



# **COUNTY OF DUKES COUNTY**

**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, 2020**

KMS Actuarial, LLC  
52 Hunt Road  
Kingston, NH 03848

October, 2020





October 19, 2020

Ms. Ann Metcalf  
Treasurer  
County of Dukes County  
9 Airport Road, Suite 2  
Vineyard Haven, MA 02568

Dear Ann:

We are pleased to present the enclosed report of the July 1, 2018 actuarial valuation of the retiree health care benefits for the County of Dukes County, 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, 2020 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 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 County of Dukes County as well as health plan rates provided by the Trustees of the Dukes County Pooled OPEB Trust as of July 1, 2019. 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 2.26%, 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 2.21% is based on the Bond Buyer 20-Bond GO Index published on June 30, 2020. The long-term expected rate of return is 7%. 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 Trust's investment consultant, Dahab Associates.

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 Dukess County Retirement System's 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 County of Dukess County 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.

Respectfully submitted,



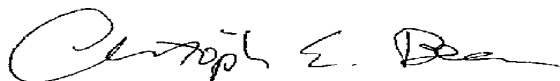
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# EXECUTIVE SUMMARY

## Purpose of Report

This report presents the results of the actuarial valuation of the County of Dukes County's retiree health care benefits as of July 1, 2018. The valuation was prepared in accordance with and for the purpose of financial reporting and disclosures as of June 30, 2020 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 County of Dukes County. 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 County of Dukes County.

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

### County of Dukes County Other Postemployment Benefits Program

The County of Dukes County 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 County 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 County and retirees.

### Summary of Principal Results

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

Disclosure Date	June 30, 2020	June 30, 2019	% Change
<b>Valuation Date</b>	<b>July 1, 2018</b>	<b>July 1, 2018</b>	
<b>Membership Data</b>			
Active Plan Members	36	35	2.9%
Inactive Plan Members (excludes covered spouses)	22	24	(8.3%)
Total Plan Members	58	59	(1.7%)
Covered Spouses	10	11	(9.1%)
Covered Payroll	\$2,808,207	\$2,658,800	5.6%
<b>Net OPEB Liability</b>			
Discount Rate	2.26%	3.81%	
Total OPEB Liability (TOL)	\$12,187,809	\$9,222,049	32.2%
Fiduciary Net Position (FNP)	\$1,222,654	\$1,074,817	13.8%
Net OPEB Liability	\$10,965,155	\$8,147,232	34.6%
FNP as % of TOL	10.0%	11.7%	(14.5%)
<b>OPEB Expense</b>			
OPEB Expense	\$1,381,089	\$1,062,991	29.9%
Deferred Outflows	\$4,248,443	\$2,409,661	
Deferred Inflows	\$0	\$0	
Recognition Period	6.14	6.14	

## 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, 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 3.81% as of June 30, 2019 to 2.26% as of June 30, 2020. 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:

◆ Increase due to change in Inflation Assumption	40,000
◆ Increase due to change in Discount Rate	2,694,000
Total	\$ 2,734,000

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

### Changes of Benefit Terms

The Patient Protection and Affordable Care Act (PPACA) previously applied a 40% excise tax, commonly referred to as the "Cadillac Tax," to the cost of plan benefits in excess of statutory thresholds beginning in 2022. This tax was repealed in December 2019. All other benefit terms are the same as those used in the prior measurement. A Summary of the Principal Plan Provisions is provided in Section 5.

### Total OPEB Liability

The Total OPEB Liability as of the current measurement date, June 30, 2020, is \$12,187,809. The Total OPEB Liability as of the prior measurement date, June 30, 2019, was \$9,222,049. During the current measurement period ending June 30, 2020, the Total OPEB Liability increased by \$2,965,760, or 32.2%. 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, 2020, is \$1,222,654. The Fiduciary Net Position as of the prior measurement date, June 30, 2019, was \$1,074,817. During the plan years ended 2020 and 2019, the actual rates of return were 4.56% and 4.74%, respectively. The expected long-term rate of return is 7.00%. The Fiduciary Net Position is shown in Section 1, Exhibit 1.1.

### Employer Future Period Contributions

The County is unable to commit to an annual funding amount at this time due to the current economic environment, so we have assumed no future contributions to the OPEB trust.

## EXECUTIVE SUMMARY

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### Discount Rate

As of the June 30, 2020 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 6 periods of projected future benefit payments and, the 2.21% 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 2.26%.

### OPEB Expense

The OPEB Expense for the current measurement period ending June 30, 2020, is \$1,381,089. Benefit changes are recognized immediately and experience gains and losses and assumption changes developed in this valuation are recognized over 6.14 years. Investment gains and losses are recognized over 5 years. The OPEB Expense for the prior measurement period was \$1,062,991. 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 impacts 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 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, employer contributions to the trust 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	2020	2019
<b>Trust Fund Composition at Fiscal Year-End</b>		
Fixed Income	\$227,008	\$218,129
Cash & Equivalents	51,693	38,348
Large Cap Equity	416,371	371,495
Mid Cap Equity	116,711	106,306
Small Cap Equity	116,405	101,670
International Equity	175,869	154,800
Real Estate	118,597	84,069
Total Market Value of Assets	<u>\$1,222,654</u>	<u>\$1,074,817</u>
<b>Asset Activity</b>		
Market value, beginning of year	\$1,074,817	\$814,895
Employer Premiums	303,108	318,349
OPEB Trust Contributions	98,840	214,951
Benefit Payments	(303,108)	(318,349)
Administrative Expenses	-	-
Investment Return	48,997	44,971
Market value, end of year	<u>\$1,222,654</u>	<u>\$1,074,817</u>
<b>Money-Weighted Rate of Return</b>	4.56%	4.74%
<b>(Gain) / Loss on OPEB Plan Investments</b>		
Projected earnings	\$80,611	\$71,150
Actual earnings	48,997	44,971
(Gain) / Loss on OPEB plan investments	\$31,614	\$26,179

## 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, 2020 measurement date was developed from an actuarial valuation as of July 1, 2018 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, 2019 to the end of the measurement period, June 30, 2020 is shown below:

Measurement Date	June 30, 2020
<b>1. Total OPEB Liability, beginning of year:</b>	
a. Actives	\$3,906,664
b. Retirees, Covered Spouses and Survivors	5,315,385
c. Total OPEB Liability at 3.81% (a. + b.)	\$9,222,049
<b>2. Service Cost</b>	<b>\$507,923</b>
<b>3. Expected Benefit Payments</b>	
a. Current retirees	(\$266,981)
b. Future retirees	(36,127)
c. Total (a. + b.)	(\$303,108)
<b>4. Interest [3.81% x (1.c. + 2. + .5 x 3.c)]</b>	<b>\$364,938</b>
<b>5. Changes of benefit terms</b>	<b>(\$337,801)</b>
<b>6. Differences between expected and actual experience</b>	<b>\$0</b>
<b>7. Changes of assumptions or other inputs</b>	<b>\$2,733,808</b>
<b>8. Total OPEB Liability, end of year (1.c. + 2. + 3.c. + 4. + 5. + 6. + 7.)</b>	
a. Actives	\$5,899,473
b. Retirees, Covered Spouses and Survivors	6,288,336
c. Total OPEB Liability at 2.26% (a. + b.)	\$12,187,809

## SECTION 1 - PRINCIPAL VALUATION RESULTS

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

The County is unable to commit to an annual funding amount at this time due to the current economic environment, so we have assumed no future contributions to the OPEB trust.

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, 2020	June 30, 2021
<b>Discount Rate</b>	<b>3.81%</b>	<b>2.26%</b>
1. Normal Cost	\$507,923	\$741,178
2. Unfunded Actuarial Accrued Liability		
a. Actuarial Accrued Liability	\$9,222,049	\$12,187,809
b. Actuarial Value of Plan Assets	\$1,074,817	\$1,222,654
c. Unfunded Actuarial Accrued Liability (a. - b.)	\$8,147,232	\$10,965,155
3. Amortization of Unfunded Actuarial Accrued Liability		
a. Unfunded Actuarial Accrued Liability	\$8,147,232	\$10,965,155
b. Amortization Period in years	30	30
c. Payroll Growth Rate	3.5%	3.5%
d. Amortization Factor	28.74	35.92
e. Amortization Amount (3.a. / 3.d.)	\$283,481	\$305,266
4. Interest on 1. and 3.e.	\$30,152	\$23,650
5. Actuarially Determined Employer Contribution (1. + 3.e. + 4.)	\$821,556	\$1,070,094
6. Actual Employer Contribution to OPEB Trust	\$98,840	TBD
7. Expected Benefit Payments	\$303,108	
8. Total Contribution (6. + 7.)	\$401,948	

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.1 - Plan Description

#### Plan Administration

The County of Dukes County 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, 2020, OPEB plan membership consisted of the following:

Inactive plan members or beneficiaries currently receiving benefit payments <sup>1</sup>	22
Inactive plan members entitled to but not yet receiving benefit payments	0
Active plan members	36
	<u>58</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 County 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 County and retirees.

#### Employer Future Period Contributions

The County is unable to commit to an annual funding amount at this time due to the current economic environment, so we have assumed no future contributions to the OPEB trust.

## SECTION 2 - NOTES TO THE FINANCIAL STATEMENTS

### Exhibit 2.2 - Net OPEB Liability

The components of the net OPEB liability at June 30, 2020, were as follows:

Total OPEB liability	\$ 12,187,809
Fiduciary net position	(1,222,654)
Net OPEB liability	\$ 10,965,155

Fiduciary net position as a percentage of the total OPEB liability 10.03%

#### Actuarial Assumptions

The total OPEB liability was determined by an actuarial valuation as of July 1, 2018, rolled forward to the measurement date and using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.4 percent
Discount rate	2.26 percent, net of investment expenses, including inflation
Healthcare cost trend rate	8 percent for 2018, decreasing 0.5 percent per year to 5.5 percent, then grading down to an ultimate trend rate of 3.9 percent, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical inflation rate is reached in 2075.
Pre-Retirement Mortality - General and Public Safety employees	RP-2000 Employees Mortality Table, base year 2009, projected with generational mortality improvement using scale BB.
Post-Retirement Mortality - General and Public Safety employees	RP-2000 Healthy Annuitant Mortality Table, base year 2009, projected with generational mortality improvement using scale BB.

## 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, 2020 are summarized in the following table:

<b>Asset Class</b>	<b>Target Allocation</b>	<b>Long-Term Expected Real Rates of Return<sup>1</sup></b>
Large Cap Equity	35%	5.00%
Mid Cap Equity	10%	6.40%
Small Cap Equity	10%	6.50%
International Equity	15%	3.30%
Real Estate	10%	6.30%
Fixed Income	20%	3.00%
<b>Total</b>	<b>100%</b>	

<sup>1</sup> provided by the Trust's investment consultant, Dahab Associates.

#### Discount Rate

The discount rate used to measure the total OPEB liability was 2.26%. The projection of cash flows used to determine the discount rate assumed that contributions from the County 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 6 periods of projected future benefit payments and, the 2.21% 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 2.26 percent, as well as what the net OPEB liability would be if it were calculated using a discount rate 1-percentage point lower (1.26 percent) or 1-percentage point higher (3.26 percent) than the current rate:

	<b>1% Decrease (1.26%)</b>	<b>Assumed Discount Rate (2.26%)</b>	<b>1% Increase (3.26%)</b>
Total OPEB Liability	\$ 14,564,296	\$ 12,187,809	\$ 10,337,400
Fiduciary Net Position	\$ (1,222,654)	\$ (1,222,654)	\$ (1,222,654)
Net OPEB Liability	\$ 13,341,642	\$ 10,965,155	\$ 9,114,746

#### 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 2.9%) or 1-percentage point higher (9% year 1 decreasing to 4.9%) than the current healthcare cost trend rates:

	<b>1% Decrease 7% Year 1 Decreasing to 2.9%</b>	<b>Assumed Healthcare Cost Trend Rates 8% Year 1 Decreasing to 3.9%</b>	<b>1% Increase 9% Year 1 Decreasing to 4.9%</b>
Total OPEB Liability	\$ 10,006,634	\$ 12,187,809	\$ 15,080,990
Fiduciary Net Position	\$ (1,222,654)	\$ (1,222,654)	\$ (1,222,654)
Net OPEB Liability	\$ 8,783,980	\$ 10,965,155	\$ 13,858,336

## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

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

Fiscal Year Ended June 30	2020	2019	2018	2017	2016
<b>Total OPEB Liability</b>					
Service cost	\$ 507,923	\$ 330,289	\$ 301,243	\$ 342,568	
Interest	364,938	328,781	313,794	285,191	
Changes of benefit terms	(337,801)	-	(8,833)	-	
Differences between expected and actual experience	-	349,306	-	-	
Changes of assumptions	2,733,808	2,331,407	190,641	(576,049)	
Benefit payments	(303,108)	(318,349)	(255,164)	(236,184)	
<b>Net change in total OPEB liability</b>	<b>\$ 2,965,760</b>	<b>\$ 3,021,434</b>	<b>\$ 541,681</b>	<b>\$ (184,474)</b>	
<b>Total OPEB liability—beginning</b>	<b>\$ 9,222,049</b>	<b>\$ 6,200,615</b>	<b>\$ 5,658,934</b>	<b>\$ 5,843,408</b>	
<b>Total OPEB liability—ending (a)</b>	<b>\$ 12,187,809</b>	<b>\$ 9,222,049</b>	<b>\$ 6,200,615</b>	<b>\$ 5,658,934</b>	
<b>Plan Fiduciary Net Position</b>					
Contributions—employer	\$ 401,948	\$ 533,300	\$ 375,164	\$ 386,184	
Net investment income	48,997	44,971	33,657	25,782	
Benefit payments	(303,108)	(318,349)	(255,164)	(236,184)	
Administrative expenses	-	-	-	-	
Other	-	-	-	-	
<b>Net change in plan fiduciary net position</b>	<b>\$ 147,837</b>	<b>\$ 259,922</b>	<b>\$ 153,657</b>	<b>\$ 175,782</b>	
<b>Plan fiduciary net position—beginning</b>	<b>\$ 1,074,817</b>	<b>\$ 814,895</b>	<b>\$ 661,238</b>	<b>\$ 485,456</b>	
<b>Plan fiduciary net position—ending (b)</b>	<b>\$ 1,222,654</b>	<b>\$ 1,074,817</b>	<b>\$ 814,895</b>	<b>\$ 661,238</b>	
<b>Net OPEB liability—ending (a) – (b)</b>	<b>\$ 10,965,155</b>	<b>\$ 8,147,232</b>	<b>\$ 5,385,720</b>	<b>\$ 4,997,696</b>	
Plan fiduciary net position as a percentage of the total OPEB liability	10.03%	11.65%	13.14%	11.68%	
Covered payroll	\$ 2,808,207	\$ 2,658,800	\$ 2,395,994	\$ 2,162,273	
Net OPEB liability as a percentage of covered payroll	390.47%	306.43%	224.78%	231.13%	
<b>Discount Rate</b>	<b>2.26%</b>	<b>3.81%</b>	<b>5.16%</b>	<b>5.38%</b>	

#### Changes of Benefit Terms

The Patient Protection and Affordable Care Act (PPACA) previously applied a 40% excise tax, commonly referred to as the "Cadillac Tax," to the cost of plan benefits in excess of statutory thresholds beginning in 2022. This tax was repealed in December 2019.

#### Changes of Assumptions

The discount rate changed from 3.81% as of June 30, 2019 to 2.26% as of June 30, 2020. 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	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Annual money-weighted rate of return, net of investment expenses	4.56%	4.74%	4.42%	4.14%						

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 4 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, 2019	\$ 1,074,817	12	1.00	\$ 1,123,814
Monthly net external cash flows:				
July	-	11	0.92	-
August	-	10	0.83	-
September	-	9	0.75	-
October	-	8	0.67	-
November	-	7	0.58	-
December	-	6	0.50	-
January	-	5	0.42	-
February	-	4	0.33	-
March	-	3	0.25	-
April	-	2	0.17	-
May	-	1	0.08	-
June	98,840	0	0.00	98,840
Ending value - June 30, 2020				\$ 1,222,654
Money-weighted rate of return:				4.56%

## SECTION 3 - REQUIRED SUPPLEMENTARY INFORMATION

### Exhibit 3.3 - Schedule of Employer Contributions

Fiscal Year Ended June 30	2020	2019	2018	2017	2016
Actuarially determined contribution	\$ 821,556	\$ 582,825	\$ 528,620	\$ 379,403	
Contributions in relation to the actuarially determined contribution	<u>401,948</u>	<u>533,300</u>	<u>375,164</u>	<u>386,184</u>	<u>          </u>
Contribution deficiency (excess)	<u>\$ 419,608</u>	<u>\$ 49,525</u>	<u>\$ 153,456</u>	<u>\$ (6,781)</u>	<u>          </u>
Covered payroll	\$ 2,808,207	\$ 2,658,800	\$ 2,395,994	\$ 2,162,273	
Contributions as a percentage of covered payroll	14.31%	20.06%	15.66%	17.86%	
Discount rate	3.81%	5.16%	5.38%	7.50%	
Inflation	2.40%	2.60%	3.00%	3.00%	

#### 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 percent for 2018, decreasing 0.5 percent per year to 5.5 percent, then grading down to an ultimate trend rate of 3.9 percent, utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate medical inflation rate is reached in 2075.

## SECTION 4 - EMPLOYER REPORTING AMOUNTS UNDER GASB 75

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

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

					Balances at June 30, 2020	
	Experience Losses	Experience Gains	Amounts Recognized in OPEB Expense through June 30, 2020	Deferred Outflows of Resources	Deferred Inflows of Resources	
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)	
2018	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019	349,306	-	113,780	235,526	-	-
2020	-	-	-	-	-	-
Total				<u>\$ 235,526</u>	<u>\$ -</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, 2020	
	Increases in the Total OPEB Liability	Decreases in the Total OPEB Liability	Amounts Recognized in OPEB Expense through June 30, 2020	Deferred Outflows of Resources	Deferred Inflows of Resources	
Year	(a)	(b)	(c)	(a) - (c)	(b) - (c)	
2018	\$ 190,641	\$ -	\$ 87,450	\$ 103,191	\$ -	-
2019	2,331,407	-	759,416	1,571,991	-	-
2020	2,733,808	-	445,246	2,288,562	-	-
Total				<u>\$ 3,963,744</u>	<u>\$ -</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, 2020	
Year	Investment Earnings Less Than Projected  (a)	Investment Earnings Greater Than Projected  (b)	Amounts Recognized in OPEB Expense through June 30, 2020  (c)	Deferred Outflows of Resources  (a) - (c)	Deferred Inflows of Resources  (b) - (c)	
2018	\$ 20,436	\$ -	\$ 12,261	\$ 8,175	\$ -	
2019	26,179	-	10,472	15,707	-	
2020	31,614	-	6,323	25,291	-	
Subtotal				\$ 49,173	\$ -	
Net				\$ 49,173	\$ -	

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

Year ended June 30		
2021	\$	926,640
2022	\$	926,641
2023	\$	922,552
2024	\$	903,907
2025	\$	506,371
Thereafter		62,332
Deferred Outflows	\$	4,248,443
Deferred Inflows	\$	-

## 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, 2020 is presented below:

#### Fiscal Year Ended June 30, 2020

Measurement Date	6/30/2020
1. Service cost	\$ 507,923
2. Interest on the total OPEB liability	
a. Total OPEB liability, beginning of year	9,222,049
b. Service cost, beginning of year	507,923
c. Benefit payments	(303,108)
d. Interest on total OPEB liability = 3.81% times (a. + b. + .5 times c.)	364,938
3. Differences between expected and actual experience	56,890
4. Changes of benefit terms	(337,801)
5. Changes of assumptions	854,104
6. Projected earnings on OPEB plan investments	
a. Plan fiduciary net position, beginning of year	1,074,817
b. Contributions - Employer	401,948
c. Benefit payments	(303,108)
d. Administrative expenses and other	-
e. Total projected earnings	(80,611)
7. Differences between projected and actual earnings on OPEB plan investments	15,646
8. OPEB plan administrative expenses	-
9. Other changes in fiduciary net position	-
<b>10. Total OPEB Expense</b>	<b>\$ 1,381,089</b>

## SECTION 5 - SUMMARY OF PLAN PROVISIONS

**Eligibility for Postemployment Benefits** Employees of the County and their dependents are eligible for postemployment medical and life insurance based on the eligibility requirements under the Dukes County Retirement System.

**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, 2019</b>	<b>Individual</b>	<b>Family</b>
Blue Care Elect PPO	\$1,121.00	\$2,808.00
Blue Cross Network Blue HMO	\$858.00	\$2,303.00
HPHC PPO	\$936.00	\$2,474.00
HPHC EPO HMO	\$852.00	\$2,279.00
Blue Care Elect HD PPO	\$935.00	\$2,345.00
<b>Medicare Plans - January 1, 2019</b>		
Medex	\$368.00	
HPHC Medicare Enhance	\$370.00	

**Participant Contributions** Retired employees contribute 10% of the health plan premium.

## SECTION 5 - SUMMARY OF PLAN PROVISIONS

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<b>Continuation of Coverage to Spouse After Death of Retiree</b>	Surviving spouse may continue coverage for lifetime by paying the required medical premium.
<b>Medicare Penalty Reimbursement</b>	The County reimburses the Medicare late-enrollment penalty, if applicable, based on information provided in the retiree data.
<b>Dental Coverage</b>	Dental coverage is not offered to retirees.
<b>Life Insurance Coverage</b>	Retirees are eligible for a \$5,000 life insurance benefit. The total monthly cost is \$4.65. Retirees contribute \$1.00 towards the monthly premiums.
<b>PPACA Excise Tax</b>	The Patient Protection and Affordable Care Act (PPACA) previously applied a 40% excise tax, commonly referred to as the "Cadillac Tax," to the cost of plan benefits in excess of statutory thresholds beginning in 2022. This tax was repealed in December 2019.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

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<b>Valuation Date</b>	July 1, 2018
<b>Disclosure Date</b>	June 30, 2020
<b>GASB 75 Reporting Date</b>	June 30, 2020
<b>Long-Term Expected Rate of Return</b>	<p>7%, 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>	2.21%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2020.
<b>Discount Rate (GASB)</b>	<p>2.26%, compounded annually, for the measurement as of June 30, 2020.</p> <p>3.81%, compounded annually, for the measurement as of June 30, 2019.</p> <p>The single rate that reflects the long-term expected rate of return on OPEB plan investments to the extent that the OPEB plan's assets, which are expected to be invested using a strategy to achieve that return, are sufficient to pay benefits, and a tax-exempt, high-quality municipal bond rate to the extent that the conditions for use of the long-term expected rate of return are not met.</p>
<b>Discount Rate (ADEC)</b>	3.81%, compounded annually, for development of the Actuarially Determined Contribution (ADEC) as of June 30, 2020.
<b>Amortization Method</b>	Increasing at 3.5% over 30 years on an open amortization period for partial pre-funding.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

### Medical Trend Rates

Year	Trend
1	8.00%
2	7.50%
3	7.00%
4	6.50%
5	6.00%
6	5.50%
Ultimate	3.90%

Trend rates after year 6 grade down to the ultimate rate of 3.9 percent utilizing the Society of Actuaries Getzen Medical Trend Model. The ultimate trend rate is reached in 2075.

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

### Dental Trend Rates

Not applicable (no dental coverage).

### Inflation

2.4% per year, based on the 2020 Social Security Trustees Report published April 22, 2020.

### Payroll Growth

3.5% per year.

### Participation Rates

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

Dental - Not offered to retired employees.

Life - 70% 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, 2018 and are applicable to retirees, survivors and spouses. Annual costs for current and future retirees are based on the blended curves shown below, developed using the plan coverages elected by current retirees and survivors and premium rates currently in effect. Future years' costs are based on the first year cost adjusted with trend.

Age	Medicare-Eligible		Medicare-Ineligible	
	Male	Female	Male	Female
Under 20	\$4,693	\$5,510	\$4,693	\$5,510
20-24	3,698	5,866	3,698	5,866
25-29	3,848	8,654	3,848	8,654
30-34	4,834	10,935	4,834	10,935
35-39	6,064	11,264	6,064	11,264
40-44	7,556	11,536	7,556	11,536
45-49	9,537	12,662	9,537	12,662
50-54	12,568	14,896	12,568	14,896
55-59	16,332	17,224	16,332	17,224
60-64	20,960	20,500	20,960	20,500
65-69	3,701	3,604	26,150	24,573
70-74	4,436	4,252	31,332	28,976
75-79	5,238	4,933	37,010	33,650
80-84	6,020	5,658	42,539	38,578
85-89	6,706	6,325	48,687	44,041
90-94	7,301	6,750	48,687	44,041
95+	7,760	6,528	48,687	44,041

### Retiree Contributions

Annual per capita participant contributions for the fiscal year beginning July 1, 2018 are as follows:

Plan	Contribution
Non-Medicare	\$ 1,443
Medicare	433

### 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 County as of June 30, 2019. We made reasonable adjustments for missing or invalid data.

## SECTION 6 - ACTUARIAL ASSUMPTIONS AND METHODS

### Post-Retirement Mortality

Post-retirement mortality rates for General and Public Safety employees are based on the RP-2000 Healthy Annuitant Mortality Table, base year 2009, projected with generational mortality improvement using scale BB.

### Pre-Retirement Mortality

Pre-retirement mortality rates for General and Public Safety employees are based on the RP-2000 Employees Mortality Table, base year 2009, projected with generational mortality improvement using scale BB.

### 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

### Retirement Rates

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

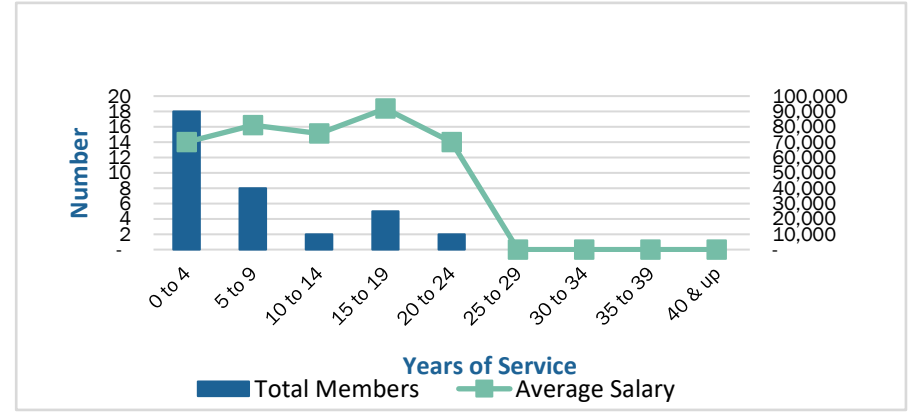
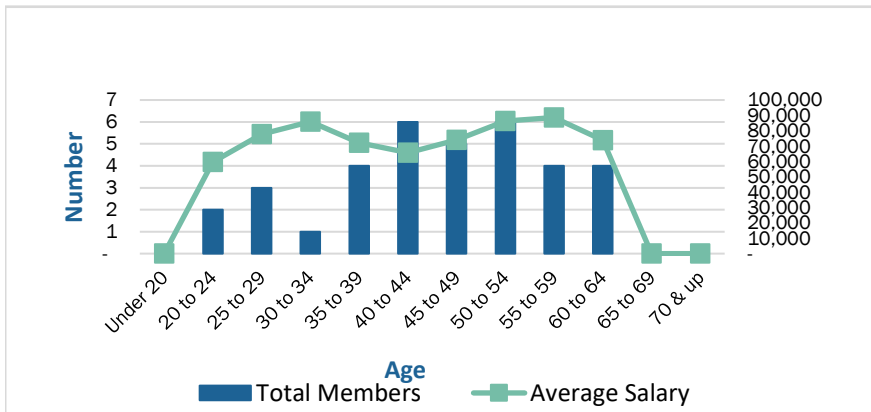
General Employees			Public Safety	
Age	Male	Female	Age	All
45	0.00%	0.00%	45	1.00%
50	1.00%	1.50%	50	2.00%
55	2.00%	5.50%	55	15.00%
60	12.00%	5.00%	60	20.00%
62	30.00%	15.00%	62	25.00%
65	40.00%	15.00%	65	100.00%
69	30.00%	20.00%		
70	100.00%	100.00%		

## SECTION 7 - PLAN MEMBER INFORMATION

### Exhibit 7.1 - Active Members by Age and Years of Service as of July 1, 2018

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	2	-	-	-	-	-	-	-	-	2	119,430	59,715
25 to 29	3	-	-	-	-	-	-	-	-	3	233,439	77,813
30 to 34	1	-	-	-	-	-	-	-	-	1	86,002	86,002
35 to 39	3	1	-	-	-	-	-	-	-	4	289,006	72,251
40 to 44	4	2	-	-	-	-	-	-	-	6	393,965	65,661
45 to 49	2	1	1	-	1	-	-	-	-	5	369,920	73,984
50 to 54	1	2	1	2	-	-	-	-	-	6	517,778	86,296
55 to 59	2	2	-	-	-	-	-	-	-	4	354,363	88,591
60 to 64	-	-	-	3	1	-	-	-	-	4	294,897	73,724
65 to 69	-	-	-	-	-	-	-	-	-	-	-	-
70 & up	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>18</b>	<b>8</b>	<b>2</b>	<b>5</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>35</b>	<b>2,658,800</b>	<b>75,966</b>
<b>Total Salary</b>	<b>1,259,353</b>	<b>648,968</b>	<b>151,289</b>	<b>459,103</b>	<b>140,087</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>			
<b>Average Salary</b>	<b>69,964</b>	<b>81,121</b>	<b>75,645</b>	<b>91,821</b>	<b>70,043</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>			

Average Age: 46.0      Average Service: 7.0



## SECTION 7 - PLAN MEMBER INFORMATION

Exhibit 7.2 - Retired Members, Covered Spouses and Survivors as of July 1, 2018

Age	Non-Medicare Plans					Medicare Plans		Total
	Blue Care Elect PPO	Blue Cross Network Blue HMO	HPHC PPO	HPHC EPO HMO	Blue Care Elect HD PPO	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	0	0	0	0	0	0	0	0
55 to 59	2	0	0	0	0	0	0	2
60 to 64	2	0	0	0	0	1	0	3
65 to 69	1	0	0	0	0	6	0	7
70 to 74	1	0	0	0	0	4	1	6
75 to 79	0	0	0	0	0	2	0	2
80 to 84	1	0	0	0	0	1	0	2
85 to 89	0	0	0	0	0	1	0	1
90+	0	0	0	0	0	1	0	1
<b>Total</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>1</b>	<b>24</b>
<b>Covered Spouses</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>11</b>

Average Age: 71.6

## 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	County of Duke's County	Martha's Vineyard Airport	Senior Services	Dukes County Contributory Ret. System	Vineyard Health Care Access Program	Total
<b>Summary of Member Data Used in Valuation</b>						
Active Members	11	20	0	2	2	35
Average Age	50.1	43.2	-	44.4	52.9	46.0
Average Service	7.8	5.9	-	8.7	11.1	6.9
Covered Payroll	713,110	1,627,047	-	166,781	151,862	2,658,800
Retired Members and Survivors	12	9	1	2	0	24
Average Age	73.4	69.6	63.9	74.2	-	71.6
Covered Spouses	5	4	1	1	0	11
Expected Benefit Payments	96,779	125,572	23,955	51,760	5,042	303,108
OPEB Trust contributions	84,857	0	1,958	0	12,025	98,840
Total Employer Contributions	181,636	125,572	25,913	51,760	17,067	401,948
<b>Beginning Net OPEB Liability - June 30, 2019</b>						
Total OPEB Liability	3,074,115	4,767,234	294,069	876,342	210,289	9,222,049
Fiduciary Net Position*	789,917	155,302	75,563	0	54,035	1,074,817
Net OPEB Liability	2,284,198	4,611,932	218,506	876,342	156,254	8,147,232
Total OPEB Liability, beginning of year	3,074,115	4,767,234	294,069	876,342	210,289	9,222,049
Service cost	102,659	373,453	0	14,804	17,007	507,923
Interest	119,191	193,468	10,748	32,967	8,564	364,938
Changes of benefit terms	(70,087)	(238,075)	(989)	(24,354)	(4,296)	(337,801)
Differences between expected and actual	0	0	0	0	0	0
Changes of assumptions	893,812	1,495,719	77,677	190,120	76,480	2,733,808
Benefit payments	(96,779)	(125,572)	(23,955)	(51,760)	(5,042)	(303,108)
Net change in total OPEB liability	948,796	1,698,993	63,481	161,777	92,713	2,965,760
Total OPEB Liability, end of year	4,022,911	6,466,227	357,550	1,038,119	303,002	12,187,809
<b>Ending Net OPEB Liability - June 30, 2020</b>						
Total OPEB Liability	4,022,911	6,466,227	357,550	1,038,119	303,002	12,187,809
Fiduciary Net Position	910,779	162,384	80,967	0	68,524	1,222,654
Net OPEB Liability	3,112,132	6,303,843	276,583	1,038,119	234,478	10,965,155
* reallocated based on revised FY2019 Airport contribution of \$150,000.						
<b>Actuarially Determined Employer Contribution</b>						
Normal Cost	102,659	373,453	0	14,804	17,007	507,923
Amortization Payment	79,478	160,471	7,603	30,492	5,437	283,481
Interest	6,939	20,342	290	1,726	855	30,152
Actuarially Determined Employer Contribution	189,076	554,266	7,893	47,022	23,299	821,556

## SECTION 9 - BREAKOUT OF RESULTS BY DEPARTMENT

Department	County of Duke's County	Martha's Vineyard Airport	Senior Services	Dukes County Contributory Ret. System	Vineyard Health Care Access Program	Total
<b>Total Deferred Outflows of Resources</b>						
Differences between Expected and Actual Experience	78,511	121,753	7,510	22,381	5,371	235,526
Changes in Assumptions	1,321,290	2,049,013	126,394	376,662	90,385	3,963,744
Differences between Expected and Actual Earnings on OPEB Plan Investments	36,139	7,105	3,457	0	2,472	49,173
<b>Total Deferred Outflows of Resources</b>	<b>1,435,940</b>	<b>2,177,870</b>	<b>137,362</b>	<b>399,043</b>	<b>98,227</b>	<b>4,248,443</b>
<b>Total Deferred Inflows of Resources</b>						
Differences between Expected and Actual Experience	0	0	0	0	0	0
Changes in Assumptions	0	0	0	0	0	0
Differences between Expected and Actual Earnings on OPEB Plan Investments	0	0	0	0	0	0
<b>Total Deferred Inflows of Resources</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total OPEB Expense (Income)</b>	<b>353,510</b>	<b>1,035,585</b>	<b>(33,478)</b>	<b>(34,105)</b>	<b>59,577</b>	<b>1,381,089</b>
<b>Sensitivity of the Net OPEB Liability to Changes in the Discount Rate</b>						
Current Discount Rate: 2.26%	3,112,132	6,303,843	276,583	1,038,119	234,478	10,965,155
1% Decrease in the Discount Rate: 1.26%	3,786,627	7,670,080	336,527	1,263,111	285,297	13,341,642
1% Increase in the Discount Rate: 3.26%	2,586,949	5,240,047	229,909	862,933	194,909	9,114,746
<b>Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates</b>						
Current Trend Rates	3,112,132	6,303,843	276,583	1,038,119	234,478	10,965,155
1% Decrease in Trend Rates	2,493,071	5,049,890	221,565	831,618	187,836	8,783,980
1% Increase in Trend Rates	3,933,275	7,967,126	349,560	1,312,029	296,346	13,858,336
<b>Deferred Outflows of Resources and Deferred Inflows of Resources recognized in OPEB Expense</b>						
2021	313,197	475,022	29,960	87,036	21,425	926,640
2022	313,197	475,022	29,960	87,037	21,425	926,641
2023	311,815	472,927	29,828	86,652	21,330	922,552
2024	305,513	463,369	29,225	84,901	20,899	903,907
2025	171,149	259,580	16,372	47,562	11,708	506,371
Thereafter	21,068	31,953	2,015	5,855	1,441	62,332

## 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.

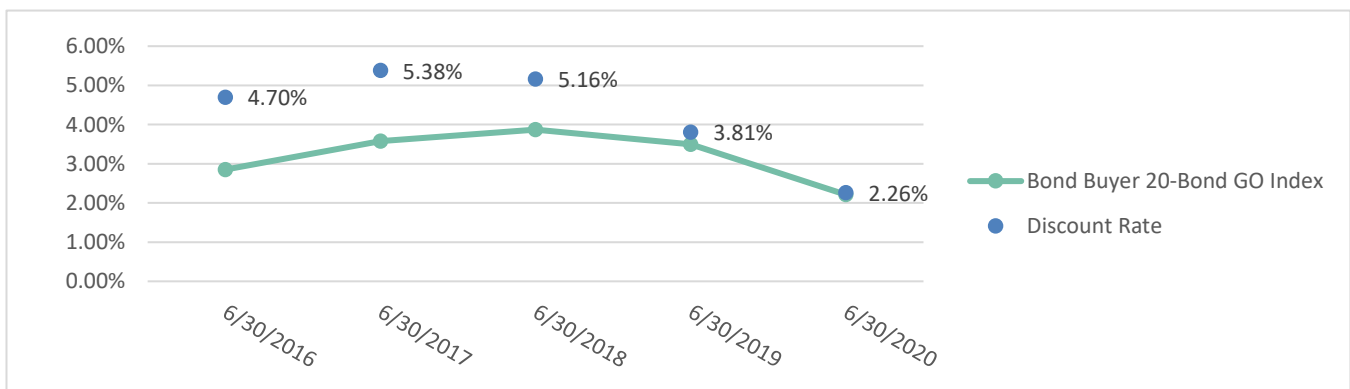
Projected cash flows into and out of the OPEB plan are assumed to be contributions to the OPEB plan, benefit payments, OPEB plan administrative expenses and OPEB plan investment earnings. These projected cash flows are used to project the OPEB plan's fiduciary net position at the beginning of each period. 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 2.26%, a long-term investment return rate of 7% and a municipal bond rate of 2.21%, based on the Bond Buyer 20-Bond GO Index published on June 30, 2020. 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 6 periods of projected future benefit payments and, the 2.21% 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 2.26%.

Below are the historical Bond Buyer 20-Bond GO Indices and the County'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) * 28.75%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2020	2,490,930	-	2,490,930	303,108	98,840	-	401,948
2021	2,327,545	250,568	2,578,113	318,376	-	72,035	246,341
2022	2,206,182	462,165	2,668,347	340,156	-	132,867	207,289
2023	2,096,786	664,953	2,761,739	342,055	-	191,166	150,889
2024	2,000,739	857,661	2,858,400	357,960	-	246,568	111,392
2025	1,896,656	1,061,788	2,958,444	379,523	-	305,252	74,271
2026	1,771,403	1,290,587	3,061,990	418,096	-	371,029	47,067
2027	1,675,235	1,493,925	3,169,160	470,074	-	429,486	40,588
2028	1,549,477	1,730,604	3,280,081	515,209	-	497,529	17,680
2029	1,456,467	1,938,417	3,394,884	546,394	-	557,273	-
2030	1,352,160	2,161,545	3,513,705	577,234	-	621,420	-
2031	1,245,124	2,391,561	3,636,685	576,164	-	687,547	-
2032	1,161,769	2,602,200	3,763,969	628,985	-	748,103	-
2033	1,071,410	2,824,298	3,895,708	663,902	-	811,954	-
2034	980,139	3,051,919	4,032,058	641,701	-	877,392	-
2035	903,244	3,269,936	4,173,180	652,058	-	940,069	-
2036	860,448	3,458,793	4,319,241	688,100	-	994,364	-
2037	817,281	3,653,133	4,470,414	636,092	-	1,050,234	-
2038	753,338	3,873,540	4,626,878	642,295	-	1,113,599	-
2039	726,071	4,062,748	4,788,819	678,260	-	1,167,994	-
2040	683,382	4,273,046	4,956,428	647,645	-	1,228,452	-
2041	650,149	4,479,754	5,129,903	654,336	-	1,287,878	-
2042	620,211	4,689,239	5,309,450	696,633	-	1,348,103	-
2043	583,095	4,912,186	5,495,281	676,807	-	1,412,198	-
2044	537,591	5,150,025	5,687,616	697,403	-	1,480,574	-
2045	497,701	5,388,982	5,886,683	736,047	-	1,549,271	-
2046	450,099	5,642,618	6,092,717	733,443	-	1,622,188	-
2047	395,092	5,910,870	6,305,962	689,913	-	1,699,308	-
2048	354,350	6,172,321	6,526,671	692,697	-	1,774,472	-
2049	328,712	6,426,392	6,755,104	693,095	-	1,847,514	-
2050	308,496	6,683,037	6,991,533	654,509	-	1,921,297	-
2051	291,064	6,945,173	7,236,237	687,588	-	1,996,658	-
2052	254,483	7,235,022	7,489,505	709,446	-	2,079,986	-

## APPENDIX A - CALCULATION OF SINGLE DISCOUNT RATE

**Table 1: Projection of Contributions**

Year	Projected Payroll			Projected Contributions			
	Payroll for Current Plan Members	Payroll for Future Plan Members	Total Payroll	Employer Contributions (Benefit Payments)	Employer Contributions (OPEB Trust)	Employer Contributions Related to Payroll of Future Employees	Portion of Employer Contributions for Current Plan Members
	(a)	(b)	(c) = (a) + (b)	(d)	(e)	(f) = (b) * 28.75%	(g) = (d) + (e) - (f)
2053	218,993	7,532,645	7,751,638	734,104	-	2,165,550	-
2054	187,525	7,835,420	8,022,945	764,637	-	2,252,594	-
2055	162,031	8,141,717	8,303,748	795,049	-	2,340,651	-
2056	135,170	8,459,209	8,594,379	738,489	-	2,431,926	-
2057	105,270	8,789,912	8,895,182	766,189	-	2,527,000	-
2058	85,501	9,121,012	9,206,513	777,448	-	2,622,187	-
2059	68,964	9,459,777	9,528,741	737,212	-	2,719,578	-
2060	54,503	9,807,744	9,862,247	674,844	-	2,819,615	-
2061	28,848	10,178,578	10,207,426	657,444	-	2,926,225	-
2062	17,102	10,547,584	10,564,686	656,972	-	3,032,310	-
2063	13,927	10,920,523	10,934,450	588,876	-	3,139,526	-
2064	11,339	11,305,817	11,317,156	576,228	-	3,250,294	-
2065	8,648	11,704,608	11,713,256	572,850	-	3,364,941	-
2066	7,038	12,116,182	12,123,220	567,331	-	3,483,264	-
2067	-	12,547,533	12,547,533	554,601	-	3,607,273	-
2068	-	12,986,697	12,986,697	543,246	-	3,733,527	-
2069	-	13,441,231	13,441,231	525,547	-	3,864,201	-
2070	-	13,911,674	13,911,674	513,585	-	3,999,448	-
2071	-	14,398,583	14,398,583	501,569	-	4,139,429	-
2072	-	14,902,533	14,902,533	484,049	-	4,284,308	-
2073	-	15,424,122	15,424,122	469,114	-	4,434,259	-
2074	-	15,963,966	15,963,966	450,297	-	4,589,458	-
2075	-	16,522,705	16,522,705	438,626	-	4,750,089	-
2076	-	17,101,000	17,101,000	424,342	-	4,916,343	-
2077	-	17,699,535	17,699,535	404,602	-	5,088,415	-
2078	-	18,319,019	18,319,019	389,050	-	5,266,509	-
2079	-	18,960,185	18,960,185	371,316	-	5,450,837	-
2080	-	19,623,791	19,623,791	356,065	-	5,641,616	-
2081	-	20,310,624	20,310,624	342,870	-	5,839,073	-
2082	-	21,021,496	21,021,496	321,926	-	6,043,441	-
2083	-	21,757,248	21,757,248	308,014	-	6,254,961	-
2084	-	22,518,752	22,518,752	290,285	-	6,473,885	-
2085	-	23,306,908	23,306,908	275,614	-	6,700,471	-

## 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) * 28.75%	Portion of Employer Contributions for Current Plan Members (g) = (d) + (e) - (f)
2086	-	24,122,650	24,122,650	258,094	-	6,934,987	-
2087	-	24,966,943	24,966,943	236,597	-	7,177,712	-
2088	-	25,840,786	25,840,786	218,031	-	7,428,932	-
2089	-	26,745,214	26,745,214	194,953	-	7,688,944	-
2090	-	27,681,296	27,681,296	176,172	-	7,958,057	-
2091	-	28,650,141	28,650,141	153,774	-	8,236,589	-
2092	-	29,652,896	29,652,896	133,066	-	8,524,870	-
2093	-	30,690,747	30,690,747	112,140	-	8,823,240	-
2094	-	31,764,923	31,764,923	94,462	-	9,132,054	-
2095	-	32,876,695	32,876,695	78,306	-	9,451,675	-
2096	-	34,027,379	34,027,379	64,074	-	9,782,484	-
2097	-	35,218,337	35,218,337	51,789	-	10,124,871	-
2098	-	36,450,979	36,450,979	41,205	-	10,479,241	-
2099	-	37,726,763	37,726,763	32,464	-	10,846,015	-
2100	-	39,047,200	39,047,200	25,022	-	11,225,625	-
2101	-	40,413,852	40,413,852	19,085	-	11,618,522	-
2102	-	41,828,337	41,828,337	14,169	-	12,025,170	-
2103	-	43,292,329	43,292,329	10,414	-	12,446,051	-
2104	-	44,807,561	44,807,561	7,391	-	12,881,663	-
2105	-	46,375,826	46,375,826	5,158	-	13,332,522	-
2106	-	47,998,980	47,998,980	3,531	-	13,799,160	-
2107	-	49,678,944	49,678,944	2,378	-	14,282,130	-
2108	-	51,417,707	51,417,707	1,572	-	14,782,005	-
2109	-	53,217,327	53,217,327	1,023	-	15,299,375	-
2110	-	55,079,933	55,079,933	656	-	15,834,853	-
2111	-	57,007,731	57,007,731	416	-	16,389,073	-
2112	-	59,003,002	59,003,002	258	-	16,962,691	-
2113	-	61,068,107	61,068,107	161	-	17,556,385	-
2114	-	63,205,491	63,205,491	99	-	18,170,859	-
2115	-	65,417,683	65,417,683	56	-	18,806,839	-
2116	-	67,707,302	67,707,302	33	-	19,465,078	-
2117	-	70,077,058	70,077,058	18	-	20,146,356	-
2118	-	72,529,755	72,529,755	11	-	20,851,478	-

## 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)
2020	1,074,817	401,948	303,108	-	48,997	1,222,654
2021	1,222,654	246,341	318,376	-	83,065	1,233,684
2022	1,233,684	207,289	340,156	-	81,708	1,182,525
2023	1,182,525	150,889	342,055	-	76,086	1,067,445
2024	1,067,445	111,392	357,960	-	66,091	886,968
2025	886,968	74,271	379,523	-	51,404	633,120
2026	633,120	47,067	418,096	-	31,332	293,423
2027	293,423	40,588	470,074	-	5,508	-
2028	-	17,680	515,209	-	-	-
2029	-	-	546,394	-	-	-
2030	-	-	577,234	-	-	-
2031	-	-	576,164	-	-	-
2032	-	-	628,985	-	-	-
2033	-	-	663,902	-	-	-
2034	-	-	641,701	-	-	-
2035	-	-	652,058	-	-	-
2036	-	-	688,100	-	-	-
2037	-	-	636,092	-	-	-
2038	-	-	642,295	-	-	-
2039	-	-	678,260	-	-	-
2040	-	-	647,645	-	-	-
2041	-	-	654,336	-	-	-
2042	-	-	696,633	-	-	-
2043	-	-	676,807	-	-	-
2044	-	-	697,403	-	-	-
2045	-	-	736,047	-	-	-
2046	-	-	733,443	-	-	-
2047	-	-	689,913	-	-	-
2048	-	-	692,697	-	-	-
2049	-	-	693,095	-	-	-
2050	-	-	654,509	-	-	-
2051	-	-	687,588	-	-	-
2052	-	-	709,446	-	-	-
2053	-	-	734,104	-	-	-

## 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)
2054	-	-	764,637	-	-	-
2055	-	-	795,049	-	-	-
2056	-	-	738,489	-	-	-
2057	-	-	766,189	-	-	-
2058	-	-	777,448	-	-	-
2059	-	-	737,212	-	-	-
2060	-	-	674,844	-	-	-
2061	-	-	657,444	-	-	-
2062	-	-	656,972	-	-	-
2063	-	-	588,876	-	-	-
2064	-	-	576,228	-	-	-
2065	-	-	572,850	-	-	-
2066	-	-	567,331	-	-	-
2067	-	-	554,601	-	-	-
2068	-	-	543,246	-	-	-
2069	-	-	525,547	-	-	-
2070	-	-	513,585	-	-	-
2071	-	-	501,569	-	-	-
2072	-	-	484,049	-	-	-
2073	-	-	469,114	-	-	-
2074	-	-	450,297	-	-	-
2075	-	-	438,626	-	-	-
2076	-	-	424,342	-	-	-
2077	-	-	404,602	-	-	-
2078	-	-	389,050	-	-	-
2079	-	-	371,316	-	-	-
2080	-	-	356,065	-	-	-
2081	-	-	342,870	-	-	-
2082	-	-	321,926	-	-	-
2083	-	-	308,014	-	-	-
2084	-	-	290,285	-	-	-
2085	-	-	275,614	-	-	-
2086	-	-	258,094	-	-	-
2087	-	-	236,597	-	-	-

## 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)
2088	-	-	218,031	-	-	-
2089	-	-	194,953	-	-	-
2090	-	-	176,172	-	-	-
2091	-	-	153,774	-	-	-
2092	-	-	133,066	-	-	-
2093	-	-	112,140	-	-	-
2094	-	-	94,462	-	-	-
2095	-	-	78,306	-	-	-
2096	-	-	64,074	-	-	-
2097	-	-	51,789	-	-	-
2098	-	-	41,205	-	-	-
2099	-	-	32,464	-	-	-
2100	-	-	25,022	-	-	-
2101	-	-	19,085	-	-	-
2102	-	-	14,169	-	-	-
2103	-	-	10,414	-	-	-
2104	-	-	7,391	-	-	-
2105	-	-	5,158	-	-	-
2106	-	-	3,531	-	-	-
2107	-	-	2,378	-	-	-
2108	-	-	1,572	-	-	-
2109	-	-	1,023	-	-	-
2110	-	-	656	-	-	-
2111	-	-	416	-	-	-
2112	-	-	258	-	-	-
2113	-	-	161	-	-	-
2114	-	-	99	-	-	-
2115	-	-	56	-	-	-
2116	-	-	33	-	-	-
2117	-	-	18	-	-	-
2118	-	-	11	-	-	-
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) = 2.26%
2021	1,222,654	318,376	318,376	-	307,786	-	314,837
2022	1,233,684	340,156	340,156	-	307,328	-	328,940
2023	1,182,525	342,055	342,055	-	288,826	-	323,464
2024	1,067,445	357,960	357,960	-	282,482	-	331,022
2025	886,968	379,523	379,523	-	279,905	-	343,204
2026	633,120	418,096	418,096	-	288,181	-	369,728
2027	293,423	470,074	-	470,074	-	407,811	406,504
2028	-	515,209	-	515,209	-	437,304	435,687
2029	-	546,394	-	546,394	-	453,745	451,844
2030	-	577,234	-	577,234	-	468,991	466,796
2031	-	576,164	-	576,164	-	458,000	455,631
2032	-	628,985	-	628,985	-	489,177	486,406
2033	-	663,902	-	663,902	-	505,169	502,059
2034	-	641,701	-	641,701	-	477,718	474,543
2035	-	652,058	-	652,058	-	474,933	471,543
2036	-	688,100	-	688,100	-	490,348	486,608
2037	-	636,092	-	636,092	-	443,485	439,885
2038	-	642,295	-	642,295	-	438,127	434,356
2039	-	678,260	-	678,260	-	452,656	448,539
2040	-	647,645	-	647,645	-	422,879	418,825
2041	-	654,336	-	654,336	-	418,010	413,798
2042	-	696,633	-	696,633	-	435,408	430,808
2043	-	676,807	-	676,807	-	413,870	409,295
2044	-	697,403	-	697,403	-	417,243	412,428
2045	-	736,047	-	736,047	-	430,842	425,659
2046	-	733,443	-	733,443	-	420,035	414,777
2047	-	689,913	-	689,913	-	386,562	381,535
2048	-	692,697	-	692,697	-	379,730	374,607
2049	-	693,095	-	693,095	-	371,733	366,537
2050	-	654,509	-	654,509	-	343,448	338,480
2051	-	687,588	-	687,588	-	353,004	347,726
2052	-	709,446	-	709,446	-	356,351	350,849
2053	-	734,104	-	734,104	-	360,763	355,018

## 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) = 2.26%
2054	-	764,637	-	764,637	-	367,643	361,610
2055	-	795,049	-	795,049	-	374,000	367,681
2056	-	738,489	-	738,489	-	339,882	333,975
2057	-	766,189	-	766,189	-	345,006	338,842
2058	-	777,448	-	777,448	-	342,507	336,221
2059	-	737,212	-	737,212	-	317,758	311,773
2060	-	674,844	-	674,844	-	284,587	279,088
2061	-	657,444	-	657,444	-	271,254	265,882
2062	-	656,972	-	656,972	-	265,199	259,818
2063	-	588,876	-	588,876	-	232,571	227,739
2064	-	576,228	-	576,228	-	222,655	217,922
2065	-	572,850	-	572,850	-	216,563	211,855
2066	-	567,331	-	567,331	-	209,840	205,176
2067	-	554,601	-	554,601	-	200,696	196,139
2068	-	543,246	-	543,246	-	192,336	187,876
2069	-	525,547	-	525,547	-	182,046	177,737
2070	-	513,585	-	513,585	-	174,056	169,852
2071	-	501,569	-	501,569	-	166,309	162,211
2072	-	484,049	-	484,049	-	157,029	153,085
2073	-	469,114	-	469,114	-	148,893	145,082
2074	-	450,297	-	450,297	-	139,831	136,184
2075	-	438,626	-	438,626	-	133,262	129,722
2076	-	424,342	-	424,342	-	126,134	122,723
2077	-	404,602	-	404,602	-	117,666	114,428
2078	-	389,050	-	389,050	-	110,697	107,597
2079	-	371,316	-	371,316	-	103,367	100,423
2080	-	356,065	-	356,065	-	96,978	94,169
2081	-	342,870	-	342,870	-	91,365	88,675
2082	-	321,926	-	321,926	-	83,929	81,418
2083	-	308,014	-	308,014	-	78,566	76,177
2084	-	290,285	-	290,285	-	72,443	70,206
2085	-	275,614	-	275,614	-	67,294	65,184
2086	-	258,094	-	258,094	-	61,654	59,691

## 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) = 2.26%
2087	-	236,597	-	236,597	-	55,297	53,510
2088	-	218,031	-	218,031	-	49,856	48,221
2089	-	194,953	-	194,953	-	43,615	42,164
2090	-	176,172	-	176,172	-	38,561	37,260
2091	-	153,774	-	153,774	-	32,931	31,804
2092	-	133,066	-	133,066	-	27,880	26,912
2093	-	112,140	-	112,140	-	22,987	22,179
2094	-	94,462	-	94,462	-	18,945	18,269
2095	-	78,306	-	78,306	-	15,365	14,810
2096	-	64,074	-	64,074	-	12,301	11,850
2097	-	51,789	-	51,789	-	9,727	9,367
2098	-	41,205	-	41,205	-	7,572	7,288
2099	-	32,464	-	32,464	-	5,837	5,615
2100	-	25,022	-	25,022	-	4,401	4,232
2101	-	19,085	-	19,085	-	3,285	3,156
2102	-	14,169	-	14,169	-	2,386	2,292
2103	-	10,414	-	10,414	-	1,716	1,647
2104	-	7,391	-	7,391	-	1,191	1,143
2105	-	5,158	-	5,158	-	813	780
2106	-	3,531	-	3,531	-	545	522
2107	-	2,378	-	2,378	-	359	344
2108	-	1,572	-	1,572	-	232	222
2109	-	1,023	-	1,023	-	148	141
2110	-	656	-	656	-	93	89
2111	-	416	-	416	-	58	55
2112	-	258	-	258	-	35	33
2113	-	161	-	161	-	21	20
2114	-	99	-	99	-	13	12
2115	-	56	-	56	-	7	7
2116	-	33	-	33	-	4	4
2117	-	18	-	18	-	2	2
2118	-	11	-	11	-	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)										
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2018	-	6.54	-	-	-	-	-	-	-	-	-	-
2019	349,306	6.14	56,890	56,890	56,890	56,890	56,890	56,890	7,966	-	-	-
2020	-	6.14	-	-	-	-	-	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			56,890	56,890	56,890	56,890	56,890	56,890	7,966	-	-	-

Year	Changes of Assumptions	Recognition Period (Years)										
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2018	190,641	6.54	29,150	29,150	29,150	29,150	15,741	-	-	-	-	-
2019	2,331,407	6.14	379,708	379,708	379,708	379,708	379,708	53,159	-	-	-	-
2020	2,733,808	6.14	445,246	445,246	445,246	445,246	445,246	445,246	62,332	-	-	-
Net Increase (Decrease) in OPEB Expense			854,104	854,104	854,104	854,104	840,695	498,405	62,332	-	-	-

Year	Differences between Projected and Actual Earnings on OPEB Plan Investments	Recognition Period (Years)										
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2018	20,436	5	4,087	4,087	4,088	-	-	-	-	-	-	-
2019	26,179	5	5,236	5,236	5,236	5,235	-	-	-	-	-	-
2020	31,614	5	6,323	6,323	6,323	6,323	6,322	-	-	-	-	-
Net Increase (Decrease) in OPEB Expense			15,646	15,646	15,647	11,558	6,322	-	-	-	-	-