NH 03848

October, 2022





October 10, 2022

Ms. Jillian K. Patch  
Treasurer/Collector  
Town of Oxford  
325 Main Street  
Oxford, MA 01540

Dear Jillian:

We are pleased to present the enclosed report of the July 1, 2020 actuarial valuation of the retiree health care benefits for the Town of Oxford. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2022 under the following Governmental Accounting Standards Board (GASB) Statements:

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

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

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

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

Liabilities presented in this report are based on a discount rate of 3.64%, the rate that reflects a blended-rate of the long-term expected rate of return on OPEB plan assets and the municipal bond rate. The municipal bond rate of 3.54% is based on the Bond Buyer 20-Bond GO Index published on June 30, 2022. The long-term expected rate of return is 6.5%. The long-term expected rate of return is based on the target allocations provided in the investment policy statement and long-term expected rates of return by asset class provided by the Town's investment consultant, Bartholomew & Company.

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

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

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

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

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

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

Respectfully submitted,



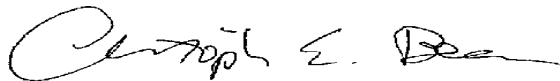
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Linda L. Bournival, FSA, EA  
Member, American Academy of Actuaries  
(603) 792-9494



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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 Oxford's retiree health care benefits as of July 1, 2020. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2022 under the following Governmental Accounting Standards Board (GASB) Statements:

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

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

### GASB Accounting Standards

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

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

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 Oxford Other Postemployment Benefits Program

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

### Summary of Principal Results

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

Disclosure Date	June 30, 2022	June 30, 2021	% Change
Valuation Date	July 1, 2020	July 1, 2020	
<b>Membership Data</b>			
Active Plan Members	383	327	17.1%
Inactive Plan Members (excludes covered spouses)	202	199	1.5%
Total Plan Members	585	526	11.2%
Covered Spouses	81	76	6.6%
Covered Payroll	\$23,785,211	\$20,991,040	13.3%
<b>Net OPEB Liability</b>			
Discount Rate	3.64%	2.21%	
Total OPEB Liability (TOL)	\$49,403,689	\$61,025,178	(19.0%)
Fiduciary Net Position (FNP)	\$4,915,919	\$5,666,289	(13.2%)
Net OPEB Liability	\$44,487,770	\$55,358,889	(19.6%)
FNP as % of TOL	10.0%	9.3%	7.5%
<b>OPEB Expense</b>			
OPEB Expense	\$1,986,944	\$4,617,254	(57.0%)
Deferred Outflows	\$13,986,785	\$17,090,193	
Deferred Inflows	\$27,734,423	\$19,254,212	
Recognition Period	7.01	7.01	

## EXECUTIVE SUMMARY

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### Experience Gain and Loss

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

### Changes of Assumptions

The discount rate changed from 2.21% as of June 30, 2021 to 3.64% as of June 30, 2022. In addition, the inflation rate was updated in this valuation. A summary of the impact on the Total OPEB Liability (TOL) of each assumption change is provided below:

◆ Decrease due to change in Inflation Assumption	(392,000)
◆ Decrease due to change in Discount Rate	(14,394,000)
Total	\$ (14,786,000)

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

### Changes of Benefit Terms

All benefit terms are the same as those used in the prior measurement. A Summary of the Principal Plan Provisions is provided in Section 5.

### Total OPEB Liability

The Total OPEB Liability as of the current measurement date, June 30, 2022, is \$49,403,689. The Total OPEB Liability as of the prior measurement date, June 30, 2021, was \$61,025,178. During the current measurement period ending June 30, 2022, the Total OPEB Liability decreased by \$11,621,489, or -19.0%. The development of the Total OPEB Liability for the current measurement period is shown in Section 1, Exhibit 1.2.

### Fiduciary Net Position

The Fiduciary Net Position is equal to the market value of assets and as of the current measurement date, June 30, 2022, is \$4,915,919. The Fiduciary Net Position as of the prior measurement date, June 30, 2021, was \$5,666,289. During the plan years ended June 30, 2022 and June 30, 2021, the actual rates of return were -14.16% and 26.96%, respectively. The expected long-term rate of return is 6.50%. The Fiduciary Net Position is shown in Section 1, Exhibit 1.1.

### Employer Future Period Contributions

Future contributions for fiscal years 2020 through 2050 are assumed to be made according to the funding schedule provided by the Town.



## EXECUTIVE SUMMARY

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### Discount Rate

As of the June 30, 2022 measurement date, the OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to the first 9 periods of projected future benefit payments and the 3.54% municipal bond rate was applied to all periods thereafter to determine the total OPEB liability. Projected benefit payments are discounted to their actuarial present value using a single discount rate of 3.64%.

### OPEB Expense

The OPEB Expense for the current measurement period ending June 30, 2022, is \$1,986,944. Benefit changes are recognized immediately and experience gains and losses and assumption changes developed in this valuation are recognized over 7.01 years. Investment gains and losses are recognized over 5 years. The OPEB Expense for the prior measurement period was \$4,617,254. The development of the OPEB expense for the current measurement period is shown in Section 4, Exhibit 4.2.

### COVID-19 Pandemic

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

## SECTION 1 - PRINCIPAL VALUATION RESULTS

### Exhibit 1.1 - OPEB Trust Assets

The Town has established an irrevocable trust pursuant to Section 20 of Chapter 32B of the Massachusetts General Laws for the purpose of accumulating assets to prefund the OPEB liabilities. Plan assets segregated and restricted in an OPEB trust must be dedicated to providing plan benefits to retirees and beneficiaries in accordance with the terms of the plan and must be legally protected from creditors of the employer. Further, employer contributions to the trust must be irrevocable. Asset information for the current and prior fiscal years was provided by the Town and is presented below:

Fiscal Year Ended June 30	2022	2021
<b>Trust Fund Composition at Fiscal Year-End</b>		
Domestic Equities	\$1,922,203	\$2,175,227
Domestic Bonds	1,095,315	1,307,108
Alternatives	723,339	690,174
International Equities	894,882	1,255,627
International Bonds	237,804	225,362
Cash and Equivalents	42,376	12,791
Total Market Value of Assets	\$4,915,919	\$5,666,289
<b>Asset Activity</b>		
Market value, beginning of year	\$5,666,289	\$4,408,406
Employer Premiums	1,214,444	1,121,084
OPEB Trust Contributions	60,000	55,915
Benefit Payments	(1,214,444)	(1,121,084)
Administrative Expenses	-	-
Investment Return	(810,370)	1,201,968
Market value, end of year	\$4,915,919	\$5,666,289
<b>Money-Weighted Rate of Return</b>	-14.16%	26.96%
<b>(Gain) / Loss on OPEB Plan Investments</b>		
Projected earnings	\$371,875	\$300,932
Actual earnings	(810,370)	1,201,968
(Gain) / Loss on OPEB plan investments	\$1,182,245	(\$901,036)

## SECTION 1 - PRINCIPAL VALUATION RESULTS

### Exhibit 1.2 - Total OPEB Liability

The Total OPEB Liability, developed using the Entry Age Normal funding method, is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service. The total OPEB liability as of the June 30, 2022 measurement date was developed from an actuarial valuation as of July 1, 2020 and rolled forward to the OPEB plan's fiscal year-end.

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

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

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

**Measurement Date** **June 30, 2022**

1. Total OPEB Liability, beginning of year:	
a. Actives	\$33,409,792
b. Retirees, Covered Spouses and Survivors	27,615,386
c. Total OPEB Liability at 2.21% (a. + b.)	\$61,025,178
2. Service Cost	\$2,977,376
3. Expected Benefit Payments	
a. Current retirees	(\$1,062,380)
b. Future retirees	(152,064)
c. Total (a. + b.)	(\$1,214,444)
4. Interest [2.21% x (1.c. + 2. + .5 x 3.c)]	\$1,401,037
5. Changes of benefit terms	\$0
6. Differences between expected and actual experience	\$0
7. Changes of assumptions or other inputs	(\$14,785,458)
8. Total OPEB Liability, end of year (1.c. + 2. + 3.c. + 4. + 5. + 6. + 7.)	
a. Actives	\$26,549,141
b. Retirees, Covered Spouses and Survivors	22,854,548
c. Total OPEB Liability at 3.64% (a. + b.)	\$49,403,689

## SECTION 1 - PRINCIPAL VALUATION RESULTS

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

Future contributions for fiscal years 2020 through 2050 are assumed to be made according to the funding schedule provided by the Town.

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

Fiscal Year Ending	June 30, 2022	June 30, 2023
<b>Discount Rate</b>	<b>2.21%</b>	<b>3.64%</b>
1. Normal Cost	\$2,977,376	\$1,988,505
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$61,025,178	\$49,403,689
b. Actuarial Value of Plan Assets	\$5,666,289	\$4,915,919
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$55,358,889	\$44,487,770
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$55,358,889	\$44,487,770
b. Amortization Period in years	30	30
c. Payroll Growth Rate	0.0%	0.0%
d. Amortization Factor	22.24	18.73
e. Amortization Amount (3.a. / 3.d.)	\$2,489,159	\$2,375,215
4. Interest on 1. and 3.e.	\$120,810	\$158,839
5. Actuarially Determined Employer Contribution (1. + 3.e. + 4.)	\$5,587,345	\$4,522,559
6. Actual Employer Contribution to OPEB Trust	\$60,000	TBD
7. Expected Benefit Payments	\$1,214,444	
8. Total Contribution (6. + 7.)	\$1,274,444	

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.1 - Plan Description

#### Plan Administration

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

#### Plan Membership

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

Inactive plan members or beneficiaries currently receiving benefit payments <sup>1</sup>	202
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	383
	<u>585</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

Future contributions for fiscal years 2020 through 2050 are assumed to be made according to the funding schedule provided by the Town.

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.2 - Net OPEB Liability

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

Total OPEB liability	\$ 49,403,689
Fiduciary net position	(4,915,919)
Net OPEB liability	\$ 44,487,770

Fiduciary net position as a percentage of the total OPEB liability 9.95%

#### Actuarial Assumptions

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

Inflation	2.4% per year, based on current economic data, analyses from economists and other experts, and professional judgment.
Discount rate	3.64 percent, net of investment expenses, including inflation.
Healthcare cost trend rate	7 percent for 2020, decreasing 0.4 percent per year to 5.4 percent, then grading down to an ultimate trend rate of 4 percent, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical inflation rate is reached in 2075.
Pre-Retirement Mortality - General and Public Safety employees	RP-2014 Blue Collar Employees Mortality Table, projected with generational mortality improvement using scale MP-2018.
Healthy Retiree Mortality - General and Public Safety employees	RP-2014 Blue Collar Healthy Annuitant Mortality Table, projected with generational mortality improvement using 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

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.2 - Net OPEB Liability

#### Actuarial Assumptions (continued)

Pre-Retirement Mortality - Teachers

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

Healthy Retiree Mortality - Teachers

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

Disabled Retiree Mortality - Teachers

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

#### Long-Term Expected Rate of Return

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

Asset Class	Target Allocation	Long-Term Expected Real Rates of Return <sup>1</sup>
Domestic Equities	34%	4.66%
Domestic Bonds	20%	1.30%
Alternatives	20%	5.28%
International Equities	22%	5.88%
International Bonds	4%	1.33%
Cash and Equivalents	0%	0.00%
Total	100%	

<sup>1</sup> provided by the Town's investment consultant, Bartholomew & Company.

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.2 - Net OPEB Liability

#### Discount Rate

The discount rate used to measure the total OPEB liability was 3.64%. 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 long-term expected rate of return on OPEB plan investments was applied to the first 9 periods of projected future benefit payments and the 3.54% municipal bond rate was applied to all periods thereafter to determine the total 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 3.64 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (2.64 percent) or 1-percentage point higher (4.64 percent) than the current rate:

	<b>1% Decrease (2.64%)</b>	<b>Assumed Discount Rate (3.64%)</b>	<b>1% Increase (4.64%)</b>
Total OPEB Liability	\$ 58,901,512	\$ 49,403,689	\$ 41,985,297
Fiduciary Net Position	(4,915,919)	(4,915,919)	(4,915,919)
Net OPEB Liability	\$ 53,985,593	\$ 44,487,770	\$ 37,069,378
% Change in Net OPEB Liability	21.3%		-16.7%

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

The following presents the net OPEB liability calculated using the current healthcare cost trend rates as well as what the net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage point lower (6% year 1 decreasing to 3%) or 1-percentage point higher (8% year 1 decreasing to 5%) than the current healthcare cost trend rates:

	<b>1% Decrease 6% Year 1 Decreasing to 3%</b>	<b>Assumed Healthcare Cost Trend Rates 7% Year 1 Decreasing to 4%</b>	<b>1% Increase 8% Year 1 Decreasing to 5%</b>
Total OPEB Liability	\$ 40,624,156	\$ 49,403,689	\$ 61,041,895
Fiduciary Net Position	(4,915,919)	(4,915,919)	(4,915,919)
Net OPEB Liability	\$ 35,708,237	\$ 44,487,770	\$ 56,125,976
% Change in Net OPEB Liability	-19.7%		26.2%



## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30	2022	2021	2020	2019	2018
<b>Total OPEB Liability</b>					
Service cost	\$ 2,977,376	\$ 3,373,867	\$ 2,302,197	\$ 2,002,998	\$ 2,102,507
Interest	1,401,037	1,691,167	2,030,947	2,020,189	1,865,002
Changes of benefit terms	-	-	(1,414,740)	-	(20,706)
Differences between expected and actual experience	-	(14,613,935)	-	(7,382,205)	-
Changes of assumptions	(14,785,458)	(990,020)	15,841,429	9,827,250	(2,545,072)
Benefit payments	(1,214,444)	(1,121,084)	(1,323,440)	(1,241,476)	(1,309,320)
<b>Net change in total OPEB liability</b>	<b>\$ (11,621,489)</b>	<b>\$ (11,660,005)</b>	<b>\$ 17,436,393</b>	<b>\$ 5,226,756</b>	<b>\$ 92,411</b>
<b>Total OPEB liability—beginning</b>	<b>\$ 61,025,178</b>	<b>\$ 72,685,183</b>	<b>\$ 55,248,790</b>	<b>\$ 50,022,034</b>	<b>\$ 49,929,623</b>
<b>Total OPEB liability—ending (a)</b>	<b>\$ 49,403,689</b>	<b>\$ 61,025,178</b>	<b>\$ 72,685,183</b>	<b>\$ 55,248,790</b>	<b>\$ 50,022,034</b>
<b>Plan Fiduciary Net Position</b>					
Contributions—employer	\$ 1,274,444	\$ 1,176,999	\$ 1,373,440	\$ 1,291,476	\$ 1,374,320
Net investment income	(810,370)	1,201,968	117,496	245,915	181,990
Benefit payments	(1,214,444)	(1,121,084)	(1,323,440)	(1,241,476)	(1,309,320)
Administrative expenses	-	-	-	-	-
Other	-	-	-	-	-
<b>Net change in plan fiduciary net position</b>	<b>\$ (750,370)</b>	<b>\$ 1,257,883</b>	<b>\$ 167,496</b>	<b>\$ 295,915</b>	<b>\$ 246,990</b>
<b>Plan fiduciary net position—beginning</b>	<b>\$ 5,666,289</b>	<b>\$ 4,408,406</b>	<b>\$ 4,240,910</b>	<b>\$ 3,944,995</b>	<b>\$ 3,698,005</b>
<b>Plan fiduciary net position—ending (b)</b>	<b>\$ 4,915,919</b>	<b>\$ 5,666,289</b>	<b>\$ 4,408,406</b>	<b>\$ 4,240,910</b>	<b>\$ 3,944,995</b>
<b>Net OPEB liability—ending (a) – (b)</b>	<b>\$ 44,487,770</b>	<b>\$ 55,358,889</b>	<b>\$ 68,276,777</b>	<b>\$ 51,007,880</b>	<b>\$ 46,077,039</b>
Plan fiduciary net position as a percentage of the total OPEB liability	9.95%	9.29%	6.07%	7.68%	7.89%
Covered payroll	\$ 23,785,211	\$ 20,991,040	\$ 21,580,097	\$ 20,730,793	\$ 22,414,238
Net OPEB liability as a percentage of covered payroll	187.04%	263.73%	316.39%	246.05%	205.57%
<b>Discount Rate</b>	<b>3.64%</b>	<b>2.21%</b>	<b>2.24%</b>	<b>3.57%</b>	<b>3.93%</b>

## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30

2017

Total OPEB Liability					
Service cost	\$ 2,506,859				
Interest	1,615,467				
Changes of benefit terms	-				
Differences between expected and actual experience	-				
Changes of assumptions	(6,602,086)				
Benefit payments	(1,196,195)				
<b>Net change in total OPEB liability</b>	<b>\$ (3,675,955)</b>				
<b>Total OPEB liability—beginning</b>	<b>\$ 53,605,578</b>				
<b>Total OPEB liability—ending (a)</b>	<b>\$ 49,929,623</b>				
Plan Fiduciary Net Position					
Contributions—employer	\$ 1,248,695				
Net investment income	194,711				
Benefit payments	(1,196,195)				
Administrative expenses	-				
Other	-				
<b>Net change in plan fiduciary net position</b>	<b>\$ 247,211</b>				
<b>Plan fiduciary net position—beginning</b>	<b>\$ 3,450,794</b>				
<b>Plan fiduciary net position—ending (b)</b>	<b>\$ 3,698,005</b>				
<b>Net OPEB liability—ending (a) – (b)</b>	<b>\$ 46,231,618</b>				
Plan fiduciary net position as a percentage of the total OPEB liability	7.41%				
Covered payroll	\$ 22,036,578				
Net OPEB liability as a percentage of covered payroll	209.79%				
<b>Discount rate</b>	<b>3.63%</b>				

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

## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

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### Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

#### Changes of Benefit Terms

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

#### Changes of Assumptions

The discount rate changed from 2.21% as of June 30, 2021 to 3.64% as of June 30, 2022. In addition, the inflation rate was updated in this valuation.

## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.2 - Investment Returns

Fiscal Year Ended June 30	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Annual money-weighted rate of return, net of investment expenses	-14.16%	26.96%	2.75%	6.19%	4.91%	5.63%				

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

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

## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.2 - Investment Returns

#### Calculation of Money-Weighted Rate of Return

	Plan Investments/ Net External Cash Flows (a)	Periods Invested (b)	Period Weight (c)=(b)÷12	(d)=(a) x (1+r <sub>mw</sub> ) <sup>(c)</sup>
Beginning value - July 1, 2021	\$ 5,666,289	12	1.00	\$ 4,863,758
Monthly net external cash flows:				
July	60,000	11	0.92	52,162
August	-	10	0.83	-
September	-	9	0.75	-
October	-	8	0.67	-
November	-	7	0.58	-
December	-	6	0.50	-
January	-	5	0.42	-
February	-	4	0.33	-
March	-	3	0.25	-
April	-	2	0.17	-
May	-	1	0.08	-
June	-	0	0.00	-
Ending value - June 30, 2022				\$ 4,915,919
Money-weighted rate of return:				-14.16%

## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	2022	2021	2020	2019	2018
Actuarially determined contribution	\$ 5,587,345	\$ 6,599,540	\$ 5,182,525	\$ 4,723,076	\$ 4,734,018
Contributions in relation to the actuarially determined contribution	<u>1,274,444</u>	<u>1,176,999</u>	<u>1,373,440</u>	<u>1,291,476</u>	<u>1,374,320</u>
Contribution deficiency (excess)	<u>\$ 4,312,901</u>	<u>\$ 5,422,541</u>	<u>\$ 3,809,085</u>	<u>\$ 3,431,600</u>	<u>\$ 3,359,698</u>
Covered payroll	\$ 23,785,211	\$ 20,991,040	\$ 21,580,097	\$ 20,730,793	\$22,414,238
Contributions as a percentage of covered payroll	5.36%	5.61%	6.36%	6.23%	6.13%
Discount rate	2.21%	2.24%	3.57%	3.93%	3.63%
Inflation	2.40%	2.20%	2.40%	2.60%	2.60%

## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30

2017

Actuarially determined contribution \$ 4,269,222

Contributions in relation to the  
actuarially determined contribution 1,248,695

Contribution deficiency (excess) \$ 3,020,527

Covered payroll \$ 22,036,578

Contributions as a percentage of  
covered payroll 5.67%

Discount rate 4.00%

Inflation 2.60%

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

#### Notes to Schedule

#### Valuation date

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

#### Methods and assumptions as of current measurement date

Actuarial cost method Entry Age Normal

Amortization method Level dollar amount over 30 years on an open amortization period

Amortization period 30 years

Asset valuation method Market value

Healthcare cost trend rates 7 percent for 2020, decreasing 0.4 percent per year to 5.4 percent, then grading down to an ultimate trend rate of 4 percent, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical inflation rate is reached in 2075.

## SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

### Exhibit 4.1 - Deferred Outflows and Deferred Inflows of Resources

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

					Balances at June 30, 2022
	Experience Losses	Experience Gains	Amounts Recognized in OPEB Expense through June 30, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2018	\$ -	\$ -	\$ -	\$ -	\$ -
2019	-	7,382,205	(4,141,488)	-	3,240,717
2020	-	-	-	-	-
2021	-	14,613,935	(4,169,454)	-	10,444,481
2022	-	-	-	-	-
Total				<u>\$ -</u>	<u>\$ 13,685,198</u>

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

					Balances at June 30, 2022
	Increases in the Total OPEB Liability	Decreases in the Total OPEB Liability	Amounts Recognized in OPEB Expense through June 30, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)
2018	\$ -	\$ 2,545,072	\$ (1,879,670)	\$ -	\$ 665,402
2019	9,827,250	-	5,513,184	4,314,066	-
2020	15,841,429	-	6,665,397	9,176,032	-
2021	-	990,020	(282,460)	-	707,560
2022	-	14,785,458	(2,109,195)	-	12,676,263
Total				<u>\$ 13,490,098</u>	<u>\$ 14,049,225</u>



## SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

### Exhibit 4.1 - Deferred Outflows and Deferred Inflows of Resources

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

					Balances at June 30, 2022	
	Investment Earnings Less Than Projected	Investment Earnings Greater Than Projected	Amounts Recognized in OPEB Expense through June 30, 2022	Deferred Outflows of Resources	Deferred Inflows of Resources	
Year	(a)	(b)	(c)	(a) - (c)	(b) + (c)	
2018	\$ 97,798	\$ -	\$ 97,798	\$ -	\$ -	
2019	52,114	-	41,692	10,422	-	
2020	202,726	-	121,635	81,091	-	
2021	-	901,036	(360,414)	-	540,622	
2022	1,182,245	-	236,449	945,796	-	
Subtotal				\$ 1,037,309	\$ 540,622	
Net				\$ 496,687	\$ -	

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

#### Year ended June 30

2023	\$	(2,039,154)
2024	\$	(1,963,109)
2025	\$	(1,714,188)
2026	\$	(1,832,327)
2027	\$	(4,046,316)
Thereafter		(2,152,544)
<b>Deferred Outflows</b>	<b>\$</b>	<b>13,986,785</b>
<b>Deferred Inflows</b>	<b>\$</b>	<b>27,734,423</b>

## SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

### Exhibit 4.2 - OPEB Expense

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

#### Fiscal Year Ended June 30, 2022

Measurement Date	6/30/2022
1. Service cost	\$ 2,977,376
2. Interest on the total OPEB liability	
a. Total OPEB liability, beginning of year	61,025,178
b. Service cost, beginning of year	2,977,376
c. Benefit payments	(1,214,444)
d. Interest on total OPEB liability = 2.21% times (a. + b. + .5 times c.)	1,401,037
3. Differences between expected and actual experience	(3,120,099)
4. Changes of benefit terms	-
5. Changes of assumptions	973,736
6. Projected earnings on OPEB plan investments	
a. Plan fiduciary net position, beginning of year	5,666,289
b. Contributions - Employer	1,274,444
c. Benefit payments	(1,214,444)
d. Administrative expenses and other	-
e. Total projected earnings	(371,875)
7. Differences between projected and actual earnings on OPEB plan investments	126,769
8. OPEB plan administrative expenses	-
9. Other changes in fiduciary net position	-
10. Total OPEB Expense	\$ 1,986,944

## SECTION 5 - SUMMARY OF PLAN PROVISIONS

**Eligibility for Postemployment Benefits** Employees of the Town and their dependents are eligible for postemployment medical and life insurance based on the eligibility requirements under the Worcester Regional 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, 2021</b>	<b>Individual</b>	<b>Family</b>
Fallon Direct	\$689.21	\$1,791.88
Fallon Select	\$765.75	\$1,990.94
Fallon PPO	\$1,288.31	\$3,349.61
<b>Medicare Plans - January 1, 2021</b>		
Medex2	\$341.38	
Managed Blue	\$325.85	
Fallon Senior Care	\$313.00	
Tufts Medicare Preferred	\$339.00	
Tufts Medicare Complement	\$684.00	

**Participant Contributions** Retired employees contribute 50% of the health plan premium.

## 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.

**Dental Coverage** Dental coverage is not offered to retirees.

**Life Insurance Coverage** Retirees are eligible for a \$1,000 life insurance benefit. The total monthly cost is \$.74. Retirees contribute \$.37 towards the monthly premiums.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

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<b>Valuation Date</b>	July 1, 2020
<b>Disclosure Date</b>	June 30, 2022
<b>GASB 75 Reporting Date</b>	June 30, 2022
<b>Long-Term Expected Rate of Return</b>	<p>6.5%, compounded annually, net of fees.</p> <p>A long-term assumption based on capital market expectations by asset class, historical returns and professional judgment. A building block approach was used that considered the target asset allocation, expected returns by asset class and risk analysis to determine a long-term expected average annual rate of return.</p>
<b>Municipal Bond Rate</b>	3.54%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2022.
<b>Discount Rate (GASB)</b>	<p>3.64%, compounded annually, for the measurement as of June 30, 2022.</p> <p>2.21%, compounded annually, for the measurement as of June 30, 2021.</p> <p>The single rate that reflects the long-term expected rate of return on OPEB plan investments to the extent that the OPEB plan's assets, which are expected to be invested using a strategy to achieve that return, are sufficient to pay benefits, and a tax-exempt, high-quality municipal bond rate to the extent that the conditions for use of the long-term expected rate of return are not met.</p>
<b>Discount Rate (ADEC)</b>	2.21%, compounded annually, for development of the Actuarially Determined Contribution (ADEC) as of June 30, 2022.
<b>Amortization Method</b>	Level dollar amount over 30 years on an open amortization period for partial pre-funding.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

### Medical Trend Rates

Year	Trend
1	7.00%
2	6.60%
3	6.20%
4	5.80%
5	5.40%
Ultimate	4.00%

Trend rates after year 5 grade down to the ultimate rate of 4 percent utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate trend rate is reached in 2075.

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

### Dental Trend Rates

Dental coverage is not offered to retirees.

### Inflation

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

### Payroll Growth

3.5% per year.

### Participation Rates

Medical - 75% of eligible retired employees will elect to participate.

Dental - Not offered to retired employees.

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

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

### Dependent Status

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

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

For current retirees, the actual census information is used.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

### Medical Per Capita Costs

The following annual per capita costs are for the fiscal year beginning July 1, 2020 and are applicable to retirees, survivors and spouses. Annual costs for current and future retirees are based on the blended curves shown below, developed using the plan coverages elected by current retirees and survivors and premium rates currently in effect. Future years' costs are based on the first year cost adjusted with trend.

Age	Medicare-Eligible		Medicare-Ineligible	
	Male	Female	Male	Female
Under 20	\$3,113	\$3,655	\$3,113	\$3,655
20-24	2,453	3,891	2,453	3,891
25-29	2,553	5,740	2,553	5,740
30-34	3,206	7,253	3,206	7,253
35-39	4,022	7,471	4,022	7,471
40-44	5,012	7,652	5,012	7,652
45-49	6,326	8,399	6,326	8,399
50-54	8,337	9,881	8,337	9,881
55-59	10,833	11,425	10,833	11,425
60-64	13,903	13,598	13,903	13,598
65-69	3,324	3,237	17,346	16,300
70-74	3,983	3,818	20,783	19,220
75-79	4,703	4,430	24,541	22,300
80-84	5,406	5,081	28,208	25,576
85-89	6,023	5,680	31,423	28,590
90-94	6,556	6,062	34,208	30,512
95+	6,968	5,862	36,358	29,507

### Retiree Contributions

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

Plan	Contribution
Non-Medicare	\$ 4,748
Medicare	2,004

### Actuarial Cost Method

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

### Employee Data

Employee and retiree data were compiled and submitted by the Town as of June 30, 2021. We made reasonable adjustments for missing or invalid data.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

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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 with generational mortality improvement using scale MP-2018.

#### Healthy Retiree Mortality

Post-retirement mortality rates for General and Public Safety employees are based on the RP-2014 Blue Collar Healthy Annuitant Mortality Table, projected with generational mortality improvement using scale MP-2018.

#### Disabled Retiree Mortality - General and Public Safety

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 using Scale MP-2020.

#### Healthy Retiree Mortality

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

#### Disabled Retiree Mortality - Teachers

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

#### Turnover Rates

Turnover rates for Teachers are as follows:

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, 2020

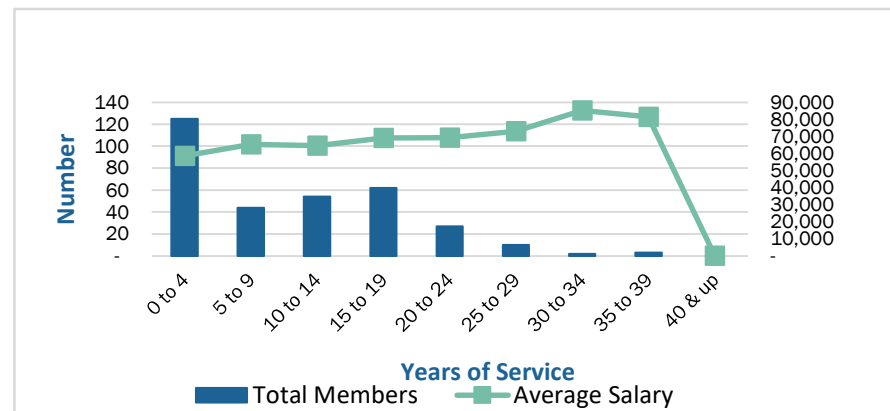
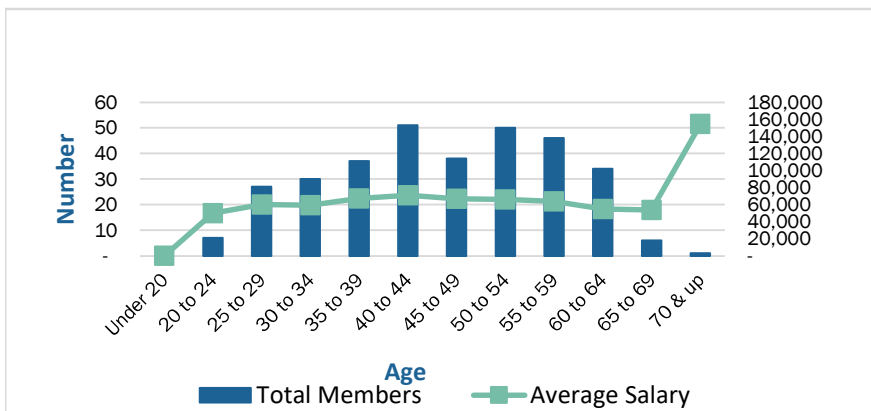
Age	Years of Service									Total	Total Salary	Average Salary
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up			
Under 20	-	-	-	-	-	-	-	-	-	-	-	-
20 to 24	6	1	-	-	-	-	-	-	-	7	349,253	49,893
25 to 29	24	3	-	-	-	-	-	-	-	27	1,622,288	60,085
30 to 34	16	10	4	-	-	-	-	-	-	30	1,781,785	59,393
35 to 39	17	7	7	4	2	-	-	-	-	37	2,493,778	67,399
40 to 44	20	5	7	16	3	-	-	-	-	51	3,614,492	70,872
45 to 49	12	4	7	11	4	-	-	-	-	38	2,540,878	66,865
50 to 54	15	7	13	8	3	4	-	-	-	50	3,301,469	66,029
55 to 59	6	5	8	14	6	3	2	2	-	46	2,939,211	63,896
60 to 64	5	2	6	9	9	2	-	1	-	34	1,869,837	54,995
65 to 69	3	-	2	-	-	1	-	-	-	6	323,449	53,908
70 & up	1	-	-	-	-	-	-	-	-	1	154,598	154,598
Total	125	44	54	62	27	10	2	3	-	327	20,991,040	64,193
Total Salary	7,323,192	2,876,760	3,487,696	4,287,025	1,870,843	730,492	170,494	244,540	-			
Average Salary	58,586	65,381	64,587	69,146	69,290	73,049	85,247	81,513	-			

Average Age:

46.1

Average Service:

10.3



## SECTION 7 - PLAN MEMBER INFORMATION

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

Age	Non-Medicare Plans			Medicare Plans					Total
	Fallon Direct	Fallon Select	Fallon PPO	Medex2	Managed Blue	Fallon Senior Care	Tufts Medicare Preferred	Tufts Medicare Complement	
Under 40	0	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0	0
50 to 54	0	0	0	0	0	0	0	0	0
55 to 59	0	8	0	0	0	0	0	0	8
60 to 64	2	11	0	7	0	1	0	0	21
65 to 69	1	1	1	38	1	2	1	0	45
70 to 74	0	10	2	41	1	0	6	2	62
75 to 79	1	2	1	26	3	2	0	1	36
80 to 84	0	2	0	11	2	0	0	0	15
85 to 89	0	0	0	4	2	0	0	0	6
90+	1	0	0	3	1	0	0	0	5
Total	5	34	4	130	10	5	7	3	198
Covered Spouses	1	4	0	60	4	2	4	1	76

Average Age: 72.2

In addition, there is 1 retiree that is not covered under any medical plan but is covered under a life insurance plan which the Town contributes to.

## SECTION 8 - GLOSSARY OF TERMS

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**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	Total
<b>Summary of Member Data Used in Valuation</b>			
Active Members	100	227	327
Average Age	45.3	46.4	46.1
Average Service	9.5	10.7	10.3
Covered Payroll	7,070,777	13,920,263	20,991,040
Retired Members and Survivors	58	141	199
Average Age	70.5	72.9	72.2
Covered Spouses	15	61	76
Expected Benefit Payments	300,016	914,428	1,214,444
OPEB Trust contributions	15,948	44,052	60,000
Total Employer Contributions	315,964	958,480	1,274,444
<b>Beginning Net OPEB Liability - June 30, 2021</b>			
Total OPEB Liability	16,073,130	44,952,048	61,025,178
Fiduciary Net Position	1,465,034	4,201,255	5,666,289
Net OPEB Liability	14,608,096	40,750,793	55,358,889
Total OPEB Liability, beginning of year	16,073,130	44,952,048	61,025,178
Service cost	1,203,971	1,773,405	2,977,376
Interest	378,508	1,022,529	1,401,037
Changes of benefit terms	0	0	0
Differences between expected and actual experience	0	0	0
Changes of assumptions	(4,224,202)	(10,561,256)	(14,785,458)
Benefit payments	(300,016)	(914,428)	(1,214,444)
Net change in total OPEB liability	(2,941,739)	(8,679,750)	(11,621,489)
Total OPEB Liability, end of year	13,131,391	36,272,298	49,403,689
<b>Ending Net OPEB Liability - June 30, 2022</b>			
Total OPEB Liability	13,131,391	36,272,298	49,403,689
Fiduciary Net Position	1,306,640	3,609,279	4,915,919
Net OPEB Liability	11,824,751	32,663,019	44,487,770

## SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	Town	School	Total
<b>Total Deferred Outflows of Resources</b>			
Differences between Expected and Actual Experience	0	0	0
Changes in Assumptions	3,553,092	9,937,006	13,490,098
Differences between Expected and Actual Earnings on OPEB Plan Investments	128,420	368,267	496,687
<b>Total Deferred Outflows of Resources</b>	<b>3,681,512</b>	<b>10,305,273</b>	<b>13,986,785</b>
<b>Total Deferred Inflows of Resources</b>			
Differences between Expected and Actual Experience	3,604,479	10,080,719	13,685,198
Changes in Assumptions	3,700,358	10,348,867	14,049,225
Differences between Expected and Actual Earnings on OPEB Plan Investments	0	0	0
<b>Total Deferred Inflows of Resources</b>	<b>7,304,837</b>	<b>20,429,586</b>	<b>27,734,423</b>
<b>Total OPEB Expense</b>	<b>563,746</b>	<b>1,423,198</b>	<b>1,986,944</b>
<b>Sensitivity of the Net OPEB Liability to Changes in the Discount Rate</b>			
Current Discount Rate: 3.64%	11,824,751	32,663,019	44,487,770
1% Decrease in the Discount Rate: 2.64%	14,349,251	39,636,342	53,985,593
1% Increase in the Discount Rate: 4.64%	9,852,959	27,216,419	37,069,378
<b>Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates</b>			
Current Trend Rates	11,824,751	32,663,019	44,487,770
1% Decrease in Trend Rates	9,491,171	26,217,066	35,708,237
1% Increase in Trend Rates	14,918,160	41,207,816	56,125,976
<b>Deferred Outflows of Resources and Deferred Inflows of Resources recognized in OPEB Expense</b>			
2023	(537,439)	(1,501,715)	(2,039,154)
2024	(517,397)	(1,445,712)	(1,963,109)
2025	(451,791)	(1,262,397)	(1,714,188)
2026	(482,928)	(1,349,399)	(1,832,327)
2027	(1,066,446)	(2,979,870)	(4,046,316)
Thereafter	(567,324)	(1,585,220)	(2,152,544)

## 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.

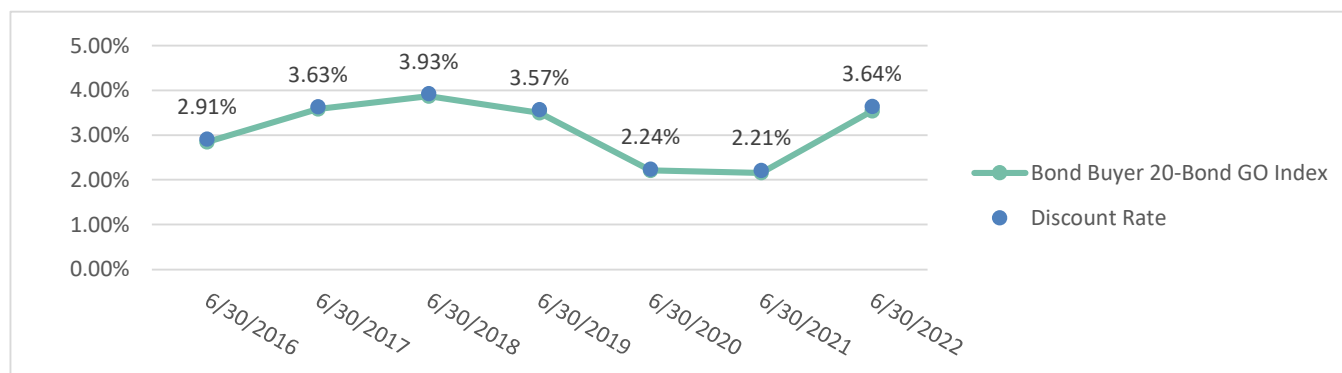
Projected cash flows into and out of the OPEB plan are assumed to be contributions to the OPEB plan, benefit payments, OPEB plan administrative expenses and OPEB plan investment earnings. These projected cash flows are used to project the OPEB plan's fiduciary net position at the beginning of each period. 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 3.64%, a long-term investment return rate of 6.5% and a municipal bond rate of 3.54%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2022. The OPEB plan's fiduciary net position was projected to be insufficient to make all projected benefit payments of current plan members. Therefore, the long-term expected rate of return on OPEB plan investments was applied to the first 9 periods of projected future benefit payments and the 3.54% municipal bond rate was applied to all periods thereafter to determine the total OPEB liability. Projected benefit payments are discounted to their actuarial present value using a single discount rate of 3.64%.

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) * 9.15%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2022	20,293,744	-	20,293,744	1,214,445	60,000	-	1,274,445
2023	19,358,986	1,645,039	21,004,025	1,328,605	65,000	150,474	1,243,131
2024	18,502,448	3,236,718	21,739,166	1,430,112	70,000	296,066	1,204,046
2025	17,775,068	4,724,969	22,500,037	1,521,718	75,000	432,198	1,164,520
2026	17,072,564	6,214,974	23,287,538	1,644,050	80,000	568,490	1,155,560
2027	16,410,096	7,692,506	24,102,602	1,694,904	85,000	703,642	1,076,262
2028	15,746,477	9,199,716	24,946,193	1,827,572	90,000	841,508	1,076,064
2029	15,003,593	10,815,717	25,819,310	1,931,070	95,000	989,325	1,036,745
2030	14,312,694	12,410,292	26,722,986	2,074,506	100,000	1,135,183	1,039,323
2031	13,518,393	14,139,898	27,658,291	2,189,959	105,000	1,293,392	1,001,567
2032	12,842,845	15,783,486	28,626,331	2,360,623	110,000	1,443,733	1,026,890
2033	12,154,058	17,474,195	29,628,253	2,466,810	115,000	1,598,384	983,426
2034	11,518,930	19,146,312	30,665,242	2,589,307	120,000	1,751,334	957,973
2035	10,827,508	20,911,017	31,738,525	2,689,437	125,000	1,912,754	901,683
2036	10,065,595	22,783,778	32,849,373	2,798,350	130,000	2,084,057	844,293
2037	9,295,791	24,703,310	33,999,101	2,906,527	135,000	2,259,639	781,888
2038	8,571,871	26,617,199	35,189,070	2,963,331	140,000	2,434,704	668,627
2039	7,924,205	28,496,482	36,420,687	3,044,578	145,000	2,606,604	582,974
2040	7,352,115	30,343,296	37,695,411	3,152,562	150,000	2,775,535	527,027
2041	6,757,011	32,257,739	39,014,750	3,192,327	155,000	2,950,651	396,676
2042	6,177,595	34,202,671	40,380,266	3,218,406	160,000	3,128,556	249,850
2043	5,685,472	36,108,103	41,793,575	3,278,221	165,000	3,302,848	140,373
2044	5,220,520	38,035,830	43,256,350	3,272,136	170,000	3,479,179	-
2045	4,777,906	39,992,416	44,770,322	3,282,264	175,000	3,658,150	-
2046	4,380,028	41,957,255	46,337,283	3,314,042	180,000	3,837,876	-
2047	3,925,931	44,033,157	47,959,088	3,378,684	185,000	4,027,761	-
2048	3,531,999	46,105,657	49,637,656	3,429,316	190,000	4,217,335	-
2049	3,159,022	48,215,952	51,374,974	3,378,786	195,000	4,410,366	-
2050	2,788,641	50,384,457	53,173,098	3,381,932	200,000	4,608,721	-
2051	2,444,844	52,589,312	55,034,156	3,399,602	-	4,810,402	-
2052	2,118,108	54,842,243	56,960,351	3,406,670	-	5,016,480	-
2053	1,808,052	57,145,911	58,953,963	3,420,989	-	5,227,199	-

## 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) * 9.15%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2054	1,529,010	59,488,342	61,017,352	3,452,753	-	5,441,464	-
2055	1,214,025	61,938,934	63,152,959	3,516,505	-	5,665,622	-
2056	967,053	64,396,260	65,363,313	3,572,176	-	5,890,396	-
2057	739,863	66,911,166	67,651,029	3,476,221	-	6,120,438	-
2058	551,341	69,467,474	70,018,815	3,481,269	-	6,354,266	-
2059	413,586	72,055,888	72,469,474	3,493,569	-	6,591,031	-
2060	289,990	74,715,916	75,005,906	3,431,847	-	6,834,347	-
2061	207,946	77,423,167	77,631,113	3,468,409	-	7,081,982	-
2062	154,214	80,193,988	80,348,202	3,491,651	-	7,335,432	-
2063	103,249	83,057,140	83,160,389	3,441,797	-	7,597,328	-
2064	56,799	86,014,204	86,071,003	3,466,739	-	7,867,813	-
2065	42,139	89,041,349	89,083,488	3,444,437	-	8,144,710	-
2066	26,648	92,174,762	92,201,410	3,412,611	-	8,431,326	-
2067	19,962	95,408,497	95,428,459	3,408,099	-	8,727,120	-
2068	12,076	98,756,379	98,768,455	3,355,288	-	9,033,354	-
2069	8,375	102,216,976	102,225,351	3,335,016	-	9,349,899	-
2070	2,831	105,800,407	105,803,238	3,289,041	-	9,677,679	-
2071	-	109,506,351	109,506,351	3,221,779	-	10,016,666	-
2072	-	113,339,073	113,339,073	3,157,520	-	10,367,249	-
2073	-	117,305,941	117,305,941	3,069,029	-	10,730,103	-
2074	-	121,411,649	121,411,649	2,974,388	-	11,105,657	-
2075	-	125,661,057	125,661,057	2,872,475	-	11,494,355	-
2076	-	130,059,194	130,059,194	2,755,927	-	11,896,657	-
2077	-	134,611,266	134,611,266	2,644,673	-	12,313,040	-
2078	-	139,322,660	139,322,660	2,519,819	-	12,743,996	-
2079	-	144,198,953	144,198,953	2,383,292	-	13,190,036	-
2080	-	149,245,916	149,245,916	2,251,636	-	13,651,687	-
2081	-	154,469,523	154,469,523	2,102,528	-	14,129,497	-
2082	-	159,875,956	159,875,956	1,957,822	-	14,624,029	-
2083	-	165,471,614	165,471,614	1,814,011	-	15,135,870	-
2084	-	171,263,120	171,263,120	1,666,335	-	15,665,625	-
2085	-	177,257,329	177,257,329	1,529,904	-	16,213,922	-

## 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) * 9.15%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2086	-	183,461,336	183,461,336	1,387,040	-	16,781,409	-
2087	-	189,882,483	189,882,483	1,246,841	-	17,368,759	-
2088	-	196,528,370	196,528,370	1,117,364	-	17,976,665	-
2089	-	203,406,863	203,406,863	986,305	-	18,605,849	-
2090	-	210,526,103	210,526,103	867,413	-	19,257,053	-
2091	-	217,894,517	217,894,517	756,816	-	19,931,050	-
2092	-	225,520,825	225,520,825	653,403	-	20,628,637	-
2093	-	233,414,054	233,414,054	561,091	-	21,350,639	-
2094	-	241,583,546	241,583,546	475,334	-	22,097,912	-
2095	-	250,038,970	250,038,970	400,521	-	22,871,339	-
2096	-	258,790,334	258,790,334	332,660	-	23,671,835	-
2097	-	267,847,996	267,847,996	274,425	-	24,500,350	-
2098	-	277,222,676	277,222,676	223,394	-	25,357,862	-
2099	-	286,925,470	286,925,470	180,435	-	26,245,387	-
2100	-	296,967,861	296,967,861	144,112	-	27,163,976	-
2101	-	307,361,736	307,361,736	113,741	-	28,114,715	-
2102	-	318,119,397	318,119,397	88,619	-	29,098,730	-
2103	-	329,253,576	329,253,576	68,105	-	30,117,185	-
2104	-	340,777,451	340,777,451	51,581	-	31,171,287	-
2105	-	352,704,662	352,704,662	38,449	-	32,262,282	-
2106	-	365,049,325	365,049,325	28,167	-	33,391,462	-
2107	-	377,826,051	377,826,051	20,250	-	34,560,163	-
2108	-	391,049,963	391,049,963	14,263	-	35,769,769	-
2109	-	404,736,712	404,736,712	9,829	-	37,021,711	-
2110	-	418,902,497	418,902,497	6,612	-	38,317,470	-
2111	-	433,564,084	433,564,084	4,332	-	39,658,582	-
2112	-	448,738,827	448,738,827	2,759	-	41,046,632	-
2113	-	464,444,686	464,444,686	1,703	-	42,483,264	-
2114	-	480,700,250	480,700,250	1,015	-	43,970,179	-
2115	-	497,524,759	497,524,759	585	-	45,509,135	-
2116	-	514,938,126	514,938,126	322	-	47,101,955	-
2117	-	532,960,960	532,960,960	174	-	48,750,523	-

## 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) * 9.15%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2118	-	551,614,594	551,614,594	91	-	50,456,791	-
2119	-	570,921,105	570,921,105	45	-	52,222,779	-
2120	-	590,903,344	590,903,344	23	-	54,050,576	-
2121	-	611,584,961	611,584,961	10	-	55,942,347	-
2122	-	632,990,435	632,990,435	4	-	57,900,329	-
2123	-	655,145,100	655,145,100	2	-	59,926,840	-
2124	-	678,075,179	678,075,179	-	-	62,024,280	-
2125	-	701,807,810	701,807,810	-	-	64,195,129	-



## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
2022	5,666,289	1,274,445	1,214,445	-	(810,370)	4,915,919
2023	4,915,919	1,243,131	1,328,605	-	316,757	5,147,202
2024	5,147,202	1,204,046	1,430,112	-	327,221	5,248,357
2025	5,248,357	1,164,520	1,521,718	-	329,534	5,220,693
2026	5,220,693	1,155,560	1,644,050	-	323,469	5,055,672
2027	5,055,672	1,076,262	1,694,904	-	308,513	4,745,543
2028	4,745,543	1,076,064	1,827,572	-	284,036	4,278,071
2029	4,278,071	1,036,745	1,931,070	-	249,009	3,632,755
2030	3,632,755	1,039,323	2,074,506	-	202,486	2,800,058
2031	2,800,058	1,001,567	2,189,959	-	143,381	1,755,047
2032	1,755,047	1,026,890	2,360,623	-	70,732	492,046
2033	492,046	983,426	2,466,810	-	-	-
2034	-	957,973	2,589,307	-	-	-
2035	-	901,683	2,689,437	-	-	-
2036	-	844,293	2,798,350	-	-	-
2037	-	781,888	2,906,527	-	-	-
2038	-	668,627	2,963,331	-	-	-
2039	-	582,974	3,044,578	-	-	-
2040	-	527,027	3,152,562	-	-	-
2041	-	396,676	3,192,327	-	-	-
2042	-	249,850	3,218,406	-	-	-
2043	-	140,373	3,278,221	-	-	-
2044	-	-	3,272,136	-	-	-
2045	-	-	3,282,264	-	-	-
2046	-	-	3,314,042	-	-	-
2047	-	-	3,378,684	-	-	-
2048	-	-	3,429,316	-	-	-
2049	-	-	3,378,786	-	-	-
2050	-	-	3,381,932	-	-	-
2051	-	-	3,399,602	-	-	-
2052	-	-	3,406,670	-	-	-
2053	-	-	3,420,989	-	-	-
2054	-	-	3,452,753	-	-	-
2055	-	-	3,516,505	-	-	-

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
2056	-	-	3,572,176	-	-	-
2057	-	-	3,476,221	-	-	-
2058	-	-	3,481,269	-	-	-
2059	-	-	3,493,569	-	-	-
2060	-	-	3,431,847	-	-	-
2061	-	-	3,468,409	-	-	-
2062	-	-	3,491,651	-	-	-
2063	-	-	3,441,797	-	-	-
2064	-	-	3,466,739	-	-	-
2065	-	-	3,444,437	-	-	-
2066	-	-	3,412,611	-	-	-
2067	-	-	3,408,099	-	-	-
2068	-	-	3,355,288	-	-	-
2069	-	-	3,335,016	-	-	-
2070	-	-	3,289,041	-	-	-
2071	-	-	3,221,779	-	-	-
2072	-	-	3,157,520	-	-	-
2073	-	-	3,069,029	-	-	-
2074	-	-	2,974,388	-	-	-
2075	-	-	2,872,475	-	-	-
2076	-	-	2,755,927	-	-	-
2077	-	-	2,644,673	-	-	-
2078	-	-	2,519,819	-	-	-
2079	-	-	2,383,292	-	-	-
2080	-	-	2,251,636	-	-	-
2081	-	-	2,102,528	-	-	-
2082	-	-	1,957,822	-	-	-
2083	-	-	1,814,011	-	-	-
2084	-	-	1,666,335	-	-	-
2085	-	-	1,529,904	-	-	-
2086	-	-	1,387,040	-	-	-
2087	-	-	1,246,841	-	-	-
2088	-	-	1,117,364	-	-	-
2089	-	-	986,305	-	-	-

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) +(e)
2090	-	-	867,413	-	-	-
2091	-	-	756,816	-	-	-
2092	-	-	653,403	-	-	-
2093	-	-	561,091	-	-	-
2094	-	-	475,334	-	-	-
2095	-	-	400,521	-	-	-
2096	-	-	332,660	-	-	-
2097	-	-	274,425	-	-	-
2098	-	-	223,394	-	-	-
2099	-	-	180,435	-	-	-
2100	-	-	144,112	-	-	-
2101	-	-	113,741	-	-	-
2102	-	-	88,619	-	-	-
2103	-	-	68,105	-	-	-
2104	-	-	51,581	-	-	-
2105	-	-	38,449	-	-	-
2106	-	-	28,167	-	-	-
2107	-	-	20,250	-	-	-
2108	-	-	14,263	-	-	-
2109	-	-	9,829	-	-	-
2110	-	-	6,612	-	-	-
2111	-	-	4,332	-	-	-
2112	-	-	2,759	-	-	-
2113	-	-	1,703	-	-	-
2114	-	-	1,015	-	-	-
2115	-	-	585	-	-	-
2116	-	-	322	-	-	-
2117	-	-	174	-	-	-
2118	-	-	91	-	-	-
2119	-	-	45	-	-	-
2120	-	-	23	-	-	-
2121	-	-	10	-	-	-
2122	-	-	4	-	-	-
2123	-	-	2	-	-	-

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

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

Year	Projected Beginning Fiduciary Net Position (a)	Employer Contributions for Current Plan Members (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
2124	-	-	-	-	-	-
2125	-	-	-	-	-	-

## 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) = 3.64%
2023	4,915,919	1,328,605	1,328,605	-	1,287,422	-	1,305,056
2024	5,147,202	1,430,112	1,430,112	-	1,301,205	-	1,355,407
2025	5,248,357	1,521,718	1,521,718	-	1,300,050	-	1,391,556
2026	5,220,693	1,644,050	1,644,050	-	1,318,838	-	1,450,601
2027	5,055,672	1,694,904	1,694,904	-	1,276,650	-	1,442,928
2028	4,745,543	1,827,572	1,827,572	-	1,292,563	-	1,501,207
2029	4,278,071	1,931,070	1,931,070	-	1,282,406	-	1,530,490
2030	3,632,755	2,074,506	2,074,506	-	1,293,578	-	1,586,404
2031	2,800,058	2,189,959	2,189,959	-	1,282,225	-	1,615,852
2032	1,755,047	2,360,623	-	2,360,623	-	1,696,286	1,680,579
2033	492,046	2,466,810	-	2,466,810	-	1,711,985	1,694,472
2034	-	2,589,307	-	2,589,307	-	1,735,560	1,716,125
2035	-	2,689,437	-	2,689,437	-	1,741,042	1,719,861
2036	-	2,798,350	-	2,798,350	-	1,749,612	1,726,635
2037	-	2,906,527	-	2,906,527	-	1,755,117	1,730,372
2038	-	2,963,331	-	2,963,331	-	1,728,238	1,702,205
2039	-	3,044,578	-	3,044,578	-	1,714,914	1,687,428
2040	-	3,152,562	-	3,152,562	-	1,715,026	1,685,886
2041	-	3,192,327	-	3,192,327	-	1,677,283	1,647,171
2042	-	3,218,406	-	3,218,406	-	1,633,171	1,602,281
2043	-	3,278,221	-	3,278,221	-	1,606,649	1,574,717
2044	-	3,272,136	-	3,272,136	-	1,548,838	1,516,569
2045	-	3,282,264	-	3,282,264	-	1,500,513	1,467,814
2046	-	3,314,042	-	3,314,042	-	1,463,242	1,429,954
2047	-	3,378,684	-	3,378,684	-	1,440,780	1,406,624
2048	-	3,429,316	-	3,429,316	-	1,412,373	1,377,541
2049	-	3,378,786	-	3,378,786	-	1,343,985	1,309,557
2050	-	3,381,932	-	3,381,932	-	1,299,243	1,264,722
2051	-	3,399,602	-	3,399,602	-	1,261,379	1,226,662
2052	-	3,406,670	-	3,406,670	-	1,220,785	1,186,024
2053	-	3,420,989	-	3,420,989	-	1,184,003	1,149,163
2054	-	3,452,753	-	3,452,753	-	1,154,140	1,119,082

## 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) = 3.64%
2055	-	3,516,505	-	3,516,505	-	1,135,262	1,099,700
2056	-	3,572,176	-	3,572,176	-	1,113,806	1,077,860
2057	-	3,476,221	-	3,476,221	-	1,046,829	1,012,054
2058	-	3,481,269	-	3,481,269	-	1,012,507	977,913
2059	-	3,493,569	-	3,493,569	-	981,344	946,888
2060	-	3,431,847	-	3,431,847	-	931,048	897,478
2061	-	3,468,409	-	3,468,409	-	908,795	875,170
2062	-	3,491,651	-	3,491,651	-	883,606	850,080
2063	-	3,441,797	-	3,441,797	-	841,211	808,501
2064	-	3,466,739	-	3,466,739	-	818,338	785,748
2065	-	3,444,437	-	3,444,437	-	785,274	753,263
2066	-	3,412,611	-	3,412,611	-	751,418	720,082
2067	-	3,408,099	-	3,408,099	-	724,768	693,863
2068	-	3,355,288	-	3,355,288	-	689,142	659,110
2069	-	3,335,016	-	3,335,016	-	661,559	632,110
2070	-	3,289,041	-	3,289,041	-	630,132	601,493
2071	-	3,221,779	-	3,221,779	-	596,142	568,491
2072	-	3,157,520	-	3,157,520	-	564,277	537,577
2073	-	3,069,029	-	3,069,029	-	529,711	504,153
2074	-	2,974,388	-	2,974,388	-	495,824	471,439
2075	-	2,872,475	-	2,872,475	-	462,464	439,289
2076	-	2,755,927	-	2,755,927	-	428,530	406,657
2077	-	2,644,673	-	2,644,673	-	397,171	376,530
2078	-	2,519,819	-	2,519,819	-	365,482	346,149
2079	-	2,383,292	-	2,383,292	-	333,861	315,891
2080	-	2,251,636	-	2,251,636	-	304,634	287,955
2081	-	2,102,528	-	2,102,528	-	274,735	259,439
2082	-	1,957,822	-	1,957,822	-	247,080	233,095
2083	-	1,814,011	-	1,814,011	-	221,104	208,385
2084	-	1,666,335	-	1,666,335	-	196,160	184,695
2085	-	1,529,904	-	1,529,904	-	173,942	163,615
2086	-	1,387,040	-	1,387,040	-	152,307	143,125

## 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) = 3.64%
2087	-	1,246,841	-	1,246,841	-	132,231	124,138
2088	-	1,117,364	-	1,117,364	-	114,449	107,338
2089	-	986,305	-	986,305	-	97,571	91,419
2090	-	867,413	-	867,413	-	82,875	77,574
2091	-	756,816	-	756,816	-	69,836	65,305
2092	-	653,403	-	653,403	-	58,232	54,401
2093	-	561,091	-	561,091	-	48,296	45,074
2094	-	475,334	-	475,334	-	39,515	36,843
2095	-	400,521	-	400,521	-	32,158	29,954
2096	-	332,660	-	332,660	-	25,796	24,004
2097	-	274,425	-	274,425	-	20,553	19,107
2098	-	223,394	-	223,394	-	16,159	15,007
2099	-	180,435	-	180,435	-	12,605	11,695
2100	-	144,112	-	144,112	-	9,723	9,013
2101	-	113,741	-	113,741	-	7,412	6,863
2102	-	88,619	-	88,619	-	5,577	5,160
2103	-	68,105	-	68,105	-	4,140	3,826
2104	-	51,581	-	51,581	-	3,028	2,796
2105	-	38,449	-	38,449	-	2,180	2,011
2106	-	28,167	-	28,167	-	1,542	1,421
2107	-	20,250	-	20,250	-	1,071	986
2108	-	14,263	-	14,263	-	729	670
2109	-	9,829	-	9,829	-	485	446
2110	-	6,612	-	6,612	-	315	289
2111	-	4,332	-	4,332	-	199	183
2112	-	2,759	-	2,759	-	123	112
2113	-	1,703	-	1,703	-	73	67
2114	-	1,015	-	1,015	-	42	38
2115	-	585	-	585	-	23	21
2116	-	322	-	322	-	12	11
2117	-	174	-	174	-	6	6
2118	-	91	-	91	-	3	3

## 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) = 3.64%
2119	-	45	-	45	-	2	1
2120	-	23	-	23	-	1	1
2121	-	10	-	10	-	-	-
2122	-	4	-	4	-	-	-
2123	-	2	-	2	-	-	-
2124	-	-	-	-	-	-	-
2125	-	-	-	-	-	-	-



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

Year	Differences between Expected and Actual Experience	Recognition Period (Years)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2018	-	6.77	-	-	-	-	-	-	-	-	-	-
2019	(7,382,205)	7.13	(1,035,372)	(1,035,372)	(1,035,372)	(1,035,372)	(134,601)	-	-	-	-	-
2020	-	7.13	-	-	-	-	-	-	-	-	-	-
2021	(14,613,935)	7.01	(2,084,727)	(2,084,727)	(2,084,727)	(2,084,727)	(2,084,727)	(2,084,727)	(20,846)	-	-	-
2022	-	7.01	-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			(3,120,099)	(3,120,099)	(3,120,099)	(3,120,099)	(2,219,328)	(2,084,727)	(20,846)	-	-	-

Year	Changes of Assumptions	Recognition Period (Years)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2018	(2,545,072)	6.77	(375,934)	(375,934)	(289,468)	-	-	-	-	-	-	-
2019	9,827,250	7.13	1,378,296	1,378,296	1,378,296	1,378,296	179,178	-	-	-	-	-
2020	15,841,429	7.13	2,221,799	2,221,799	2,221,799	2,221,799	2,221,799	288,836	-	-	-	-
2021	(990,020)	7.01	(141,230)	(141,230)	(141,230)	(141,230)	(141,230)	(141,230)	(1,410)	-	-	-
2022	(14,785,458)	7.01	(2,109,195)	(2,109,195)	(2,109,195)	(2,109,195)	(2,109,195)	(2,109,195)	(2,109,195)	(21,093)	-	-
Net Increase (Decrease) in OPEB Expense			973,736	973,736	1,060,202	1,349,670	150,552	(1,961,589)	(2,110,605)	(21,093)	-	-

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

Year	Differences between Projected and Actual Earnings on OPEB Plan Investments	Recognition Period (Years)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
2018	97,798	5	19,559	-	-	-	-	-	-	-	-	-
2019	52,114	5	10,423	10,422	-	-	-	-	-	-	-	-
2020	202,726	5	40,545	40,545	40,546	-	-	-	-	-	-	-
2021	(901,036)	5	(180,207)	(180,207)	(180,207)	(180,208)	-	-	-	-	-	-
2022	1,182,245	5	236,449	236,449	236,449	236,449	236,449	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			126,769	107,209	96,788	56,241	236,449	-	-	-	-	-