



TOWN OF OAK BLUFFS

Participant in the Dukes County Pooled OPEB Trust

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

November, 2023



November 8, 2023

Ms. Cheryll Sashin
Treasurer
Town of Oak Bluffs
PO Box 1327
Oak Bluffs, MA 02557

Dear Cheryll:

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 Oak Bluffs, a Participant in the Dukes County Pooled OPEB Trust. 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 Oak Bluffs as well as health plan rates provided by the Trustees of the Dukes County Pooled OPEB Trust. 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 3.72%, 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 3.65% is based on the Bond Buyer 20-Bond GO Index published on June 30, 2023. 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 Dukes County Pooled OPEB Trust's investment policy statement and long-term expected rates of return by asset class obtained from recent surveys of capital market expectations and other reliable sources.

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 Dukes County and Massachusetts Teachers Retirement Systems' actuaries for the Retirement System pension valuations.

Future actuarial valuation results may differ significantly from the current results presented in this report. Examples of potential sources of volatility include plan experience differing from that anticipated by the economic or demographic assumptions, the effect of new entrants, changes in economic or demographic assumptions, the effect of law changes and the delayed effect of smoothing techniques. The potential range of future measurements was not assessed, as it was outside the scope of the project.

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

This valuation report is intended for the sole use of the Town of Oak Bluffs 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 Oak Bluffs 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 Oak Bluffs, other than as consulting actuary for this assignment, that would impair our independence.

The expected claims, cost trend rates, and analysis of regulatory changes have been developed based on the expertise of the undersigned health and welfare actuary, Christopher E. Bean, ASA, MAAA. All other assumptions and methods have been selected based on the expertise of the undersigned pension actuaries, Linda L. Bournival, FSA, EA and Amanda J. Makarevich, FSA.

The undersigned credentialed actuaries agree that the analysis, assumptions and results are overall reasonable. They are Members of the American Academy of Actuaries and together meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinion contained herein. They are available to answer any questions with regard to this report.

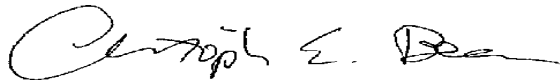
Respectfully submitted,



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EXECUTIVE SUMMARY

Purpose of Report

This report presents the results of the actuarial valuation of the Town of Oak Bluffs' 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 Oak Bluffs. 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 Oak Bluffs.

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 Oak Bluffs Other Postemployment Benefits Program

The Town of Oak Bluffs 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 Cape Cod Municipal Health Group, and the full cost of benefits is shared between the Town and retirees.

Summary of Principal Results

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

Disclosure Date	June 30, 2023	June 30, 2022	% Change
Valuation Date	July 1, 2022	July 1, 2020	
Membership Data			
Active Plan Members	134	144	(6.9%)
Inactive Plan Members (excludes covered spouses)	84	80	5.0%
Total Plan Members	218	224	(2.7%)
Covered Spouses	36	27	33.3%
Covered Payroll	\$10,348,782	\$12,769,825	
Net OPEB Liability			
Discount Rate	3.72%	3.55%	
Total OPEB Liability (TOL)	\$29,770,801	\$36,971,770	(19.5%)
Fiduciary Net Position (FNP)	\$1,596,309	\$1,162,542	37.3%
Net OPEB Liability	\$28,174,492	\$35,809,228	(21.3%)
FNP as % of TOL	5.4%	3.1%	
OPEB Expense			
OPEB Expense	\$699,885	\$2,580,490	(72.9%)
Deferred Outflows	\$8,550,749	\$11,394,403	
Deferred Inflows	\$23,344,235	\$19,040,225	
Recognition Period	6.41	7.03	

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 \$8,665,000. This gain is primarily attributable to the following:

- ◆ a gain due to a lower than expected increase in medical premiums since the prior valuation
- ◆ a gain due to the termination of several high-service employees from the Town
- ◆ a gain due to the death of a retiree who was never eligible for Medicare
- ◆ a gain due to three retirees who were previously assumed to be ineligible for Medicare who are now Medicare-eligible
- ◆ a loss due to two retirees who added spousal coverage in this valuation

Changes of Assumptions

The discount rate changed from 3.55% as of June 30, 2022 to 3.72% as of June 30, 2023. In addition, many other assumptions were updated in this valuation, including the inflation rate, healthcare trend rates, mortality improvement rates, and participation 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	(73,000)
◆ Increase due to change in Trend Assumption	654,000
◆ Decrease due to change in Mortality Improvement Rates	(480,000)
◆ Decrease due to change in Participation Rate	(3,000)
◆ Decrease due to change in Discount Rate	(803,000)
Total	\$ (705,000)

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

Changes of Benefit Terms

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

Total OPEB Liability

The Total OPEB Liability as of the current measurement date, June 30, 2023, is \$29,770,801. The Total OPEB Liability as of the prior measurement date, June 30, 2022, was \$36,971,770. During the current measurement period ending June 30, 2023, the Total OPEB Liability decreased by \$7,200,969, or -19.5%. 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, 2023, is \$1,596,309. The Fiduciary Net Position as of the prior measurement date, June 30, 2022, was \$1,162,542. During the plan years ended June 30, 2023 and June 30, 2022, the actual rates of return were 10.54% and -11.24%, respectively. The expected long-term rate of return is 6.50%. The Fiduciary Net Position is shown in Section 1, Exhibit 1.1.

EXECUTIVE SUMMARY

Employer Future Period Contributions

The Town will make annual contributions to the OPEB trust with the short-term goal of contributing \$200,000 per year, and will utilize additional contribution strategies including but not limited to approved transfers of free cash and the appropriation of additional funds made available after the Dukes County Contributory Retirement System is fully funded.

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 long-term expected rate of return on OPEB plan investments was applied to the first 7 periods of projected future benefit payments and the 3.65% 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 3.72%.

OPEB Expense

The OPEB Expense for the current measurement period ending June 30, 2023, is \$699,885. Benefit changes are recognized immediately, and experience gains and losses and assumption changes developed in this valuation are recognized over 6.41 years. Investment gains and losses are recognized over 5 years. The OPEB Expense for the prior measurement period was \$2,580,490. 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 Dukes County Pooled OPEB Trust has established an irrevocable trust pursuant to Chapter 149 of the Acts of 2010 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 Trustees and is presented below:

Fiscal Year Ended June 30	2023	2022
Trust Fund Composition at Fiscal Year-End		
Fixed Income	\$275,014	\$234,748
Cash & Equivalents	854	982
Large Cap Equity	580,991	382,698
Mid Cap Equity	157,157	104,905
Small Cap Equity	156,666	103,459
International Equity	237,556	156,130
Real Estate	188,071	179,620
Total Market Value of Assets	\$1,596,309	\$1,162,542
Asset Activity		
Market value, beginning of year	\$1,162,542	\$610,171
Employer Premiums	886,957	1,018,974
OPEB Trust Contributions	300,000	660,767
Benefit Payments	(886,957)	(1,018,974)
Administrative Expenses	-	-
Investment Return	133,767	(108,396)
Market value, end of year	\$1,596,309	\$1,162,542
Money-Weighted Rate of Return	10.54%	-11.24%
(Gain) / Loss on OPEB Plan Investments		
Projected earnings	\$83,830	\$63,388
Actual earnings	133,767	(108,396)
(Gain) / Loss on OPEB plan investments	(\$49,937)	\$171,784

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	\$21,402,209
b. Retirees, Covered Spouses and Survivors	15,569,561
c. Total OPEB Liability at 3.55% (a. + b.)	\$36,971,770
2. Service Cost	\$1,699,697
3. Expected Benefit Payments	
a. Current retirees	(\$836,312)
b. Future retirees	(50,645)
c. Total (a. + b.)	(\$886,957)
4. Interest [3.55% x (1.c. + 2. + .5 x 3.c)]	\$1,357,094
5. Changes of benefit terms	\$0
6. Differences between expected and actual experience	(\$8,664,777)
7. Changes of assumptions or other inputs	(\$706,026)
8. Total OPEB Liability, end of year (1.c. + 2. + 3.c. + 4. + 5. + 6. + 7.)	
a. Actives	\$15,468,754
b. Retirees, Covered Spouses and Survivors	14,302,047
c. Total OPEB Liability at 3.72% (a. + b.)	\$29,770,801

SECTION 1 - PRINCIPAL VALUATION RESULTS

Exhibit 1.3 - Development of Actuarially Determined Employer Contributions

The Town will make annual contributions to the OPEB trust with the short-term goal of contributing \$200,000 per year, and will utilize additional contribution strategies including but not limited to approved transfers of free cash and the appropriation of additional funds made available after the Dukes County Contributory Retirement System is fully funded.

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
Discount Rate	3.55%	3.72%
1. Normal Cost	\$1,699,697	\$1,258,141
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$36,971,770	\$29,770,801
b. Actuarial Value of Plan Assets	\$1,162,542	\$1,596,309
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$35,809,228	\$28,174,492
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$35,809,228	\$28,174,492
b. Amortization Period in years	30	30
c. Payroll Growth Rate	3.5%	3.5%
d. Amortization Factor	29.79	29.10
e. Amortization Amount (3.a. / 3.d.)	\$1,202,055	\$968,196
4. Interest on 1. and 3.e.	\$103,012	\$82,820
5. Actuarially Determined Employer Contribution (1. + 3.e. + 4.)	\$3,004,764	\$2,309,157
6. Actual Employer Contribution to OPEB Trust	\$300,000	TBD
7. Expected Benefit Payments	\$886,957	
8. Total Contribution (6. + 7.)	\$1,186,957	

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.1 - Plan Description

Plan Administration

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

Plan Membership

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

Inactive plan members or beneficiaries currently receiving benefit payments ¹	84
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	134
	<u>218</u>

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

Benefits Provided

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

Employer Future Period Contributions

The Town will make annual contributions to the OPEB trust with the short-term goal of contributing \$200,000 per year, and will utilize additional contribution strategies including but not limited to approved transfers of free cash and the appropriation of additional funds made available after the Dukes County Contributory Retirement System is fully funded.

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	\$	29,770,801
Fiduciary net position		(1,596,309)
Net OPEB liability	\$	28,174,492

Fiduciary net position as a percentage of the total OPEB liability 5.36%

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	3.72%, 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 Mortality Table, projected with generational mortality improvement using scale MP-2020.
Healthy Retiree Mortality - General and Public Safety employees	RP-2014 Blue Collar Mortality Table, projected with generational mortality improvement using scale MP-2020.
Disabled Retiree Mortality - General and Public Safety employees	RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2020.
Pre-Retirement Mortality - Teachers	PUB-2010 Teachers Headcount-Weighted Employee Mortality Table, base year 2010, projected with generational mortality improvement using Scale MP-2020.
Healthy Retiree Mortality - Teachers	PUB-2010 Teachers Headcount-Weighted Retiree Mortality Table, base year 2010, projected with generational mortality improvement using Scale MP-2020.
Disabled Retiree Mortality - Teachers	PUB-2010 Teachers Headcount-Weighted Disabled Mortality Table, base year 2010, projected with generational mortality improvement using Scale MP-2020.

SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

Exhibit 2.2 - Net OPEB Liability

Long-Term Expected Rate of Return

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage provided in the investment policy statement and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of June 30, 2023 are summarized in the following table:

Asset Class	Target Allocation ¹	Long-Term Expected Real Rates of Return ²
Large Cap Equity	35%	4.44%
Mid Cap Equity	10%	4.56%
Small Cap Equity	10%	4.56%
International Equity	15%	5.12%
Real Estate	10%	2.98%
Fixed Income	20%	1.93%
Total	100%	

¹ provided in the Dukes County Pooled OPEB Trust's investment policy statement.

² Obtained from recent surveys of capital market expectations and other reliable sources.

Discount Rate

The discount rate used to measure the total OPEB liability was 3.72%. 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 7 periods of projected future benefit payments and the 3.65% municipal bond rate was applied to all periods thereafter 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 3.72 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (2.72 percent) or 1-percentage point higher (4.72 percent) than the current rate:

	1% Decrease (2.72%)	Assumed Discount Rate (3.72%)	1% Increase (4.72%)
Total OPEB Liability	\$ 35,003,894	\$ 29,770,801	\$ 25,635,357
Fiduciary Net Position	(1,596,309)	(1,596,309)	(1,596,309)
Net OPEB Liability	\$ 33,407,585	\$ 28,174,492	\$ 24,039,048
% Change in Net OPEB Liability	18.6%		-14.7%

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 (7% year 1 decreasing to 3.1%) or 1-percentage point higher (9% year 1 decreasing to 5.1%) than the current healthcare cost trend rates:

	1% Decrease 7% Year 1 Decreasing to 3.1%	Assumed Healthcare Cost Trend Rates 8% Year 1 Decreasing to 4.1%	1% Increase 9% Year 1 Decreasing to 5.1%
Total OPEB Liability	\$ 25,040,232	\$ 29,770,801	\$ 35,905,763
Fiduciary Net Position	(1,596,309)	(1,596,309)	(1,596,309)
Net OPEB Liability	\$ 23,443,923	\$ 28,174,492	\$ 34,309,454
% Change in Net OPEB Liability	-16.8%		21.8%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.1 - Changes in Net OPEB Liability and Related Ratios

Fiscal Year Ended June 30	2023	2022	2021	2020	2019
Total OPEB Liability					
Service cost	\$ 1,699,697	\$ 2,428,052	\$ 2,385,700	\$ 1,670,748	\$ 1,623,350
Interest	1,357,094	1,016,425	1,257,611	1,545,581	1,302,646
Changes of benefit terms	-	-	-	(1,892,579)	-
Differences between expected and actual experience	(8,664,777)	-	(13,149,242)	-	787,763
Changes of assumptions	(706,026)	(10,591,898)	582,320	11,671,302	7,690,715
Benefit payments	(886,957)	(1,018,974)	(915,999)	(1,011,954)	(893,103)
Net change in total OPEB liability	\$ (7,200,969)	\$ (8,166,395)	\$ (9,839,610)	\$ 11,983,098	\$ 10,511,371
Total OPEB liability—beginning	\$ 36,971,770	\$ 45,138,165	\$ 54,977,775	\$ 42,994,677	\$ 32,483,306
Total OPEB liability—ending (a)	\$ 29,770,801	\$ 36,971,770	\$ 45,138,165	\$ 54,977,775	\$ 42,994,677
Plan Fiduciary Net Position					
Contributions—employer	\$ 1,186,957	\$ 1,679,741	\$ 1,065,522	\$ 1,061,954	\$ 953,103
Net investment income	133,767	(108,396)	133,550	13,382	13,017
Benefit payments	(886,957)	(1,018,974)	(915,999)	(1,011,954)	(893,103)
Administrative expenses	-	-	-	-	-
Other	-	-	-	-	-
Net change in plan fiduciary net position	\$ 433,767	\$ 552,371	\$ 283,073	\$ 63,382	\$ 73,017
Plan fiduciary net position—beginning	\$ 1,162,542	\$ 610,171	\$ 327,098	\$ 263,716	\$ 190,699
Plan fiduciary net position—ending (b)	\$ 1,596,309	\$ 1,162,542	\$ 610,171	\$ 327,098	\$ 263,716
Net OPEB liability—ending (a) – (b)	\$ 28,174,492	\$ 35,809,228	\$ 44,527,994	\$ 54,650,677	\$ 42,730,961
Plan fiduciary net position as a percentage of the total OPEB liability	5.36%	3.14%	1.35%	0.59%	0.61%
Covered payroll	\$ 10,348,782	\$ 12,769,825	Not available	\$ 11,329,858	\$ 11,431,445
Net OPEB liability as a percentage of covered payroll	272.25%	280.42%	Not available	482.36%	373.80%
Discount Rate	3.72%	3.55%	2.16%	2.21%	3.50%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

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

Fiscal Year Ended June 30	2018	2017			
Total OPEB Liability					
Service cost	\$ 1,695,270	\$ 2,013,706			
Interest	1,194,714	1,022,190			
Changes of benefit terms	(47,363)	-			
Differences between expected and actual experience	-	-			
Changes of assumptions	(1,685,510)	(4,545,382)			
Benefit payments	(700,894)	(632,098)			
Net change in total OPEB liability	\$ 456,217	\$ (2,141,584)			
Total OPEB liability—beginning	\$ 32,027,089	\$ 34,168,673			
Total OPEB liability—ending (a)	\$ 32,483,306	\$ 32,027,089			
Plan Fiduciary Net Position					
Contributions—employer	\$ 800,894	\$ 632,098			
Net investment income	7,093	3,538			
Benefit payments	(700,894)	(632,098)			
Administrative expenses	-	-			
Other	-	-			
Net change in plan fiduciary net position	\$ 107,093	\$ 3,538			
Plan fiduciary net position—beginning	\$ 83,606	\$ 80,068			
Plan fiduciary net position—ending (b)	\$ 190,699	\$ 83,606			
Net OPEB liability—ending (a) – (b)	\$ 32,292,607	\$ 31,943,483			
Plan fiduciary net position as a percentage of the total OPEB liability	0.59%	0.26%			
Covered payroll	\$ 11,853,400	\$ 10,905,737			
Net OPEB liability as a percentage of covered payroll	272.43%	292.91%			
Discount Rate	3.87%	3.58%			

Note: Only 7 years are presented here and on the previous page, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

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

Notes to Schedule

Changes of Benefit Terms

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

Changes of Assumptions

The discount rate changed from 3.55% as of June 30, 2022 to 3.72% as of June 30, 2023. In addition, many other assumptions were updated in this valuation, including the inflation rate, healthcare trend rates, mortality improvement rates, and participation 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	10.54%	-11.24%	30.60%	4.38%	6.26%	4.26%	4.42%			

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

Note: Only 7 years are presented here, beginning with the year of implementation; 10 years of information will be required.

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.2 - Investment Returns

Calculation of Money-Weighted Rate of Return

	Plan Investments/ Net External Cash Flows (a)	Periods Invested (b)	Period Weight (c)=(b)÷12	(d)=(a) x (1+r _{mw}) ^(c)
Beginning value - July 1, 2022	\$ 1,162,542	12	1.00	\$ 1,285,016
Monthly net external cash flows:				
July	100,000	11	0.92	109,616
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	200,000	1	0.08	201,676
June	-	0	0.00	-
Ending value - June 30, 2023				\$ 1,596,309
Money-weighted rate of return:				10.54%

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	\$ 3,004,764	\$ 3,727,819	\$ 3,981,475	\$ 3,203,442	\$ 2,863,098
Contributions in relation to the actuarially determined contribution	<u>1,186,957</u>	<u>1,679,741</u>	<u>1,065,522</u>	<u>1,061,954</u>	<u>953,103</u>
Contribution deficiency (excess)	<u>\$ 1,817,807</u>	<u>\$ 2,048,078</u>	<u>\$ 2,915,953</u>	<u>\$ 2,141,488</u>	<u>\$ 1,909,995</u>
Covered payroll	\$ 10,348,782	\$ 12,769,825	Not available	\$ 11,329,858	\$ 11,431,445
Contributions as a percentage of covered payroll	11.47%	13.15%	Not available	9.37%	8.34%
Discount rate	3.55%	2.16%	2.21%	3.50%	3.87%
Inflation	2.50%	2.40%	2.20%	2.40%	2.60%

SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

Exhibit 3.3 - Schedule of Employer Contributions, continued

Fiscal Year Ended June 30	2018	2017			
Actuarially determined contribution	\$ 2,795,453	\$ 2,401,728			
Contributions in relation to the actuarially determined contribution	800,894	632,098			
Contribution deficiency (excess)	\$ 1,994,559	\$ 1,769,630			
Covered payroll	\$ 11,853,400	\$ 10,905,737			
Contributions as a percentage of covered payroll	6.76%	5.80%			
Discount rate	3.58%	4.00%			
Inflation	3.00%	3.00%			

Note: Only 7 years are presented here and on the previous page, beginning with the year of implementation; 10 years of information will be required.

Notes to Schedule

Valuation Date

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

Methods and Assumptions as of Current Measurement Date

Actuarial cost method	Entry Age Normal.
Amortization method	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	787,763	-	528,700	259,063	-
2020	-	-	-	-	-
2021	-	13,149,242	(5,611,341)	-	7,537,901
2022	-	-	-	-	-
2023	-	8,664,777	(1,351,759)	-	7,313,018
Total				<u>\$ 259,063</u>	<u>\$ 14,850,919</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	\$ -	\$ 1,685,510	\$ (1,366,632)	\$ -	\$ 318,878
2019	7,690,715	-	5,161,555	2,529,160	-
2020	11,671,302	-	6,266,472	5,404,830	-
2021	582,320	-	248,502	333,818	-
2022	-	10,591,898	(3,013,342)	-	7,578,556
2023	-	706,026	(110,144)	-	595,882
Total				<u>\$ 8,267,808</u>	<u>\$ 8,493,316</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	\$ 2,927	\$ -	\$ 2,927	\$ -	\$ -	
2019	2,578	-	2,578	-	-	
2020	9,503	-	7,603	1,900	-	
2021	-	102,855	(61,713)	-	41,142	
2022	171,784	-	68,714	103,070	-	
2023	-	49,937	(9,987)	-	39,950	
Subtotal				\$ 104,970	\$ 81,092	
Net				\$ 23,878	\$ -	

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	\$	(2,273,591)
2025	\$	(2,138,825)
2026	\$	(2,653,080)
2027	\$	(4,061,199)
2028	\$	(3,022,205)
Thereafter		(644,586)
Deferred Outflows	\$	8,550,749
Deferred Inflows	\$	23,344,235

SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

Exhibit 4.2 - OPEB Expense

The OPEB Expense and deferred outflows and inflows of resources primarily result from changes in the components of the net OPEB liability (NOL). Most changes in the NOL are included in the OPEB Expense in the period of the change, including service cost, interest on total OPEB liability, changes in benefit terms and projected earnings on the OPEB plan's investments. Other changes in the net OPEB liability are included in OPEB Expense over the current and future periods. These include the effects on the total OPEB liability of changes of economic and demographic assumptions and differences between expected and actual experience. In addition, the effect on the net OPEB liability of differences between the projected earnings on OPEB plan investments and actual experience with regard to those earnings are included in OPEB expense over the current and future periods. The OPEB Expense for the reporting period ending June 30, 2023 is presented below:

Fiscal Year Ended June 30, 2023

Measurement Date	6/30/2023
1. Service cost	\$ 1,699,697
2. Interest on the total OPEB liability	
a. Total OPEB liability, beginning of year	36,971,770
b. Service cost, beginning of year	1,699,697
c. Benefit payments	(886,957)
d. Interest on total OPEB liability = 3.55% times (a. + b. + .5 times c.)	1,357,094
3. Differences between expected and actual experience	(3,116,466)
4. Changes of benefit terms	-
5. Changes of assumptions	837,176
6. Projected earnings on OPEB plan investments	
a. Plan fiduciary net position, beginning of year	1,162,542
b. Contributions - Employer	1,186,957
c. Benefit payments	(886,957)
d. Administrative expenses and other	-
e. Total projected earnings	(83,830)
7. Differences between projected and actual earnings on OPEB plan investments	6,214
8. OPEB plan administrative expenses	-
9. Other changes in fiduciary net position	-
10. Total OPEB Expense	\$ 699,885

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 Dukes County and Massachusetts Teachers Retirement Systems.

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

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

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

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

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

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

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

Non-Medicare Plans - July 1, 2023	Individual	Family
Blue Care Elect Preferred PPO	\$1,238.00	\$3,098.00
Network Blue NE HMO	\$947.00	\$2,541.00
Harvard Pilgrim PPO	\$1,022.00	\$2,703.00
Harvard Pilgrim HMO	\$931.00	\$2,491.00
Blue Care Elect Preferred PPO (PPO "Saver")	\$1,012.00	\$2,537.00
Master Health Plus	\$1,827.00	\$4,566.00
Network Blue NE HMO (HMO "Saver")	\$777.00	\$2,086.00
Harvard Pilgrim HSAQ PPO	\$794.00	\$2,134.00
Harvard Pilgrim HSAQ HMO	\$720.00	\$1,939.00

Medicare Plans - January 1, 2023	
BCBS Medex	\$380.00
HPHC Medicare Enhance	\$380.00
Tufts Medicare Supplement with PDP Plus	\$460.00
Medicare HMO Blue	\$410.03
Managed Blue for Seniors	\$377.64
Tufts Medicare Preferred HMO	\$371.00

SECTION 5 - SUMMARY OF PLAN PROVISIONS

Participant Contributions	Retired employees contribute 25% of the health plan premium.
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.
Dental Coverage	Dental coverage is provided. The total monthly costs are \$42.00 and \$109.00 for individual and family plans, respectively. Retirees contribute 100% of the monthly premiums.
Life Insurance Coverage	Retirees are eligible for a \$5,000 life insurance benefit. The total monthly cost is \$5.20. Retirees contribute \$1.30 towards the monthly premiums.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Valuation Date	July 1, 2022
Disclosure Date	June 30, 2023
GASB 75 Reporting Date	June 30, 2023
Long-Term Expected Rate of Return	<p>6.5%, net of investment expenses and including inflation at 2.5%. Previously, 6.6%.</p> <p>A long-term assumption based on capital market expectations by asset class, historical returns and professional judgment. A building block approach was used that considered the target asset allocation, expected returns by asset class and risk analysis to determine a long-term expected average annual rate of return.</p>
Municipal Bond Rate	3.65%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2023.
Discount Rate (GASB)	<p>3.72%, compounded annually, for the measurement as of June 30, 2023.</p> <p>3.55%, compounded annually, for the measurement as of June 30, 2022.</p> <p>The single rate that reflects the long-term expected rate of return on OPEB plan investments to the extent that the OPEB plan's assets, which are expected to be invested using a strategy to achieve that return, are sufficient to pay benefits, and a tax-exempt, high-quality municipal bond rate to the extent that the conditions for use of the long-term expected rate of return are not met.</p>
Discount Rate (ADEC)	3.55%, compounded annually, for development of the Actuarially Determined Contribution (ADEC) as of June 30, 2023.
Amortization Method	Increasing at 3.5% over 30 years on an open amortization period for partial pre-funding.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Medical Trend Rates

Year	Trend
1	8.00%
2	7.50%
3	7.00%
4	6.50%
5	6.00%
Ultimate	4.10%

Trend rates after year 5 grade down to the ultimate rate of 4.1 percent utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate trend rate is reached in 2075.

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

Dental Trend Rates

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

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 - 85% of eligible retired employees will elect to participate.

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

Life - 60% of eligible retirees will elect to participate.

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

Dependent Status

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

60% of employees are assumed to retire with a covered spouse.

For current retirees, the actual census information is used.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Medical Per Capita Costs

The following annual per capita costs are for the fiscal year beginning July 1, 2022 and are applicable to retirees, survivors and spouses. Annual costs for current and future retirees are based on the blended curves shown below, developed using the plan coverages elected by current retirees and survivors and premium rates currently in effect. Future years' costs are based on the first year cost adjusted with trend.

Age	Medicare-Eligible		Medicare-Ineligible	
	Male	Female	Male	Female
Under 20	\$5,216	\$6,124	\$5,216	\$6,124
20-24	4,110	6,520	4,110	6,520
25-29	4,277	9,619	4,277	9,619
30-34	5,373	12,154	5,373	12,154
35-39	6,739	12,519	6,739	12,519
40-44	8,398	12,822	8,398	12,822
45-49	10,600	14,074	10,600	14,074
50-54	13,969	16,557	13,969	16,557
55-59	18,153	19,144	18,153	19,144
60-64	23,296	22,785	23,296	22,785
65-69	3,611	3,517	29,065	27,313
70-74	4,327	4,148	34,824	32,206
75-79	5,110	4,813	41,136	37,401
80-84	5,874	5,520	47,281	42,878
85-89	6,543	6,171	54,114	48,950
90-94	7,123	6,585	54,114	48,950
95+	7,571	6,369	54,114	48,950

Retiree Contributions

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

Plan	Contribution
Non-Medicare	\$ 3,985
Medicare	1,097

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.

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Census Data

Employee and retiree data were compiled and submitted by the Town as of May 31, 2023. We made reasonable adjustments for missing or invalid data.

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 Mortality Table, projected with generational mortality improvement using scale MP-2020.

Healthy Retiree Mortality

Healthy retiree mortality rates for General and Public Safety employees are based on the RP-2014 Blue Collar Mortality Table, projected with generational mortality improvement using scale MP-2020.

Disabled Retiree Mortality

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

Turnover Rates

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

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

Disability Rates

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

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

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

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

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

General and Public Safety Employees

Retirement Rates

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

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

SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

Teachers

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

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

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

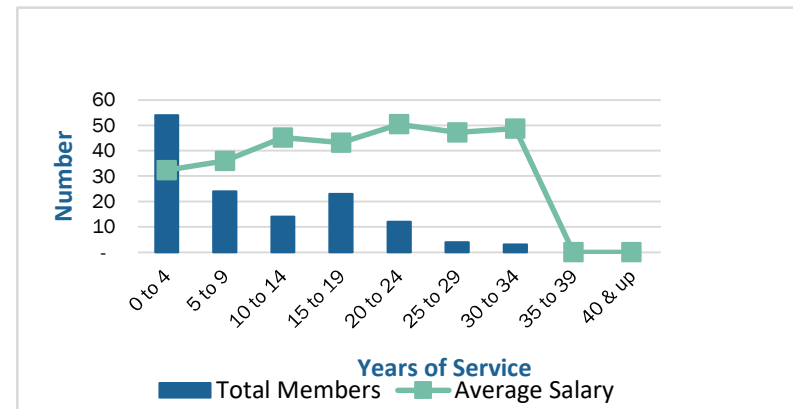
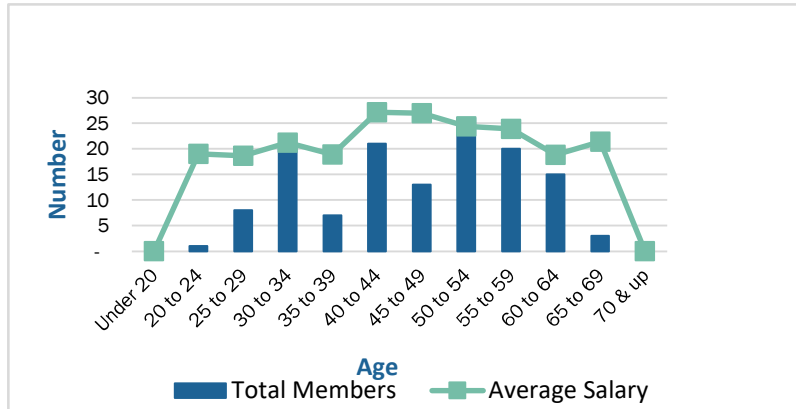
Age	Years of Service					
	Less than 20		20-29		30+	
	Male	Female	Male	Female	Male	Female
50	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
51	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
52	0.0%	0.0%	1.0%	1.0%	2.0%	1.5%
53	0.0%	0.0%	1.5%	1.0%	2.0%	1.5%
54	0.0%	0.0%	2.5%	1.0%	2.0%	2.0%
55	5.0%	3.0%	3.0%	3.0%	6.0%	5.0%
56	5.0%	3.0%	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, 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	-	-	-	-	-	-	-	-	-	-	-	-
20 to 24	1	-	-	-	-	-	-	-	-	1	63,473	63,473
25 to 29	7	1	-	-	-	-	-	-	-	8	498,039	62,255
30 to 34	12	7	1	-	-	-	-	-	-	20	1,413,444	70,672
35 to 39	3	1	3	-	-	-	-	-	-	7	440,362	62,909
40 to 44	10	3	1	6	1	-	-	-	-	21	1,901,382	90,542
45 to 49	3	2	3	4	1	-	-	-	-	13	1,169,385	89,953
50 to 54	6	4	4	6	5	1	-	-	-	26	2,114,734	81,336
55 to 59	5	4	2	3	2	2	2	-	-	20	1,593,430	79,671
60 to 64	7	1	-	3	2	1	1	-	-	15	940,585	62,706
65 to 69	-	1	-	1	1	-	-	-	-	3	213,950	71,317
70 & up	-	-	-	-	-	-	-	-	-	-	-	-
Total	54	24	14	23	12	4	3	-	-	134	10,348,782	77,230
Total Salary	3,486,128	1,727,861	1,264,843	1,988,816	1,211,143	377,417	292,574	-	-			
Average Salary	64,558	71,994	90,346	86,470	100,929	94,354	97,525	-	-			

Average Age: 47.2 Average Service: 9.9



SECTION 7 - PLAN MEMBER INFORMATION

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

Non-Medicare Plans						Medicare Plans		Total
Age	Blue Care Elect Preferred PPO	Network Blue NE HMO	Harvard Pilgrim PPO	Harvard Pilgrim HMO	Blue Care Elect Preferred PPO (PPO "Saver")	BCBS Medex	HPHC Medicare Enhance	
Under 40	0	0	0	0	0	0	0	0
40 to 44	0	0	0	0	0	0	0	0
45 to 49	0	0	0	0	0	0	0	0
50 to 54	2	0	0	0	0	0	0	2
55 to 59	4	1	0	0	0	0	0	5
60 to 64	10	0	0	1	0	0	0	11
65 to 69	0	0	0	0	0	14	0	14
70 to 74	0	0	0	0	0	24	0	24
75 to 79	0	0	0	0	0	15	0	15
80 to 84	0	0	0	0	0	4	0	4
85 to 89	0	0	0	0	0	7	0	7
90+	0	0	0	0	0	1	0	1
Total	16	1	0	1	0	65	0	83
Covered Spouses	14	0	0	1	0	21	0	36

Average Age: 71.8

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

SECTION 8 - GLOSSARY OF TERMS

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

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

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

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

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

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

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

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

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

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

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

SECTION 8 - GLOSSARY OF TERMS

Entry Age Normal Actuarial Cost Method – A method under which the actuarial present value of the projected benefits of each individual in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age.

Explicit Subsidy – The difference between (a) the blended rates based on combined active and retired member experience and (b) actual cash contributions made by the employer.

Fiduciary Net Position – The fair market value of assets as of the measurement date.

Funded Ratio – The Actuarial Value of Assets expressed as a percentage of the Actuarial Accrued Liability.

GASB – Governmental Accounting Standards Board.

Health Cost Trend Rate – The rate of change in per capita health claims cost over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.

Implicit Subsidy – In an experience-rated healthcare plan that includes both active employees and retirees with blended premium rates for all plan members, the difference between (a) the age-adjusted premiums approximating claim costs for retirees in the group and (b) the blended rates based on combined active and retired member experience.

Long-Term Expected Rate of Return – Long-term expected rate of return on OPEB plan investments expected to be used to finance the payment of benefits, net of investment expenses.

Measurement Date – The date as of which the Total OPEB Liability and Fiduciary Net Position are measured.

Municipal Bond Rate – Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.

Net OPEB Liability – The liability of the employer for benefits provided through an OPEB plan. It is calculated as the Total OPEB Liability less the Fiduciary Net Position.

OPEB – Other Postemployment Benefits including medical, dental, vision, hearing and life insurance benefits.

Pay-As-You-Go – A method of financing an OPEB plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.

Present Value of Future Benefits – The actuarial present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value of money and the probabilities of payment.

Reporting Date – The last day of the Plan or employer's fiscal year.

SECTION 8 - GLOSSARY OF TERMS

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

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

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

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

SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	Town of Oak Bluffs	Oak Bluffs Waste Water	Oak Bluffs School	Total
Summary of Member Data Used in Valuation				
Active Members	66	4	64	134
Average Age	44.7	44.6	49.9	47.2
Average Service	8.1	1.9	12.3	9.9
Covered Payroll	5,144,215	274,126	4,930,442	10,348,782
Retired Members and Survivors	61	4	19	84
Average Age	72.1	64.3	72.4	71.8
Covered Spouses	25	3	8	36
Expected Benefit Payments	593,535	92,367	201,055	886,957
OPEB Trust contributions	210,000	6,000	84,000	300,000
Total Employer Contributions	803,535	98,367	285,055	1,186,957
Beginning Net OPEB Liability - June 30, 2022				
Total OPEB Liability	21,435,299	1,309,898	14,226,573	36,971,770
Fiduciary Net Position	813,781	23,250	325,511	1,162,542
Net OPEB Liability	20,621,518	1,286,648	13,901,062	35,809,228
Total OPEB Liability, beginning of year	21,435,299	1,309,898	14,226,573	36,971,770
Service cost	952,548	45,224	701,925	1,699,697
Interest	784,234	46,467	526,393	1,357,094
Changes of benefit terms	0	0	0	0
Differences between expected and actual experience	(5,070,876)	(26,398)	(3,567,503)	(8,664,777)
Changes of assumptions	(444,214)	(29,134)	(232,678)	(706,026)
Benefit payments	(593,535)	(92,367)	(201,055)	(886,957)
Net change in total OPEB liability	(4,371,843)	(56,208)	(2,772,918)	(7,200,969)
Total OPEB Liability, end of year	17,063,456	1,253,690	11,453,655	29,770,801
Ending Net OPEB Liability - June 30, 2023				
Total OPEB Liability	17,063,456	1,253,690	11,453,655	29,770,801
Fiduciary Net Position	1,117,418	31,925	446,966	1,596,309
Net OPEB Liability	15,946,038	1,221,765	11,006,689	28,174,492

SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	Town of Oak Bluffs	Oak Bluffs Waste Water	Oak Bluffs School	Total
Total Deferred Outflows of Resources				
Differences between Expected and Actual Experience	150,198	9,179	99,686	259,063
Changes in Assumptions	4,793,466	292,926	3,181,416	8,267,808
Differences between Expected and Actual Earnings on OPEB Plan Investments	16,715	478	6,686	23,878
Total Deferred Outflows of Resources	4,960,379	302,582	3,287,788	8,550,749
Total Deferred Inflows of Resources				
Differences between Expected and Actual Experience	8,610,188	526,163	5,714,568	14,850,919
Changes in Assumptions	4,924,210	300,915	3,268,190	8,493,316
Differences between Expected and Actual Earnings on OPEB Plan Investments	0	0	0	0
Total Deferred Inflows of Resources	13,534,398	827,079	8,982,758	23,344,235
Total OPEB Expense	301,042	276,584	122,259	699,885
Sensitivity of the Net OPEB Liability to Changes in the Discount Rate				
Current Discount Rate: 3.72%	15,946,038	1,221,765	11,006,689	28,174,492
1% Decrease in the Discount Rate: 2.72%	18,945,442	1,442,138	13,020,005	33,407,585
1% Increase in the Discount Rate: 4.72%	13,575,764	1,047,616	9,415,669	24,039,048
Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates				
Current Trend Rates	15,946,038	1,221,765	11,006,689	28,174,492
1% Decrease in Trend Rates	13,234,661	1,022,554	9,186,708	23,443,923
1% Increase in Trend Rates	19,462,358	1,480,117	13,366,979	34,309,454
Deferred Outflows of Resources and Deferred Inflows of Resources recognized in OPEB Expense				
2024	(1,317,730)	(80,609)	(875,252)	(2,273,591)
2025	(1,239,622)	(75,831)	(823,372)	(2,138,825)
2026	(1,537,674)	(94,064)	(1,021,342)	(2,653,080)
2027	(2,353,793)	(143,988)	(1,563,418)	(4,061,199)
2028	(1,751,612)	(107,151)	(1,163,442)	(3,022,205)
Thereafter	(373,589)	(22,854)	(248,143)	(644,586)

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.

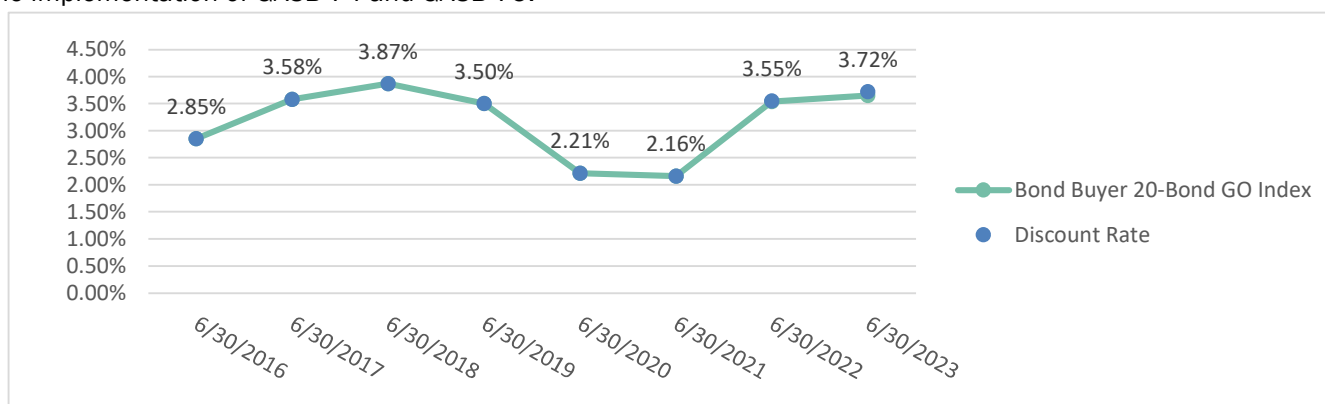
Projected cash flows into and out of the OPEB plan are assumed to be contributions to the OPEB plan, benefit payments, OPEB plan administrative expenses and OPEB plan investment earnings. These projected cash flows are used to project the OPEB plan's fiduciary net position at the beginning of each period. 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 3.72%, a long-term investment return rate of 6.5% and a municipal bond rate of 3.65%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2023. The OPEB plan's fiduciary net position was projected to be 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 7 periods of projected future benefit payments and the 3.65% 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 3.72%.

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) * 11.50%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2023	10,571,692	-	10,571,692	886,957	300,000	-	1,186,957
2024	10,068,702	872,999	10,941,701	1,000,614	200,000	100,383	1,100,231
2025	9,586,010	1,738,651	11,324,661	1,098,940	200,000	199,920	1,099,020
2026	9,152,665	2,568,359	11,721,024	1,133,289	200,000	295,325	1,037,964
2027	8,748,397	3,382,863	12,131,260	1,143,757	200,000	388,981	954,776
2028	8,354,355	4,201,499	12,555,854	1,222,913	200,000	483,113	939,800
2029	7,975,322	5,019,987	12,995,309	1,188,490	200,000	577,227	811,263
2030	7,466,637	5,983,508	13,450,145	1,341,924	200,000	688,019	853,905
2031	7,018,074	6,902,826	13,920,900	1,472,171	200,000	793,727	878,444
2032	6,569,799	7,838,333	14,408,132	1,520,221	200,000	901,297	818,924
2033	6,151,039	8,761,378	14,912,417	1,622,851	200,000	1,007,435	815,416
2034	5,690,426	9,743,926	15,434,352	1,647,850	200,000	1,120,414	727,436
2035	5,321,837	10,652,717	15,974,554	1,685,383	200,000	1,224,912	660,471
2036	4,972,306	11,561,357	16,533,663	1,699,423	200,000	1,329,392	570,031
2037	4,645,943	12,466,398	17,112,341	1,652,743	200,000	1,433,459	419,284
2038	4,358,840	13,352,433	17,711,273	1,730,179	200,000	1,535,341	394,838
2039	4,062,496	14,268,672	18,331,168	1,824,532	200,000	1,640,695	383,837
2040	3,759,765	15,212,994	18,972,759	1,838,205	200,000	1,749,279	288,926
2041	3,459,627	16,177,179	19,636,806	1,929,294	200,000	1,860,147	269,147
2042	3,209,673	17,114,421	20,324,094	2,018,022	200,000	1,967,916	250,106
2043	2,966,851	18,068,586	21,035,437	2,075,792	200,000	2,077,632	198,160
2044	2,786,864	18,984,813	21,771,677	2,153,560	200,000	2,182,985	170,575
2045	2,589,858	19,943,828	22,533,686	2,151,692	200,000	2,293,258	58,434
2046	2,406,197	20,916,168	23,322,365	2,158,071	200,000	2,405,063	-
2047	2,225,107	21,913,541	24,138,648	2,144,796	200,000	2,519,747	-
2048	2,087,712	22,895,789	24,983,501	2,145,094	200,000	2,632,692	-
2049	1,948,712	23,909,212	25,857,924	2,222,051	200,000	2,749,221	-
2050	1,695,049	25,067,902	26,762,951	2,282,539	200,000	2,882,454	-
2051	1,470,548	26,229,106	27,699,654	2,412,059	200,000	3,015,976	-
2052	1,272,486	27,396,656	28,669,142	2,506,544	200,000	3,150,228	-
2053	1,065,663	28,606,899	29,672,562	2,593,137	200,000	3,289,389	-
2054	838,852	29,872,250	30,711,102	2,550,695	200,000	3,434,886	-
2055	646,536	31,139,455	31,785,991	2,485,002	200,000	3,580,597	-
2056	507,687	32,390,814	32,898,501	2,445,816	200,000	3,724,485	-

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) * 11.50%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2057	412,159	33,637,790	34,049,949	2,391,852	200,000	3,867,870	-
2058	332,709	34,908,988	35,241,697	2,140,374	200,000	4,014,040	-
2059	225,333	36,249,823	36,475,156	2,068,676	200,000	4,168,217	-
2060	151,790	37,599,996	37,751,786	2,073,718	200,000	4,323,468	-
2061	118,507	38,954,592	39,073,099	1,986,357	200,000	4,479,227	-
2062	73,628	40,367,029	40,440,657	1,908,716	200,000	4,641,637	-
2063	55,376	41,800,704	41,856,080	1,894,326	200,000	4,806,490	-
2064	42,065	43,278,978	43,321,043	1,852,927	200,000	4,976,470	-
2065	29,921	44,807,359	44,837,280	1,827,013	200,000	5,152,212	-
2066	19,563	46,387,022	46,406,585	1,785,907	200,000	5,333,851	-
2067	13,651	48,017,164	48,030,815	1,753,809	200,000	5,521,294	-
2068	1,174	49,710,720	49,711,894	1,727,371	200,000	5,716,029	-
2069	838	51,450,972	51,451,810	1,698,061	200,000	5,916,134	-
2070	-	53,252,623	53,252,623	1,655,521	200,000	6,123,298	-
2071	-	55,116,465	55,116,465	1,607,492	200,000	6,337,614	-
2072	-	57,045,541	57,045,541	1,564,486	200,000	6,559,430	-
2073	-	59,042,135	59,042,135	1,530,394	200,000	6,789,010	-
2074	-	61,108,610	61,108,610	1,490,625	200,000	7,026,626	-
2075	-	63,247,411	63,247,411	1,434,965	200,000	7,272,557	-
2076	-	65,461,070	65,461,070	1,379,732	200,000	7,527,097	-
2077	-	67,752,207	67,752,207	1,323,583	200,000	7,790,545	-
2078	-	70,123,534	70,123,534	1,272,862	200,000	8,063,214	-
2079	-	72,577,858	72,577,858	1,216,045	200,000	8,345,427	-
2080	-	75,118,083	75,118,083	1,146,458	200,000	8,637,517	-
2081	-	77,747,216	77,747,216	1,078,276	200,000	8,939,830	-
2082	-	80,468,369	80,468,369	1,005,386	200,000	9,252,724	-
2083	-	83,284,762	83,284,762	937,025	200,000	9,576,569	-
2084	-	86,199,729	86,199,729	863,706	200,000	9,911,749	-
2085	-	89,216,720	89,216,720	782,610	200,000	10,258,660	-
2086	-	92,339,305	92,339,305	702,027	200,000	10,617,714	-
2087	-	95,571,181	95,571,181	622,011	200,000	10,989,334	-
2088	-	98,916,172	98,916,172	542,910	200,000	11,373,960	-
2089	-	102,378,238	102,378,238	471,942	200,000	11,772,049	-
2090	-	105,961,476	105,961,476	402,798	200,000	12,184,070	-

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) * 11.50%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2091	-	109,670,128	109,670,128	338,694	200,000	12,610,513	-
2092	-	113,508,582	113,508,582	280,317	200,000	13,051,881	-
2093	-	117,481,382	117,481,382	229,531	200,000	13,508,697	-
2094	-	121,593,230	121,593,230	184,570	200,000	13,981,501	-
2095	-	125,848,993	125,848,993	146,340	200,000	14,470,854	-
2096	-	130,253,708	130,253,708	114,022	200,000	14,977,333	-
2097	-	134,812,588	134,812,588	87,216	200,000	15,501,540	-
2098	-	139,531,029	139,531,029	65,430	200,000	16,044,094	-
2099	-	144,414,615	144,414,615	48,098	200,000	16,605,637	-
2100	-	149,469,127	149,469,127	34,614	200,000	17,186,835	-
2101	-	154,700,546	154,700,546	24,363	200,000	17,788,374	-
2102	-	160,115,065	160,115,065	16,754	200,000	18,410,967	-
2103	-	165,719,092	165,719,092	11,243	200,000	19,055,351	-
2104	-	171,519,260	171,519,260	7,355	200,000	19,722,288	-
2105	-	177,522,434	177,522,434	4,685	200,000	20,412,568	-
2106	-	183,735,719	183,735,719	2,905	200,000	21,127,008	-
2107	-	190,166,469	190,166,469	1,752	200,000	21,866,453	-
2108	-	196,822,295	196,822,295	1,027	200,000	22,631,779	-
2109	-	203,711,075	203,711,075	584	200,000	23,423,891	-
2110	-	210,840,963	210,840,963	323	200,000	24,243,728	-
2111	-	218,220,397	218,220,397	174	200,000	25,092,258	-
2112	-	225,858,111	225,858,111	92	200,000	25,970,487	-
2113	-	233,763,145	233,763,145	47	200,000	26,879,454	-
2114	-	241,944,855	241,944,855	23	200,000	27,820,235	-
2115	-	250,412,925	250,412,925	12	200,000	28,793,943	-
2116	-	259,177,377	259,177,377	6	200,000	29,801,731	-
2117	-	268,248,585	268,248,585	2	200,000	30,844,792	-
2118	-	277,637,285	277,637,285	1	200,000	31,924,359	-
2119	-	287,354,590	287,354,590	-	200,000	33,041,712	-

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	1,162,542	1,186,957	886,957	-	133,767	1,596,309
2024	1,596,309	1,100,231	1,000,614	-	106,998	1,802,924
2025	1,802,924	1,099,020	1,098,940	-	117,193	1,920,197
2026	1,920,197	1,037,964	1,133,289	-	121,715	1,946,587
2027	1,946,587	954,776	1,143,757	-	120,386	1,877,992
2028	1,877,992	939,800	1,222,913	-	112,868	1,707,747
2029	1,707,747	811,263	1,188,490	-	98,744	1,429,264
2030	1,429,264	853,905	1,341,924	-	77,042	1,018,287
2031	1,018,287	878,444	1,472,171	-	46,893	471,453
2032	471,453	818,924	1,520,221	-	7,852	-
2033	-	815,416	1,622,851	-	-	-
2034	-	727,436	1,647,850	-	-	-
2035	-	660,471	1,685,383	-	-	-
2036	-	570,031	1,699,423	-	-	-
2037	-	419,284	1,652,743	-	-	-
2038	-	394,838	1,730,179	-	-	-
2039	-	383,837	1,824,532	-	-	-
2040	-	288,926	1,838,205	-	-	-
2041	-	269,147	1,929,294	-	-	-
2042	-	250,106	2,018,022	-	-	-
2043	-	198,160	2,075,792	-	-	-
2044	-	170,575	2,153,560	-	-	-
2045	-	58,434	2,151,692	-	-	-
2046	-	-	2,158,071	-	-	-
2047	-	-	2,144,796	-	-	-
2048	-	-	2,145,094	-	-	-
2049	-	-	2,222,051	-	-	-
2050	-	-	2,282,539	-	-	-
2051	-	-	2,412,059	-	-	-
2052	-	-	2,506,544	-	-	-
2053	-	-	2,593,137	-	-	-
2054	-	-	2,550,695	-	-	-
2055	-	-	2,485,002	-	-	-
2056	-	-	2,445,816	-	-	-

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	-	-	2,391,852	-	-	-
2058	-	-	2,140,374	-	-	-
2059	-	-	2,068,676	-	-	-
2060	-	-	2,073,718	-	-	-
2061	-	-	1,986,357	-	-	-
2062	-	-	1,908,716	-	-	-
2063	-	-	1,894,326	-	-	-
2064	-	-	1,852,927	-	-	-
2065	-	-	1,827,013	-	-	-
2066	-	-	1,785,907	-	-	-
2067	-	-	1,753,809	-	-	-
2068	-	-	1,727,371	-	-	-
2069	-	-	1,698,061	-	-	-
2070	-	-	1,655,521	-	-	-
2071	-	-	1,607,492	-	-	-
2072	-	-	1,564,486	-	-	-
2073	-	-	1,530,394	-	-	-
2074	-	-	1,490,625	-	-	-
2075	-	-	1,434,965	-	-	-
2076	-	-	1,379,732	-	-	-
2077	-	-	1,323,583	-	-	-
2078	-	-	1,272,862	-	-	-
2079	-	-	1,216,045	-	-	-
2080	-	-	1,146,458	-	-	-
2081	-	-	1,078,276	-	-	-
2082	-	-	1,005,386	-	-	-
2083	-	-	937,025	-	-	-
2084	-	-	863,706	-	-	-
2085	-	-	782,610	-	-	-
2086	-	-	702,027	-	-	-
2087	-	-	622,011	-	-	-
2088	-	-	542,910	-	-	-
2089	-	-	471,942	-	-	-
2090	-	-	402,798	-	-	-

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	-	-	338,694	-	-	-
2092	-	-	280,317	-	-	-
2093	-	-	229,531	-	-	-
2094	-	-	184,570	-	-	-
2095	-	-	146,340	-	-	-
2096	-	-	114,022	-	-	-
2097	-	-	87,216	-	-	-
2098	-	-	65,430	-	-	-
2099	-	-	48,098	-	-	-
2100	-	-	34,614	-	-	-
2101	-	-	24,363	-	-	-
2102	-	-	16,754	-	-	-
2103	-	-	11,243	-	-	-
2104	-	-	7,355	-	-	-
2105	-	-	4,685	-	-	-
2106	-	-	2,905	-	-	-
2107	-	-	1,752	-	-	-
2108	-	-	1,027	-	-	-
2109	-	-	584	-	-	-
2110	-	-	323	-	-	-
2111	-	-	174	-	-	-
2112	-	-	92	-	-	-
2113	-	-	47	-	-	-
2114	-	-	23	-	-	-
2115	-	-	12	-	-	-
2116	-	-	6	-	-	-
2117	-	-	2	-	-	-
2118	-	-	1	-	-	-
2119	-	-	-	-	-	-

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) = 3.72%
2024	1,596,309	1,000,614	1,000,614	-	969,598	-	982,518
2025	1,802,924	1,098,940	1,098,940	-	999,884	-	1,040,388
2026	1,920,197	1,133,289	1,133,289	-	968,204	-	1,034,450
2027	1,946,587	1,143,757	1,143,757	-	917,509	-	1,006,584
2028	1,877,992	1,222,913	1,222,913	-	921,133	-	1,037,670
2029	1,707,747	1,188,490	1,188,490	-	840,568	-	972,314
2030	1,429,264	1,341,924	1,341,924	-	891,160	-	1,058,489
2031	1,018,287	1,472,171	-	1,472,171	-	1,125,093	1,119,604
2032	471,453	1,520,221	-	1,520,221	-	1,120,902	1,114,706
2033	-	1,622,851	-	1,622,851	-	1,154,437	1,147,307
2034	-	1,647,850	-	1,647,850	-	1,130,941	1,123,223
2035	-	1,685,383	-	1,685,383	-	1,115,968	1,107,629
2036	-	1,699,423	-	1,699,423	-	1,085,638	1,076,824
2037	-	1,652,743	-	1,652,743	-	1,018,638	1,009,709
2038	-	1,730,179	-	1,730,179	-	1,028,812	1,019,129
2039	-	1,824,532	-	1,824,532	-	1,046,712	1,036,185
2040	-	1,838,205	-	1,838,205	-	1,017,420	1,006,531
2041	-	1,929,294	-	1,929,294	-	1,030,233	1,018,542
2042	-	2,018,022	-	2,018,022	-	1,039,666	1,027,198
2043	-	2,075,792	-	2,075,792	-	1,031,769	1,018,731
2044	-	2,153,560	-	2,153,560	-	1,032,729	1,019,014
2045	-	2,151,692	-	2,151,692	-	995,497	981,636
2046	-	2,158,071	-	2,158,071	-	963,288	949,257
2047	-	2,144,796	-	2,144,796	-	923,650	909,602
2048	-	2,145,094	-	2,145,094	-	891,247	877,120
2049	-	2,222,051	-	2,222,051	-	890,711	876,021
2050	-	2,282,539	-	2,282,539	-	882,738	867,613
2051	-	2,412,059	-	2,412,059	-	899,978	883,982
2052	-	2,506,544	-	2,506,544	-	902,298	885,683
2053	-	2,593,137	-	2,593,137	-	900,598	883,437
2054	-	2,550,695	-	2,550,695	-	854,663	837,831
2055	-	2,485,002	-	2,485,002	-	803,329	786,995

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) = 3.72%
2056	-	2,445,816	-	2,445,816	-	762,819	746,821
2057	-	2,391,852	-	2,391,852	-	719,718	704,165
2058	-	2,140,374	-	2,140,374	-	621,368	607,543
2059	-	2,068,676	-	2,068,676	-	579,405	566,145
2060	-	2,073,718	-	2,073,718	-	560,364	547,183
2061	-	1,986,357	-	1,986,357	-	517,855	505,344
2062	-	1,908,716	-	1,908,716	-	480,090	468,186
2063	-	1,894,326	-	1,894,326	-	459,692	448,002
2064	-	1,852,927	-	1,852,927	-	433,812	422,504
2065	-	1,827,013	-	1,827,013	-	412,682	401,663
2066	-	1,785,907	-	1,785,907	-	389,191	378,553
2067	-	1,753,809	-	1,753,809	-	368,738	358,424
2068	-	1,727,371	-	1,727,371	-	350,390	340,367
2069	-	1,698,061	-	1,698,061	-	332,315	322,599
2070	-	1,655,521	-	1,655,521	-	312,581	303,244
2071	-	1,607,492	-	1,607,492	-	292,824	283,892
2072	-	1,564,486	-	1,564,486	-	274,954	266,394
2073	-	1,530,394	-	1,530,394	-	259,491	251,248
2074	-	1,490,625	-	1,490,625	-	243,848	235,948
2075	-	1,434,965	-	1,434,965	-	226,476	218,996
2076	-	1,379,732	-	1,379,732	-	210,090	203,019
2077	-	1,323,583	-	1,323,583	-	194,443	187,776
2078	-	1,272,862	-	1,272,862	-	180,407	174,108
2079	-	1,216,045	-	1,216,045	-	166,285	160,374
2080	-	1,146,458	-	1,146,458	-	151,249	145,777
2081	-	1,078,276	-	1,078,276	-	137,244	132,193
2082	-	1,005,386	-	1,005,386	-	123,461	118,839
2083	-	937,025	-	937,025	-	111,014	106,789
2084	-	863,706	-	863,706	-	98,724	94,905
2085	-	782,610	-	782,610	-	86,304	82,911
2086	-	702,027	-	702,027	-	74,692	71,708
2087	-	622,011	-	622,011	-	63,848	61,258

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) = 3.72%
2088	-	542,910	-	542,910	-	53,766	51,551
2089	-	471,942	-	471,942	-	45,092	43,206
2090	-	402,798	-	402,798	-	37,130	35,554
2091	-	338,694	-	338,694	-	30,122	28,824
2092	-	280,317	-	280,317	-	24,052	23,001
2093	-	229,531	-	229,531	-	19,001	18,159
2094	-	184,570	-	184,570	-	14,741	14,079
2095	-	146,340	-	146,340	-	11,276	10,762
2096	-	114,022	-	114,022	-	8,476	8,085
2097	-	87,216	-	87,216	-	6,255	5,963
2098	-	65,430	-	65,430	-	4,528	4,313
2099	-	48,098	-	48,098	-	3,211	3,057
2100	-	34,614	-	34,614	-	2,229	2,121
2101	-	24,363	-	24,363	-	1,514	1,439
2102	-	16,754	-	16,754	-	1,004	954
2103	-	11,243	-	11,243	-	650	617
2104	-	7,355	-	7,355	-	410	389
2105	-	4,685	-	4,685	-	252	239
2106	-	2,905	-	2,905	-	151	143
2107	-	1,752	-	1,752	-	88	83
2108	-	1,027	-	1,027	-	50	47
2109	-	584	-	584	-	27	26
2110	-	323	-	323	-	15	14
2111	-	174	-	174	-	8	7
2112	-	92	-	92	-	4	4
2113	-	47	-	47	-	2	2
2114	-	23	-	23	-	1	1
2115	-	12	-	12	-	-	-
2116	-	6	-	6	-	-	-
2117	-	2	-	2	-	-	-
2118	-	1	-	1	-	-	-
2119	-	-	-	-	-	-	-

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	-	7.40	-	-	-	-	-	-	-	-	-	-
2019	787,763	7.45	105,740	105,740	105,740	47,583	-	-	-	-	-	-
2020	-	7.45	-	-	-	-	-	-	-	-	-	-
2021	(13,149,242)	7.03	(1,870,447)	(1,870,447)	(1,870,447)	(1,870,447)	(1,870,447)	(56,113)	-	-	-	-
2022	-	7.03	-	-	-	-	-	-	-	-	-	-
2023	(8,664,777)	6.41	(1,351,759)	(1,351,759)	(1,351,759)	(1,351,759)	(1,351,759)	(1,351,759)	(554,223)	-	-	-
Net Increase (Decrease) in OPEB Expense			(3,116,466)	(3,116,466)	(3,116,466)	(3,174,623)	(3,222,206)	(1,407,872)	(554,223)	-	-	-

Year	Changes of Assumptions	Recognition Period (Years)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2018	(1,685,510)	7.40	(227,772)	(227,772)	(91,106)	-	-	-	-	-	-	-
2019	7,690,715	7.45	1,032,311	1,032,311	1,032,311	464,538	-	-	-	-	-	-
2020	11,671,302	7.45	1,566,618	1,566,618	1,566,618	1,566,618	704,976	-	-	-	-	-
2021	582,320	7.03	82,834	82,834	82,834	82,834	82,834	2,482	-	-	-	-
2022	(10,591,898)	7.03	(1,506,671)	(1,506,671)	(1,506,671)	(1,506,671)	(1,506,671)	(1,506,671)	(45,201)	-	-	-
2023	(706,026)	6.41	(110,144)	(110,144)	(110,144)	(110,144)	(110,144)	(110,144)	(45,162)	-	-	-
Net Increase (Decrease) in OPEB Expense			837,176	837,176	973,842	497,175	(829,005)	(1,614,333)	(90,363)	-	-	-

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	2,927	5	-	-	-	-	-	-	-	-	-	-
2019	2,578	5	515	-	-	-	-	-	-	-	-	-
2020	9,503	5	1,900	1,900	-	-	-	-	-	-	-	-
2021	(102,855)	5	(20,571)	(20,571)	(20,571)	-	-	-	-	-	-	-
2022	171,784	5	34,357	34,357	34,357	34,356	-	-	-	-	-	-
2023	(49,937)	5	(9,987)	(9,987)	(9,987)	(9,988)	(9,988)	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			6,214	5,699	3,799	24,368	(9,988)	-	-	-	-	-