



ERIE COUNTY WATER AUTHORITY INTEROFFICE MEMORANDUM

February 12, 2019

To: Jerome D. Schad, Chair
Mark S. Carney, Vice-Chair
E Thomas Jones, Treasurer

From: Karen A. Prendergast, Comptroller *KAP*

Subject: Actuarial Valuation of Other Post-Employment Benefits (OPEB)

The attached report was prepared by Benefit Plans Administrative Services, Inc. (BPAS) in compliance with Government Accounting Standards Board (GASB) Statement 75 — *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions* (OPEB). GASB Statement 75 is effective for fiscal years beginning after June 5, 2017 and replaces GASB Statement 45 which was implemented in 2007.

Both statements require the Authority to account for its commitment to provide health and life insurance to employees in retirement. There are currently 51 retirees and one active employee hired before May 1, 1979 entitled to a life insurance benefit. Health insurance benefits are provided to retirees meeting the eligibility requirements for their position. Benefit eligibility is negotiated with the unions and established by policy for non-represented employees.

Retirement benefits are recognized as they are earned during each year of employment. The Authority's liability in 2007 was valued at \$41,426,643. The actuarially accrued liability had grown to \$99,640,307 by the end of 2017. Under the provisions of Statement 45, the liability could be amortized over a thirty-year period, resulting in a significantly lower financial statement liability in 2017 of \$38,864,242. GASB Statement 75 requires the entire accrued liability, \$89,646,879, be recorded in 2018. A prior period adjustment of \$60,776,065 to the Authority's net position will appear on the 2018 financial statements.

Significant changes from our prior valuation and the impacts of GASB 75 are discussed in Section I of the report. I am also attaching a summary of the items which comprise our year end liability and expense.

cc T. McCracken

Erie County Water Authority
 Postretirement Health Care Benefits Plan
 December 31, 2018

| | |
|---|--------------------|
| Investment Rate of Return | 3.71% |
| Acutarial Accrued Liability (AAL) | |
| Retirees & Dependents | 45,119,031 |
| Active Employees | 54,521,276 |
| Total Acutarial Accrued Liability | 99,640,307 |
| Additional Obligation Attributable to Future Service | 38,432,842 |
| Present Value of Total Future Liability | 138,073,149 |
| OPEB Liability | |
| Balance December 31, 2017 | 38,864,242 |
| Prior year adjustment to recognize full liability | 60,776,065 |
| Balance on January 1, 2018 | 99,640,307 |
| 2018 Valuation Changes | |
| Retiree Health & Life Insurance Payments | (2,234,009) |
| Current Year Service & Interest Cost | 6,751,378 |
| Change in Benefits recongnized currently | 119,294 |
| Deferred inflows/outflows - change of assumptions | (14,821,432) |
| Deferred inflows/outflows - expected vs actual experience | 191,341 |
| OPEB Obligation - December 31, 2018 | 89,646,879 |
| Annual OPEB Expense | |
| Current Year Service Cost | 3,378,431 |
| Current Year Interest Cost | 3,372,947 |
| Amortization of Deferred (Inflows)/Outflows (6.648 yrs) | (2,200,675) |
| Change in Benefit Terms | 119,294 |
| Annual OPEB Expense | 4,669,997 |

Erie County Water Authority

Actuarial Valuation of
Retiree Group Health Benefits
Determined in Accordance with Statement No. 75
of the Governmental Accounting Standards Board
For the Reporting Period January 1, 2018 – December 31, 2018

- Including -

Notes to Financial Statements
Reported as of December 31, 2018

Revised February 2019



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The information contained in this report was prepared for the use of Erie County Water Authority and its auditors in connection with our actuarial valuation. It is not intended or necessarily suitable for other purposes. To avoid misrepresentation, it is intended to be used in its entirety.

Plan Description

The objective of the Governmental Accounting Standards Board (GASB) Accounting Standard No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, is to improve the faithfulness of representations and usefulness of information included in the financial reports of employers regarding other postemployment benefits. The Statement is designed to provide decision-useful information such that the financial report may be used to assess accountability and interperiod equity in a consistent and transparent format. GASB 75 replaces the requirements of Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, as amended, and No. 57, *OPEB Measurements by Agent Employers and Multiple-Employer Plans*.

Postemployment benefits include healthcare benefits, life insurance benefits, and, in some cases, sick pay accrual. These benefits arise from an exchange of salaries and benefits for employee services rendered and constitute part of the compensation for those services. The goal is to measure and recognize the cost of postemployment benefits during the period when employees render the services and to provide relevant information about obligations and the extent to which progress is being made in funding these obligations.

The projection of benefits is based on the types of benefits provided under the substantive plan at the plan's measurement date and on the pattern of cost-sharing between the employer and plan participants. The projections do not explicitly incorporate the potential effects of legal or contractual funding limitations on the pattern of cost-sharing between the employer and plan participants in the future.

Erie County Water Authority administers their Retiree Group Health Benefits Program as a single-employer defined benefit Other Postemployment Benefit plan. The Program provides for continuation of Retiree Group Health Benefits for certain retirees and their spouses and can be amended by action of Erie County Water Authority subject to applicable collective bargaining and employment agreements. Details of the Program design are described in Section VII. The Program does not issue a stand alone financial report as there are no legally segregated assets for the sole purpose of paying benefits under the Program.

Measurement & Reporting Dates

Erie County Water Authority has elected to use no offset in the calculation of the GASB 75 liabilities. The information in this report is based on the following:

Valuation Date: January 1, 2018

Measurement Period: January 1, 2018 – December 31, 2018

Reporting Period: January 1, 2018 – December 31, 2018

The reporting period January 1, 2018 – December 31, 2018 is the first period reflecting GASB 75. A one-time prior-period adjustment of \$60,776,065 must be made to the beginning net position to reflect the transition from GASB 45 to GASB 75 as of January 1, 2018. This is equal to:

- a) The Net OPEB Liability reported as of January 1, 2018 less
- b) The Net OPEB Obligation reported as of December 31, 2017

The impact of the change does not flow through the Annual OPEB Expense calculations.

Summary of Changes From Prior Valuation

Actuarial Assumptions and Methods for the Measurement Period January 1, 2018 – December 31, 2018:

The actuarial cost method has been changed as of January 1, 2018 to the Entry Age Normal Level Percent of Pay method as prescribed under GASB 75. Previously, when the plan was subject to GASB 45, the Projected Unit Credit cost method was utilized. The revised cost method resulted in an increase in the Total OPEB Liability and a decrease in service costs.

The expected rate of compensation increase as of January 1, 2018 was assumed to be 2.50% for purposes of projecting the Total OPEB Liability and Service Cost under the Entry Age Normal Level Percent of Pay cost method.

The rate used to discount future plan cash flows was updated from 5.00% to 3.31% as of January 1, 2018 based on a review of the Fidelity General Obligation 20-Year AA Municipal Bond Index. Previously, the discount rate had been based on the expected rate of return on the employer's general assets under GASB 45. The change in discount rate resulted in an increase in liabilities.

The rate used to discount future plan cash flows was updated from 3.31% to 3.71% as of December 31, 2018 based on a review of the Fidelity General Obligation 20-Year AA Municipal Bond Index. The change in discount rate resulted in a decrease in liabilities.

The annual rate of increase on the thresholds for the excise tax was revised as of January 1, 2018. The thresholds were previously trended by CPI, but now will be trended by Chained CPI resulting in the trend assumption decreasing from 2.25% to 2.00%. This resulted in an increase in liabilities.

The mortality assumption was revised as of January 1, 2018 to the sex-distinct RP-2014 Mortality Tables for employees and healthy annuitants, adjusted backward to 2006 with scale MP-2014, and then adjusted for mortality improvements with scale MP-2017 mortality improvement scale on a generational basis in order to reflect the most recent experience available. The revised assumption resulted in a decrease in liabilities.

The mortality assumption was revised as of December 31, 2018 to the sex-distinct RPH-2014 Mortality Tables for employees and healthy annuitants, adjusted backward to 2006 with scale MP-2014, and then adjusted for mortality improvements with scale MP-2018 mortality improvement scale on a generational basis in order to reflect the most recent experience available. The revised assumption resulted in a decrease in liabilities.

The annual rate of increase in healthcare costs was revised as of December 31, 2018 to better reflect future expectations, including updating long-term rates based on the SOA Long Term Healthcare Cost Trends Model v2019_b (the Getzen model). A review of published National trend survey data in relation to the retiree health plan offerings was the basis for this change. The revised assumption resulted in a decrease in liabilities.

All other actuarial assumptions and methods remain the same as those in the fiscal year 2017 valuation calculated under GASB 45. For more details regarding the information and analysis used in the selection of each assumption, please refer to Section VI.

Plan Provisions for the Measurement Period January 1, 2018 – December 31, 2018:

Due to the structure of the sick pay benefit, it is considered a GASB 16 liability and not a GASB 75 liability. Thus, it was removed from the valuation as of January 1, 2018. This resulted in a decrease in liabilities.

The two-year delay of the “Cadillac tax” (the 40% excise tax on high-cost employer-sponsored group health plans) from 2020 to 2022 was reflected as of January 1, 2018. The tax was previously delayed from 2018 to 2020 and now will be effective in 2022. This resulted in a decrease in liabilities.

As of April 2017 and January 2018, the Authority entered into an agreement with the Deputy Director and Executive Director, respectively, in which no contributions are required in retirement. Previously each individual would have contributed 15%. This resulted in an increase in liabilities.

In June 2018, the Authority voided the contracts for the Deputy Director and Executive Director in which no contributions were required in retirement. The Deputy Director and Executive Director are required to contribute 15% toward the premium cost after the contracts were voided. This resulted in a decrease in liabilities.

As of December 2018, the Authority ratified the collective bargaining agreement with the Brotherhood of WNY Water Workers to amend the plan such that employees who were hired prior to January 1, 1984, are eligible to retire upon the attainment of age 56 and completion of 35 years of service with the Authority. This resulted in an increase in liabilities.

As of December 2018, the Authority ratified the collective bargaining agreement with the Brotherhood of WNY Water Workers to amend the plan such that employees hired prior to July 26, 2012 will not be required to contribute toward the premium cost of the Core Plan upon retirement. Previously, the employees hired prior to November 24, 2011 were not required to contribute toward the premium cost of the Core Plan upon retirement. This resulted in an increase in liabilities.

The voided contracts for the Deputy Director and Executive Director and the eligibility and contribution changes to the Brotherhood of WNY Water Workers described above were measured as a change in benefit terms as of December 31, 2018.

All other Plan provisions remain the same as those in the fiscal year 2017 valuation calculated under GASB 45. For a description of the Plan provisions used in the valuation, please refer to Section VII.

Results

The following exhibit illustrates the Total OPEB Liability, Net OPEB Liability, and the calculation of the Annual OPEB Expense. The Present Value of Projected Future Benefit Payments is illustrated for informational purposes only; it is not required to be disclosed. Please refer to Section VIII for a description of GASB 75 terminology.

All results have been calculated utilizing actuarial assumptions and plan provisions in effect for the plan's measurement period of January 1, 2018 – December 31, 2018. Any plan provision changes ratified or adopted by the Authority after the measurement period will be reflected in future valuations. The results are intended to be utilized for the Erie County Water Authority's reporting period of January 1, 2018 – December 31, 2018.

Erie County Water Authority
Retiree Group Health Benefits Program
Measured Using a Discount Rate of 3.31% as of January 1, 2018
and 3.71% as of December 31, 2018
For the Reporting Period January 1, 2018 – December 31, 2018

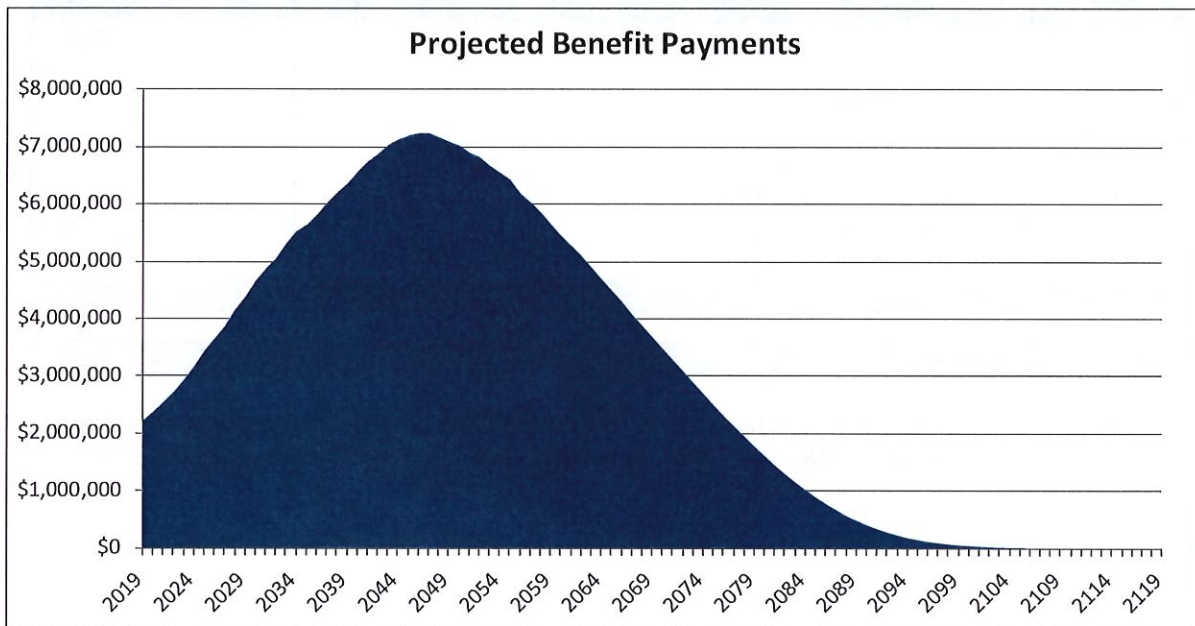
| | ECWA |
|---|----------------------|
| Total OPEB Liability (TOL) | |
| Retirees & Dependents | \$45,119,031 |
| Actives | 54,521,276 |
| Disableds | 0 |
| Total OPEB Liability | \$99,640,307 |
| Additional Obligation attributable to future service | 38,432,842 |
| Present Value of Projected Future Benefit Payments | \$138,073,149 |
| Net OPEB Liability | |
| Total OPEB Liability (TOL) | \$99,640,307 |
| Plan Fiduciary Net Position | N/A |
| Net OPEB Liability | \$99,640,307 |
| Calculation of Annual OPEB Expense | |
| Service Cost | \$3,378,431 |
| Interest Cost | 3,372,947 |
| Projected Earnings on Plan Investments | 0 |
| Change of Benefit Terms | 119,294 |
| Recognition of Deferred (Inflows)/Outflows | |
| • Differences between Expected and Actual Experience | 28,782 |
| • Changes of Assumptions or Other Inputs | (2,229,457) |
| • Differences in Investment Experience | 0 |
| Annual OPEB Expense | \$4,669,997 |
| Actual Benefit Payments | \$2,234,009 |

* The results are based on a valuation date of January 1, 2018 for a measurement period of January 1, 2018 – December 31, 2018. The reporting period is January 1, 2018 – December 31, 2018.

Projection of Future Cash Flows

The table below displays the current fiscal year expected cash flow along with a ten year projection of future cash flows. The graph illustrates all projected future cash flows of the retiree group health benefits program. We assume the plan will continue to be open to new participants, however, the projection of future cash flow is based on a closed group valuation and actuarial assumptions as of December 31, 2018. It does not consider the impact of future new hires.

| Measurement Period | ECWA |
|--------------------|-------------|
| 2019 | \$2,219,566 |
| 2020 | 2,368,476 |
| 2021 | 2,537,018 |
| 2022 | 2,714,700 |
| 2023 | 2,928,064 |
| 2024 | 3,163,099 |
| 2025 | 3,434,534 |
| 2026 | 3,651,836 |
| 2027 | 3,857,167 |
| 2028 | 4,151,177 |



This *revised* valuation has been conducted in accordance with generally accepted actuarial principles and practices. The actuaries involved in this engagement are members of the American Academy of Actuaries and other professional actuarial organizations and meet the “Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States” to render the actuarial opinion outlined herein. *This valuation was revised to reflect the voided contracts for the Deputy Director and Executive Director.*

In preparing the results presented in this report, we have relied upon information provided to us regarding plan provisions, plan participants, and benefit payments. While the scope of our engagement did not call for us to perform an audit or independent verification of this information, we have reviewed this information for reasonableness, but have not audited it. The accuracy of the results is dependent upon the accuracy and completeness of the underlying information which is the responsibility of those who supply the data.

The calculations reported herein have been made on a basis consistent with our understanding of GASB 75. Determinations for purposes other than meeting Erie County Water Authority’s financial accounting requirements may be significantly different from the results reported.

For purposes of determining benefit obligations and costs as of the measurement date, participant data as of January 1, 2018 is used. Benefit obligations are projected to the measurement date using roll forward techniques by assuming no actuarial gains or losses in the interim, except for those assumption changes necessary to reflect the assumptions as of the measurement date.

Section VI of this report provides a summary of the assumptions and methods used in our valuation. These assumptions represent anticipated future experience under the Plan and were selected based on Erie County Water Authority’s expectation with regard to each assumption with the exception of the discount rate, which was selected as discussed in Section VI of this report. We believe the assumptions are reasonable for the purposes for which they are being used.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: retiree group benefits program experience differing from that anticipated by the assumptions; changes in assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in retiree group benefits program provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates, and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements. Due to the limited scope of the engagement, an analysis of the potential range of future measurements was not completed. Results that differ from those shown in this report, within a reasonable range, could also be considered appropriate.

Respectfully submitted,

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Revised February 2019

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SECTION III

DETAILS OF CALCULATIONS

Recognition of Deferred (Inflows)/Outflows: Differences in actual experience and actuarial assumptions are reflected in the deferred (inflows)/outflows. Differences must be amortized over the average expected remaining service period of the active and inactive plan participants.

The calculation of the recognition of (inflows)/outflows for changes occurring during the measurement period January 1, 2018 - December 31, 2018 is detailed below.

| Calculation of Experience Deferred (Inflows)/Outflows | ECWA |
|--|-----------|
| Expected Benefit Payments used to calculate OPEB liability | 2,045,783 |
| Actual Benefit Payments | 2,234,009 |
| Differences due to Experience Changes measured 12/31/2018 adjusted with interest | 191,341 |
| Amortization Period (years) | 6.648 |
| Annual Recognition of new Experience (Inflow)/Outflow | 28,782 |

| Calculation of Assumption Change Deferred (Inflows)/Outflows | ECWA |
|---|--------------|
| Total OPEB Liability (TOL) as of 12/31/2018 prior to Assumption/Input Changes | 104,349,017 |
| Total OPEB Liability (TOL) as of 12/31/2018 after Assumption/Input Changes | 89,527,585 |
| Differences due to Assumptions/Input Changes measured 12/31/2018 | (14,821,432) |
| Amortization Period (years) | 6.648 |
| Annual Recognition of new Assumption/Input (Inflow)/Outflow | (2,229,457) |

Since the plan is not funded, there are no (inflows)/outflows due to differences in investment experience.

For detailed information on each prior amortization base, please see Section X of this report.

Changes in Benefit Terms: A change to the provisions of the retiree group health benefits program is reflected at the first measurement date after adoption and/or ratification. It is shown as a change in benefit terms in the Annual OPEB Expense and is recognized immediately in full.

A summary of the effect of plan changes occurring during the measurement period January 1, 2018 – December 31, 2018 is shown below.

| Calculation of Change in Benefit Terms at December 31, 2018 | Total OPEB Liability (TOL) 12/31/2018 under prior benefit terms | Total OPEB Liability (TOL) 12/31/2018 after change in benefit terms | Change in Liability due to change in Benefit Terms: |
|---|---|---|---|
| Brotherhood of WNY Water Workers, Deputy Director & Executive Director Plan Changes | 89,527,585 | 89,646,879 | 119,294 |

SECTION IV**NOTES TO FINANCIAL STATEMENTS**

Erie County Water Authority
 GASB 75 Notes to Financial Statements
 For the Retiree Group Health Benefits Program
Measured as of December 31, 2018

| Change in Total OPEB Liability (TOL) | ECWA |
|--|---------------------|
| Total OPEB Liability at Beginning of Year | \$99,640,307 |
| Service Cost | 3,378,431 |
| Interest Cost | 3,372,947 |
| Change of Benefit Terms | 119,294 |
| Differences between Expected and Actual Experience | 191,341 |
| Change of assumptions or other inputs | (14,821,432) |
| Actual Benefit Payments | (2,234,009) |
| Total OPEB Liability (TOL) at End of Year | \$89,646,879 |

| Change in Plan Fiduciary Net Position | |
|--|-------------|
| Plan Fiduciary Net Position - beginning of year | \$0 |
| Contributions from the Employer | 2,234,009 |
| Net Investment Income | 0 |
| Actual Benefit Payments | (2,234,009) |
| Administrative Expenses | 0 |
| Plan Fiduciary Net Position - end of year | \$0 |

| Funded Status | |
|---------------------------------|---------------------|
| Total OPEB Liability (TOL) | \$89,646,879 |
| Plan Fiduciary Net Position | 0 |
| Net OPEB Liability (NOL) | \$89,646,879 |

| | |
|--|-----------|
| Plan Fiduciary Net Position as a Percentage of Total OPEB Liability | 0% |
|--|-----------|

SECTION IV

NOTES TO FINANCIAL STATEMENTS

**Erie County Water Authority
 GASB 75 Notes to Financial Statements
 For the Retiree Group Health Benefits Program
 Measured as of December 31, 2018**

| | |
|---|--------------------|
| Annual Covered Employee Payroll | \$16,271,826 |
| Sponsor's Net OPEB Liability as a Percentage of Annual Covered Employee Payroll | 550.93% |
| Annual OPEB Expense | |
| Service Cost | \$3,378,431 |
| Interest Cost | 3,372,947 |
| Projected Earnings on Plan Investments | 0 |
| Change of Benefit Terms | 119,294 |
| Recognition of Deferred (Inflows)/Outflows | |
| • Differences between Expected and Actual Experience | 28,782 |
| • Changes of Assumptions or Other Inputs | (2,229,457) |
| • Differences in Investment Experience | 0 |
| Annual OPEB Expense | \$4,669,997 |

| Actuarial Methods and Assumptions | Total |
|--|------------------|
| Reporting Date | 12/31/2018 |
| Measurement Date | 12/31/2018 |
| Actuarial Valuation Date | 1/1/2018 |
| Discount Rate as of the Measurement Date | 3.71% |
| Rate of Compensation Increase | 2.50% |
| Consumer Price Index (CPI) | 2.25% |
| Inflation Rate (Chained CPI) | 2.00% |
| Actuarial Cost Method | Entry Age Normal |
| Amortization Method | Level Percentage |
| Amortization Period | 6.648 years |
| Method used to determine Actuarial Value of Assets | N/A |

| Total Change in Deferred Outflows of Resources and Deferred Inflows of Resources December 31, 2018 | Deferred Outflows of Resources | Deferred Inflows of Resources |
|--|--------------------------------|-------------------------------|
| Differences between Expected and Actual Experience | \$162,559 | \$0 |
| Change of Assumptions | 0 | 12,591,975 |
| Net difference between projected and actual earnings on OPEB plan investments | 0 | 0 |
| Benefit payments subsequent to the measurement date | 0 | 0 |
| Total | \$162,559 | \$12,591,975 |

Erie County Water Authority
GASB 75 Notes to Financial Statements
For the Retiree Group Health Benefits Program
Measured as of December 31, 2018

| Deferred (Inflows) and Outflows | ECWA |
|---|-----------------------|
| Balance due to Experience as of the Measurement Date: | \$162,559 |
| Projection of Experience (Inflows) and Outflows: Recognition in Expense | |
| Projected FY 2019 | \$28,782 |
| Projected FY 2020 | \$28,782 |
| Projected FY 2021 | \$28,782 |
| Projected FY 2022 | \$28,782 |
| Projected FY 2023 | \$28,782 |
| Projected FY 2024 and Thereafter | \$18,649 |
| Projection of Experience (Inflows) and Outflows: Balance at Reporting Date | |
| Projected FY 2019 | \$133,777 |
| Projected FY 2020 | \$104,995 |
| Projected FY 2021 | \$76,213 |
| Projected FY 2022 | \$47,431 |
| Projected FY 2023 | \$18,649 |
| Projected FY 2024 and Thereafter | N/A |
| Balance due to Assumption Changes as of the Measurement Date: | (\$12,591,975) |
| Projection of Assumption Change (Inflows) and Outflows: Recognition in OPEB Expense | |
| Projected FY 2019 | (\$2,229,457) |
| Projected FY 2020 | (\$2,229,457) |
| Projected FY 2021 | (\$2,229,457) |
| Projected FY 2022 | (\$2,229,457) |
| Projected FY 2023 | (\$2,229,457) |
| Projected FY 2024 and Thereafter | (\$1,444,690) |
| Projection of Assumption Change (Inflows) and Outflows: Balance at Reporting Date | |
| Projected FY 2019 | (\$10,362,518) |
| Projected FY 2020 | (\$8,133,061) |
| Projected FY 2021 | (\$5,903,604) |
| Projected FY 2022 | (\$3,674,147) |
| Projected FY 2023 | (\$1,444,690) |
| Projected FY 2024 and Thereafter | N/A |
| Balance due to Investment Differences as of the Measurement Date: | \$0 |
| Projection of Investment (Inflows) and Outflows: Recognition in OPEB Expense | |
| Projected FY 2019 | \$0 |
| Projected FY 2020 | \$0 |
| Projected FY 2021 | \$0 |
| Projected FY 2022 | \$0 |
| Projected FY 2023 | \$0 |
| Projected FY 2024 and Thereafter | \$0 |
| Projection of Investment (Inflows) and Outflows: Balance at Reporting Date | |
| Projected FY 2019 | \$0 |
| Projected FY 2020 | \$0 |
| Projected FY 2021 | \$0 |
| Projected FY 2022 | \$0 |
| Projected FY 2023 | \$0 |
| Projected FY 2024 and Thereafter | N/A |

SECTION IV

NOTES TO FINANCIAL STATEMENTS

**Erie County Water Authority
 GASB 75 Notes to Financial Statements
 For the Retiree Group Health Benefits Program
 Measured as of December 31, 2018**

| | |
|---|---------------|
| Assumed pre-65 medical trend rates at end of year | |
| Healthcare cost trend rate assumed for next measurement period | 7.000% |
| Rate to which the cost trend rate is assumed to decline (the ultimate trend rate) | 3.784% |
| Measurement period that the rate reaches the ultimate trend rate | 2075 |
| Assumed post-65 medical trend rates at end of year | |
| Healthcare cost trend rate assumed for next measurement period | 6.250% |
| Rate to which the cost trend rate is assumed to decline (the ultimate trend rate) | 3.784% |
| Measurement period that the rate reaches the ultimate trend rate | 2075 |
| Assumed prescription drug trend rates at end of year | |
| Healthcare cost trend rate assumed for next measurement period | 10.000% |
| Rate to which the cost trend rate is assumed to decline (the ultimate trend rate) | 3.784% |
| Measurement period that the rate reaches the ultimate trend rate | 2075 |
| Assumed Medicare Part B trend rates at end of year | |
| Healthcare cost trend rate assumed for next measurement period | 4.600% |
| Rate to which the cost trend rate is assumed to decline (the ultimate trend rate) | 3.784% |
| Measurement period that the rate reaches the ultimate trend rate | 2075 |
| Assumed trend rates for additional benefits at December 31 | |
| Trend for administrative fees per annum | 3.250% |
| Sensitivity to Discount Rate and Healthcare Trend Rate | |
| Discount Rate at Measurement Date | 3.71% |
| Net OPEB Liability (NOL) at Current Discount Rate and Healthcare Trend Rates | \$89,646,879 |
| Net OPEB Liability (NOL) at 1% Decrease in Discount Rate | \$106,545,777 |
| Net OPEB Liability (NOL) at 1% Increase in Discount Rate | \$76,301,598 |
| Net OPEB Liability (NOL) at 1% Decrease in Healthcare Trend Rates | \$72,855,121 |
| Net OPEB Liability (NOL) at 1% Increase in Healthcare Trend Rates | \$112,487,720 |

SECTION V

COMPARISON OF RESULTS & PARTICIPANT SUMMARY

Change in Liability from Measurement Date January 1, 2018 to December 31, 2018

| | January 1, 2018 | December 31, 2018 |
|------------------------|-----------------|-------------------|
| ➤ Measurement Date | | |
| ➤ Total OPEB Liability | \$99,640,307 | \$89,646,879 |

➤ Percent Change

(10.03)%

➤ Reasons for Increase

- Accumulation of interest on Total OPEB Liability
- Accrual of additional benefits for actives
- Plan Amendment to CBA of Brotherhood of WNY Water Workers

➤ Reasons for Decrease

- Benefit payments made to current retirees
- Revised discount rate from 3.31% to 3.71%.
- Revised healthcare trend rates
- Updated mortality improvement scale from MP-2017 to MP-2018
- Updated mortality base table from amount-weighted RP-2014 to headcount-weighted RPH-2014
- Contracts voided for Executive Director and Deputy Director

SECTION V COMPARISON OF RESULTS & PARTICIPANT SUMMARY

Reconciliation of Plan Participants

Participant data was provided by Erie County Water Authority. We reviewed the data for reasonableness, but did not independently verify or audit it. The participant data was reconciled with information received in conjunction with prior actuarial studies. In the event that significant changes or discrepancies were found, they were discussed with Erie County Water Authority. In some circumstances routine corrections or modifications were made, in part by referencing other source documents. No material defects are believed to exist in the data. A reconciliation of the participant data is detailed below:

| | Reconciliation of Plan Participant Data | | | | |
|------------------------------------|---|-----------|-----------|-----------|-------|
| | Active Employees | Retirees* | Survivors | Disableds | Total |
| Total as of January 1, 2016 | 227 | 154 | 23 | 0 | 404 |
| New entrants | 30 | 0 | 0 | 0 | 30 |
| New surviving spouses | 0 | 0 | 6 | 0 | 6 |
| Terminations | (13) | (17) | (2) | 0 | (32) |
| Retirements | (17) | 17 | 0 | 0 | 0 |
| Disabilities | 0 | 0 | 0 | 0 | 0 |
| Data adjustments | 0 | 0 | 0 | 0 | 0 |
| Total as of January 1, 2018 | 227 | 154 | 27 | 0 | 408 |

* As of January 1, 2018 there are 101 spouses of current retirees covered under the retiree's medical plan, compared to 99 spouses as of January 1, 2016.

As of January 1, 2018, 90 retirees have only medical benefits, 5 retirees are being reimbursed for waiving healthcare coverage, 3 retirees have only life insurance benefits, and 56 retirees have both medical and life insurance benefits.

SECTION V COMPARISON OF RESULTS & PARTICIPANT SUMMARY

Summary of Active Plan Participants

| Age | Years of Service | | | | | | | Total |
|--------------|------------------|-----------|-----------|-----------|-----------|-----------|----------|------------|
| | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30+ | |
| Under 25 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 25-29 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 8 |
| 30-34 | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 13 |
| 35-39 | 13 | 9 | 3 | 1 | 0 | 0 | 0 | 26 |
| 40-44 | 7 | 3 | 4 | 2 | 0 | 0 | 0 | 16 |
| 45-49 | 7 | 8 | 6 | 3 | 3 | 1 | 0 | 28 |
| 50-54 | 7 | 8 | 9 | 6 | 6 | 8 | 0 | 44 |
| 55-59 | 7 | 6 | 7 | 5 | 10 | 9 | 4 | 48 |
| 60-64 | 5 | 4 | 7 | 1 | 8 | 6 | 3 | 34 |
| 65 and over | 3 | 0 | 2 | 2 | 1 | 0 | 0 | 8 |
| Total | 66 | 44 | 38 | 20 | 28 | 24 | 7 | 227 |

| | |
|--------------------------|------|
| Average age | 49.7 |
| Average years of service | 12.6 |

Summary of Inactive Plan Participants

| Age | Inactive Participants | | | Total |
|--------------|-----------------------|-----------------------------------|-----------|------------|
| | Retirees | Survivors and Spouses of Retirees | Disableds | |
| Under 55 | 0 | 1 | 0 | 1 |
| 55-59 | 2 | 8 | 0 | 10 |
| 60-64 | 37 | 31 | 0 | 68 |
| 65-69 | 38 | 25 | 0 | 63 |
| 70-74 | 35 | 33 | 0 | 68 |
| 75-79 | 20 | 5 | 0 | 25 |
| 80-84 | 10 | 12 | 0 | 22 |
| 85 and over | 12 | 13 | 0 | 25 |
| Total | 154 | 128 | 0 | 282 |

The valuation of retiree group health benefits involves estimates and assumptions about the probability of events occurring far into the future. Examples include assumptions about future employment, mortality, and the healthcare cost trend. Calculations are based on the types of benefits provided under the terms of the substantive plan at the time of the valuation and on the pattern of cost sharing between the employer and plan members. Calculations reflect a long-term perspective, so methods and assumptions used include techniques that are designed to reduce short-term volatility. Below is a description of the actuarial assumptions and methodology used in the actuarial valuation.

Valuation Date: January 1, 2018

Measurement Period: January 1, 2018 - December 31, 2018

Reporting Period: January 1, 2018 - December 31, 2018

Actuarial Cost Method: Entry Age Normal

Amortization Method: Level Percent of Pay

Discount Rate: 3.31% as of January 1, 2018 measurement
3.71% as of December 31, 2018 measurement

An analysis of returns on the Fidelity General Obligation 20-Year AA Municipal Bond Index as of December 31, 2017 and December 31, 2018 yielded discount rates of 3.31% and 3.71%, respectively. In our opinion, the plan sponsor's selection of 3.31% and 3.71% is not unreasonable given the Fidelity Index yields.

Rate of Compensation Increase: Salaries are assumed to increase at 2.50% per year. The salary scale was based on the Authority's review of historical experience as well as future expectations.

Mortality:

As of January 1, 2018: The sex-distinct RP-2014 Mortality Tables for employees and healthy annuitants, adjusted backward to 2006 with Scale MP-2014, and then adjusted for mortality improvements with Scale MP-2017 mortality improvement scale on a fully generational basis. This assumption was based on a review of published mortality tables and the demographics and industry of the Plan.

As of December 31, 2018: The sex-distinct RPH-2014 Mortality Tables for employees and healthy annuitants, adjusted backward to 2006 with Scale MP-2014, and then adjusted for mortality improvements with Scale MP-2018 mortality improvement scale on a fully generational basis. This assumption was based on a review of published mortality tables and the demographics and industry of the Plan.

Disability: Rates of decrement due to disability are assumed to be 0%.

Turnover: Rates of turnover are based on the experience under the New York State Employees' Retirement System (ERS). The ERS rates are based on the April 1, 2010 to March 31, 2015 experience study released by the Retirement Systems Actuary and published in their August 2015 report. Erie County Water Authority's experience is not expected to deviate significantly from the experience of the Retirement System as a whole. We have relied on the Retirement System rates, but were unable to assess reasonableness as an independent examination of the underlying experience would require a substantial amount of additional work beyond the scope of this valuation. Please refer to Section IX for these tables.

Retirement Incidence: Rates of retirement are based on the experience under the New York State Employees' Retirement System (ERS). The ERS rates are based on the April 1, 2010 to March 31, 2015 experience study released by the Retirement Systems Actuary and published in their August 2015 report. Erie County's Water Authority's experience is not expected to deviate significantly from the experience of the Retirement System as a whole. We have relied on the Retirement System rates, but were unable to assess reasonableness as an independent examination of the underlying experience would require a substantial amount of additional work beyond the scope of this valuation. Please refer to Section IX for these tables.

Election Percentage: Future retirees were assumed to elect coverage in medical plans at the following rates:

| | Medical Plan | % of Retirees Electing Coverage |
|---------|---------------------------------------|---------------------------------|
| Pre-65 | Core POS 203 | 97% |
| | Waiver | 3% |
| Post-65 | Encompass 65 HMO (formerly 401 & 402) | 70% |
| | Passport PPO (formerly PPO 201) | 30% |
| | Traditional Blue PPO 812 | 0% |

Current retirees under age 65 are assumed to elect the post-65 coverage according to the chart above. Current retirees over age 65 were assumed to continue participation in their current plans.

SECTION VI**ASSUMPTIONS & METHODOLOGY**

A weighted average of the plan elections based on Erie County Water Authority's actual retiree participation was the basis for the plan elections for future retirees. However, no future retirees were assumed to enter the Traditional Blue PPO 812 Plan as the Traditional Blue PPO 812 Plan will require employee contributions for retirees enrolling after June 1, 2004.

Spousal Coverage: 80% of future retirees are assumed to elect spousal coverage upon retirement, with male spouses assumed to be three years older and female spouses assumed to be three years younger than the retiree. This assumption was determined based on valuation data from January 1, 2010 through January 1, 2018. Future experience is not expected to deviate significantly from these results.

Per Capita Costs: All retiree health plans are offered through Labor Management Healthcare Fund (LMHF). Erie County Water Authority's retiree population is not large enough for the group's claims experience to be considered sufficiently credible. Therefore, actual claims experience from LMHF was used to develop retiree claim costs for ECWA. We used the Society of Actuaries Study "Health Care Costs – From Birth to Death" to apply mathematical smoothing techniques and develop reasonable assumptions for estimating age-specific retiree costs.

The Core POS 203 Plan and the Traditional Blue PPO 812 (OT06) Plan are experience-rated health care plans. The following table presents the average expected medical costs per capita for fiscal year 2018:

| Pre65 203/812, Post65 203/812 Medical Only | | |
|---|---------|---------|
| Incurred Annual Claim Cost Per Retiree or Dependent | | |
| Age | Male | Female |
| 55-59 | \$5,748 | \$6,051 |
| 60-64 | \$7,369 | \$7,206 |
| 65-69 | \$5,406 | \$4,901 |
| 70-74 | \$5,597 | \$5,079 |
| 75-79 | \$5,996 | \$5,615 |
| 80-84 | \$6,544 | \$6,172 |
| 85-89 | \$7,183 | \$6,690 |
| 90-94 | \$7,681 | \$7,043 |
| 95-99 | \$7,831 | \$6,362 |

SECTION VI**ASSUMPTIONS & METHODOLOGY**

The Prescription Drug portion of the Core POS 203 Plan and the Traditional Blue PPO 812 Plan (OT06) are experience-rated. The following presents the average expected prescription drug per capital claim cost for fiscal year 2018:

| Pre-65 Prescription Drug Plan 203 | | |
|--|-------------|---------------|
| Incurred Annual Claim Cost Per Retiree or Dependent | | |
| Age | Male | Female |
| 55-59 | \$2,603 | \$2,782 |
| 60-64 | \$3,239 | \$3,358 |

| PPO 203/812 Prescription Drug Plan | | |
|--|-------------|---------------|
| Incurred Annual Claim Cost Per Retiree or Dependent | | |
| Age | Male | Female |
| 65-69 | \$3,525 | \$3,479 |
| 70-74 | \$4,209 | \$4,117 |
| 75-79 | \$4,507 | \$4,367 |
| 80-84 | \$4,476 | \$4,342 |
| 85-89 | \$3,993 | \$4,044 |
| 90-94 | \$3,482 | \$3,696 |
| 95-99 | \$3,118 | \$3,421 |

The medical portions of the Encompass 65 HMO and Passport PPO Plans are experienced-rated Medicare Advantage health care plans that are available to all Medicare-eligible retirees, dependents and surviving spouses. To develop baseline cost assumptions for the Independent Health Encompass 65 HMO and Independent Health Passport PPO, the actual premiums for calendar year 2018 was age-adjusted using average ages of 71 and 76 for medical and 71, and 76 for prescription drug, respectively. We used the Society of Actuaries Study "Health Care Costs – From Birth to Death" to apply mathematical smoothing techniques and develop assumptions for estimating age-specific retiree costs.

The following tables present the average expected medical costs, excluding administrative fees, per capita for the Encompass 65 HMO and Passport PPO Plans for fiscal year 2018:

| Independent Health's LMHF Passport PPO (formerly MA 201) | | |
|---|-------------|---------------|
| Incurred Annual Claim Cost Per Retiree or Dependent | | |
| Age | Male | Female |
| 65-69 | \$2,249 | \$2,179 |
| 70-74 | \$2,720 | \$2,590 |
| 75-79 | \$3,306 | \$3,089 |
| 80-84 | \$3,949 | \$3,674 |
| 85-89 | \$4,603 | \$4,283 |
| 90-94 | \$5,218 | \$4,749 |
| 95-99 | \$5,647 | \$4,638 |

SECTION VI

ASSUMPTIONS & METHODOLOGY

| Independent Health's LMHF Encompass 65 HMO | | |
|---|---------|---------|
| Incurred Annual Claim Cost Per Retiree or Dependent | | |
| Age | Male | Female |
| 65-69 | \$1,877 | \$1,819 |
| 70-74 | \$2,270 | \$2,162 |
| 75-79 | \$2,760 | \$2,579 |
| 80-84 | \$3,296 | \$3,066 |
| 85-89 | \$3,842 | \$3,575 |
| 90-94 | \$4,355 | \$3,964 |
| 95-99 | \$4,713 | \$3,872 |

The Prescription Drug portion of the Encompass 65 HMO and Passport PPO Plans are experience-rated provided via an Employee Group Waiver Plan (EGWP). The expected EGWP subsidies were reflected in the development of the average expected prescription drug costs.

The following table presents the average expected prescription drug per capita claim cost for fiscal year 2018:

| Independent Health's LMHF Passport PPO (formerly MA 201) | | |
|--|---------|---------|
| Incurred Annual Claim Cost Per Retiree or Dependent | | |
| Age | Male | Female |
| 65-69 | \$2,309 | \$2,279 |
| 70-74 | \$2,757 | \$2,697 |
| 75-79 | \$2,952 | \$2,861 |
| 80-84 | \$2,932 | \$2,844 |
| 85-89 | \$2,615 | \$2,649 |
| 90-94 | \$2,281 | \$2,421 |
| 95-99 | \$2,042 | \$2,241 |

| Independent Health's LMHF Encompass 65 HMO | | |
|---|---------|---------|
| Incurred Annual Claim Cost Per Retiree or Dependent | | |
| Age | Male | Female |
| 65-69 | \$3,332 | \$3,288 |
| 70-74 | \$3,979 | \$3,892 |
| 75-79 | \$4,260 | \$4,128 |
| 80-84 | \$4,231 | \$4,104 |
| 85-89 | \$3,774 | \$3,822 |
| 90-94 | \$3,291 | \$3,493 |
| 95-99 | \$2,947 | \$3,234 |

Administrative costs for the 2018 plan year were expected to be \$805.62 annually per contract for non-Medicare Advantage plans. Administrative costs for retirees participating in Medicare Advantage plans were assumed to be \$66.84 annually per contract.

SECTION VI**ASSUMPTIONS & METHODOLOGY****Annual Rate of Increase in Healthcare Costs:**

As of January 1, 2018: The assumed rates of increase in healthcare costs are presented in the table below:

| Year | Pre-65 Medical | Post-65 Medical | Post-65 Medicare Advantage | Prescription Drug |
|-------|----------------|-----------------|----------------------------|-------------------|
| 2018 | 7.000% | 6.250% | 5.000% | 10.000% |
| 2019 | 7.000% | 6.000% | 5.000% | 10.000% |
| 2020 | 6.750% | 5.750% | 4.750% | 10.000% |
| 2021 | 6.500% | 5.500% | 4.500% | 10.000% |
| 2022 | 6.237% | 5.404% | 4.500% | 9.154% |
| 2023 | 5.975% | 5.308% | 4.500% | 8.308% |
| 2024 | 5.712% | 5.212% | 4.500% | 7.462% |
| 2025 | 5.450% | 5.117% | 4.500% | 6.617% |
| 2035 | 4.925% | 4.925% | 4.500% | 4.925% |
| 2045 | 4.706% | 4.706% | 4.500% | 4.706% |
| 2055 | 4.562% | 4.562% | 4.500% | 4.562% |
| 2065 | 4.469% | 4.469% | 4.469% | 4.469% |
| 2075+ | 3.886% | 3.886% | 3.886% | 3.886% |

The annual rate of increase in healthcare costs developed based on a review of published National trend survey data in relation to the retiree health plan offerings and updated long-term rates based on the Society of Actuaries Long Term Healthcare Cost Trends Model v2018_c (the Getzen model), as well as Labor Management Healthcare Fund's expectations.

Administrative fees were assumed to increase at 3.25% per year.

SECTION VI**ASSUMPTIONS & METHODOLOGY**

As of December 31, 2018: The assumed rates of increase in healthcare costs are presented in the table below:

| Measurement Period Ending | Pre-65 Medical | Post-65 Medical | Post-65 Medicare Advantage | Prescription Drug |
|---------------------------|----------------|-----------------|----------------------------|-------------------|
| 2019 | 7.000% | 5.000% | 5.000% | 9.500% |
| 2020 | 6.750% | 4.750% | 4.750% | 9.000% |
| 2021 | 6.500% | 4.500% | 4.500% | 8.500% |
| 2022 | 6.250% | 4.250% | 4.250% | 8.250% |
| 2023 | 6.012% | 4.250% | 4.250% | 7.679% |
| 2024 | 5.774% | 4.250% | 4.250% | 7.107% |
| 2025 | 5.536% | 4.250% | 4.250% | 6.536% |
| 2035 | 4.822% | 4.250% | 4.250% | 4.822% |
| 2045 | 4.575% | 4.250% | 4.250% | 4.575% |
| 2055 | 4.444% | 4.250% | 4.250% | 4.444% |
| 2065 | 4.242% | 4.242% | 4.242% | 4.242% |
| 2075+ | 3.784% | 3.784% | 3.784% | 3.784% |

The annual rate of increase in healthcare costs developed based on a review of published National trend survey data in relation to the retiree health plan offerings and updated long-term rates based on the Society of Actuaries Long Term Healthcare Cost Trends Model v2019_b (the Getzen model).

Administrative fees were assumed to increase at 3.25% per year.

Annual Rate of Increase in the Consumer Price Index: CPI of 2.25% was assumed for purposes of developing the rate of increase in healthcare costs. C-CPI of 2.00% was assumed for purposes of determining future increases in limits corresponding to the excise tax of the Affordable Care Act on high cost employer-sponsored health plans. These assumptions are consistent with historical CPI and Chained CPI data as well as future expectations.

Plan Eligibility: Eligibility for retiree group health benefits is as follows:

| Employee Group | Eligibility for Retiree Health Benefits | |
|--|--|------------------|
| | Age | Years of Service |
| CSEA Hired before 1/1/2008 | 55 | 10 |
| CSEA Hired on or after 1/1/2008 | 58 | 15 |
| NON REP | 55 | 15 |
| NON REP | Rule of 70 with minimum of 10 years of service | |
| Brotherhood of WNY Water Workers Hired before 1/1/1984 (Effective December 2018) | 56 | 35 |
| Brotherhood of WNY Water Workers Hired after 1/1/1984 and before 1/1/2006 | 58 | 15 |
| Brotherhood of WNY Water Workers Hired on or after 1/1/2006 | 58 | 20 |

Duration of Coverage: Retiree benefits continue for the life of the retiree. Spousal benefits continue for the life of the spouse.

Surviving Spouse Coverage: Surviving spouses are permitted to continue coverage after the death of the retiree, but are responsible for continuing to pay the same percentage of the premium that they paid while their spouse was alive.

Retiree Contributions: Annual contributions are as follows:

| Employee Group | Coverage Level | Required Retiree Contribution |
|---|----------------|-------------------------------|
| CSEA Hired on or before 7/26/2012 | Single | 0% of premium |
| | Dual | 0% of premium |
| CSEA Hired after 7/26/2012 | Single | 15% of premium |
| | Dual | 15% of premium |
| Brotherhood of WNY Water Workers Hired on or before 7/26/2012* | Single | 0% of premium |
| | Dual | 0% of premium |
| Brotherhood of WNY Water Workers Hired after 7/26/2012* | Single | 15% of premium |
| | Dual | 15% of premium |
| Non-Represented Retired on or before 3/31/2012 | Single | 0% of premium |
| | Dual | 0% of premium |
| Non-Represented Retired after 3/31/2012** | Single | 15% of premium |
| | Dual | 15% of premium |

* Prior to the ratification of the Brotherhood of WNY Water Workers collective bargaining contract, this date was November 24, 2011.

** As of April 2017 and January 2018, the Authority entered into an agreement with the Deputy Director and Executive Director, respectively, in which no contributions are required in retirement. Previously each individual would have contributed 15%. In June 2018, the Authority voided these contracts for the Deputy Director and Executive Director. The Deputy Director and Executive Director are required to contribute 15% toward the premium cost after the contracts were voided.

New retirees enrolling in the Traditional Blue PPO 812 plan after June 1, 2004 will be required to pay contributions equal to the difference between the Traditional Blue PPO 812 plan premium and the highest premium of any other plan offered to that retiree.

Medicare Part B: Medicare Part B premiums are not reimbursed for post-65 retirees, dependents, and surviving spouses.

Healthcare Benefits: Retiree healthcare benefits are provided through Labor Management Healthcare Fund. The main features of the plans are detailed below.

The Core POS 203 Plan and the Traditional Blue PPO 812 (OT06) Plan are self-insured healthcare plans.

The Encompass 65 HMO (formerly 401 & 402) and the Passport PPO (formerly 201) are self-insured prescription drug EGWP plans.

SECTION VII

PLAN PROVISIONS

Monthly premiums for the plan year from January 1, 2018 through December 31, 2018 are presented in the following table:

| Tier | Core POS 203 | Traditional Blue PPO 812 (OT06) |
|----------------|--------------|---------------------------------|
| Pre-65 | | |
| Single | \$ 748.80 | N/A |
| 2-Person | 1,635.12 | N/A |
| Post-65 | | |
| Single | N/A | \$1,055.90 |
| 2-Person | N/A | \$2,089.91 |

The monthly Medicare Advantage and EGWP premiums for the plan year from January 1, 2018 through December 31, 2018 are presented in the following table.

| Tier | Independent Health's Passport PPO | Independent Health's Encompass 65 HMO |
|-----------------|-----------------------------------|---|
| Post-65 | Formerly Forever Blue 201 | Formerly Senior Blue 401 & 402 |
| Medical Portion | \$262.78 | \$183.47 |
| Drug Portion | \$238.97 | \$320.81 |
| Single Total | \$501.75 | \$504.28 |

Medical Waiver Benefit: Retirees under the following employee groups are eligible to waive medical coverage and receive an annual amount equal to the percentage of the active Core POS203 Plan premium. Health insurance waivers are offered to all employees eligible for health insurance benefits at retirement until they are Medicare eligible.

| Employee Group | % of Active Core POS 203 Premium | Annual Waiver Amount* | |
|----------------------------------|----------------------------------|-----------------------|-------------|
| | | Single | Family |
| CSEA | 35% | \$3,063.19 | \$8,647.51 |
| Brotherhood of WNY Water Workers | 40% | \$3,500.78 | \$9,882.86 |
| Non-Represented | 55% | \$4,091.54 | \$11,550.60 |

*The maximum waiver is limited to the highest cost product available to the retiree.

Life Insurance Benefits: Life insurance benefits are offered to current participants hired prior to May 1, 1979. Upon retirement, life insurance benefits are equal to 50% of the life insurance benefit offered while actively employed, where active employee benefit amounts vary for each individual. Retirees are not required to contribute towards life insurance benefits.

Healthcare Reform: The Affordable Care Act has a financial impact on employers who sponsor retiree group health benefits and therefore certain provisions are reflected in the GASB 75 valuation. The excise tax is reflected starting in 2022. The excise tax is 40% of the excess amount the plan’s healthcare cost exceeds limits as defined in the legislation. The 2018 limits are detailed below and are scheduled to increase with the Chained Consumer Price Index (C-CPI) plus 1% for calendar years beginning before 2020 and with C-CPI for all years thereafter.

| | Active/Retiree | Qualified Retiree* |
|--------|----------------|--------------------|
| Single | \$10,200 | \$11,850 |
| Family | \$27,500 | \$30,950 |

* A qualified retiree is receiving coverage by reason of being a retiree, is over age 55, and not entitled to benefits or eligible for enrollment under the Medicare program.

SUMMARY OF GASB 75

GASB 75 Statement

The Governmental Accounting Standards Board (GASB) Accounting Standard No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, covers postemployment benefits including healthcare benefits, life insurance benefits, and, in some cases, sick pay accrual. GASB 75 requires employers to recognize these benefits on an accrual basis rather than pay-as-you-go.

Effective Date

Statement 75 is effective for fiscal years beginning after June 15, 2017.

Valuation Frequency

For financial reporting purposes, a full actuarial valuation should be performed biennially. Interim valuations, or roll-forwards, may be performed in years in which a full valuation is not required.

The Total OPEB Liability is required to be measured as of a date no earlier than the end of the employer's prior fiscal year and no later than the end of the employer's current fiscal year (the measurement date), consistently applied from period to period.

GASB 75 Terminology:

Present Value of Projected Future Benefit Payments – The present value of projected future benefit payments represent the total future benefits expected to be paid to current and future retirees as a result of their service through the valuation date as well as any expected future service. The present value of total future liability is 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.

Total OPEB Liability (TOL) - The TOL is the actuarial present value of projected benefit payments based on employees' service rendered to the measurement date in conformity with the requirements of the GASB 75 Statement.

Retirees & Dependents – former employees who have satisfied the age and service requirement and are currently receiving retiree group health benefits.

Actives– active employees who may become eligible for retiree group health benefits upon satisfying the age and service requirements.

Net OPEB Liability (NOL) - The excess of the Total OPEB Liability over the Fiduciary Net Position. For an unfunded plan, the NOL is equal to the TOL.

Fiduciary Net Position – The market value of plan assets held in a trust that meets the criteria in paragraph 4 of the GASB 75 statement.

Annual OPEB Expense – An accrual-basis measure of the periodic cost of an employer’s participation in a defined benefit OPEB plan. The Annual OPEB Expense is recorded as an expense and disclosed on the government-wide financial statement. It is the sum of the service cost, interest cost, projected earnings on assets, differences in Total OPEB Liability due to changes in benefit terms, and the recognition of deferred (inflows)/outflows for the year.

Service Cost – The present value of future benefits earned by employees during the current fiscal year.

Interest Cost – The increase in the liability attributable to the passage of time.

Deferred (Inflows)/Outflows – Differences between actual and expected experience, changes in demographic or economic assumptions, and differences between actual and expected investment experience to be recognized as OPEB Expense over time. Differences between actual and expected experience and changes in demographic or economic assumptions are amortized over the average expected remaining service period of active and inactive plan participants. Differences between actual and expected investment experience are amortized over a closed period of five years.

REFERENCED TABLES

Turnover

New York State Employees' Retirement System (ERS) Turnover Rates

| Age | Tiers 1, 2, 3 & 4 | | | | | |
|-----|-------------------|---------|---------|---------|-----------|-----------|
| | <2 Years | 2 Years | 3 Years | 4 Years | 5-9 Years | 10+ Years |
| <20 | 22.274% | 12.199% | 7.434% | 6.342% | 4.272% | 1.499% |
| 20 | 22.262% | 12.199% | 7.434% | 6.342% | 4.272% | 1.499% |
| 21 | 22.051% | 12.199% | 7.434% | 6.342% | 4.272% | 1.499% |
| 22 | 21.636% | 12.199% | 7.434% | 6.342% | 4.272% | 1.499% |
| 23 | 20.992% | 12.823% | 8.624% | 6.710% | 4.359% | 1.499% |
| 24 | 20.100% | 13.253% | 9.388% | 6.990% | 4.411% | 1.499% |
| 25 | 18.987% | 13.535% | 9.777% | 7.170% | 4.428% | 1.499% |
| 26 | 17.763% | 13.684% | 9.923% | 7.269% | 4.416% | 1.499% |
| 27 | 16.609% | 13.679% | 9.951% | 7.323% | 4.383% | 1.499% |
| 28 | 15.693% | 13.496% | 9.933% | 7.362% | 4.338% | 1.499% |
| 29 | 15.076% | 13.132% | 9.891% | 7.400% | 4.292% | 1.511% |
| 30 | 14.703% | 12.622% | 9.824% | 7.426% | 4.255% | 1.546% |
| 31 | 14.473% | 12.042% | 9.719% | 7.416% | 4.233% | 1.605% |
| 32 | 14.302% | 11.490% | 9.571% | 7.343% | 4.236% | 1.686% |
| 33 | 14.160% | 11.044% | 9.377% | 7.186% | 4.262% | 1.777% |
| 34 | 14.042% | 10.723% | 9.136% | 6.947% | 4.303% | 1.860% |
| 35 | 13.943% | 10.492% | 8.847% | 6.648% | 4.343% | 1.915% |
| 36 | 13.844% | 10.291% | 8.510% | 6.329% | 4.357% | 1.931% |
| 37 | 13.713% | 10.069% | 8.136% | 6.035% | 4.325% | 1.903% |
| 38 | 13.534% | 9.812% | 7.746% | 5.799% | 4.240% | 1.839% |
| 39 | 13.312% | 9.535% | 7.367% | 5.630% | 4.114% | 1.757% |
| 40 | 13.076% | 9.264% | 7.027% | 5.517% | 3.968% | 1.678% |
| 41 | 12.858% | 9.020% | 6.746% | 5.442% | 3.830% | 1.617% |
| 42 | 12.673% | 8.805% | 6.532% | 5.386% | 3.720% | 1.581% |
| 43 | 12.526% | 8.616% | 6.384% | 5.341% | 3.641% | 1.570% |
| 44 | 12.415% | 8.447% | 6.290% | 5.304% | 3.589% | 1.571% |
| 45 | 12.339% | 8.293% | 6.233% | 5.270% | 3.550% | 1.570% |
| 46 | 12.302% | 8.159% | 6.197% | 5.234% | 3.508% | 1.549% |
| 47 | 12.315% | 8.045% | 6.169% | 5.187% | 3.454% | 1.504% |
| 48 | 12.382% | 7.950% | 6.144% | 5.125% | 3.385% | 1.438% |
| 49 | 12.495% | 7.875% | 6.123% | 5.049% | 3.306% | 1.365% |
| 50 | 12.633% | 7.817% | 6.109% | 4.974% | 3.230% | 1.300% |
| 51 | 12.763% | 7.775% | 6.109% | 4.914% | 3.168% | 1.252% |
| 52 | 12.851% | 7.748% | 6.126% | 4.888% | 3.137% | 1.221% |
| 53 | 12.876% | 7.737% | 6.166% | 4.903% | 3.149% | 1.204% |
| 54 | 12.840% | 7.744% | 6.227% | 4.960% | 3.201% | 1.195% |
| 55 | 12.770% | 7.780% | 6.314% | 5.050% | 3.266% | 1.191% |
| 56 | 12.709% | 7.866% | 6.431% | 5.161% | 3.282% | 1.189% |
| 57 | 12.710% | 8.028% | 6.586% | 5.281% | 3.195% | 1.189% |
| 58 | 12.823% | 8.294% | 6.786% | 5.403% | 2.988% | 1.189% |
| 59 | 13.078% | 8.687% | 7.036% | 5.527% | 2.684% | 1.189% |
| 60 | 13.475% | 9.210% | 7.338% | 5.656% | 2.335% | 1.189% |
| 61 | 13.967% | 9.846% | 7.678% | 5.789% | 2.024% | 1.189% |
| 62 | 14.456% | 10.532% | 8.029% | 5.916% | 1.857% | 1.189% |
| 63 | 14.790% | 10.532% | 8.029% | 5.916% | 1.857% | 1.189% |
| 64 | 14.790% | 10.532% | 8.029% | 5.916% | 1.857% | 1.189% |
| 65 | 14.790% | 10.532% | 8.029% | 5.916% | 1.857% | 1.189% |
| 66 | 14.790% | 10.532% | 8.029% | 5.916% | 1.857% | 1.189% |
| 67 | 14.790% | 10.532% | 8.029% | 5.916% | 1.857% | 1.189% |
| 68 | 14.790% | 10.532% | 8.029% | 5.916% | 1.857% | 1.189% |
| 69 | 14.790% | 10.532% | 8.029% | 5.916% | 1.857% | 1.189% |
| 70+ | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% |

* The rates above are based on the April 1, 2010 to March 31, 2015 experience study released by the Retirement Systems Actuary and published in their August 2015 report.

SECTION IX

REFERENCED TABLES

New York State Employees' Retirement System (ERS) Turnover Rates

| Age | Tiers 5 & 6 | | | | | |
|-----|-------------|---------|---------|---------|-----------|-----------|
| | <2 Years | 2 Years | 3 Years | 4 Years | 5-9 Years | 10+ Years |
| <20 | 22.274% | 12.199% | 7.434% | 6.342% | 2.585% | 2.975% |
| 20 | 22.262% | 12.199% | 7.434% | 6.342% | 2.585% | 2.975% |
| 21 | 22.051% | 12.199% | 7.434% | 6.342% | 2.585% | 2.975% |
| 22 | 21.636% | 12.199% | 7.434% | 6.342% | 2.585% | 2.975% |
| 23 | 20.992% | 12.823% | 8.624% | 6.710% | 2.638% | 2.975% |
| 24 | 20.100% | 13.253% | 9.388% | 6.990% | 2.670% | 2.975% |
| 25 | 18.987% | 13.535% | 9.777% | 7.170% | 2.680% | 2.975% |
| 26 | 17.763% | 13.684% | 9.923% | 7.269% | 2.673% | 2.975% |
| 27 | 16.609% | 13.679% | 9.951% | 7.323% | 2.653% | 2.975% |
| 28 | 15.693% | 13.496% | 9.933% | 7.362% | 2.625% | 2.975% |
| 29 | 15.076% | 13.132% | 9.891% | 7.400% | 2.597% | 3.000% |
| 30 | 14.703% | 12.622% | 9.824% | 7.426% | 2.575% | 3.068% |
| 31 | 14.473% | 12.042% | 9.719% | 7.416% | 2.562% | 3.184% |
| 32 | 14.302% | 11.490% | 9.571% | 7.343% | 2.564% | 3.343% |
| 33 | 14.160% | 11.044% | 9.377% | 7.186% | 2.579% | 3.523% |
| 34 | 14.042% | 10.723% | 9.136% | 6.947% | 2.604% | 3.685% |
| 35 | 13.943% | 10.492% | 8.847% | 6.648% | 2.628% | 3.795% |
| 36 | 13.844% | 10.291% | 8.510% | 6.329% | 2.637% | 3.825% |
| 37 | 13.713% | 10.069% | 8.136% | 6.035% | 2.618% | 3.770% |
| 38 | 13.534% | 9.812% | 7.746% | 5.799% | 2.566% | 3.644% |
| 39 | 13.312% | 9.535% | 7.367% | 5.630% | 2.489% | 3.484% |
| 40 | 13.076% | 9.264% | 7.027% | 5.517% | 2.400% | 3.328% |
| 41 | 12.858% | 9.020% | 6.746% | 5.442% | 2.316% | 3.208% |
| 42 | 12.673% | 8.805% | 6.532% | 5.386% | 2.248% | 3.138% |
| 43 | 12.526% | 8.616% | 6.384% | 5.341% | 2.201% | 3.115% |
| 44 | 12.415% | 8.447% | 6.290% | 5.304% | 2.169% | 3.117% |
| 45 | 12.339% | 8.293% | 6.233% | 5.270% | 2.145% | 3.115% |
| 46 | 12.302% | 8.159% | 6.197% | 5.234% | 2.120% | 3.074% |
| 47 | 12.315% | 8.045% | 6.169% | 5.187% | 2.087% | 2.985% |
| 48 | 12.382% | 7.950% | 6.144% | 5.125% | 2.045% | 2.855% |
| 49 | 12.495% | 7.875% | 6.123% | 5.049% | 1.997% | 2.711% |
| 50 | 12.633% | 7.817% | 6.109% | 4.974% | 1.951% | 2.582% |
| 51 | 12.763% | 7.775% | 6.109% | 4.914% | 1.913% | 2.489% |
| 52 | 12.851% | 7.748% | 6.126% | 4.888% | 1.894% | 2.428% |
| 53 | 12.876% | 7.737% | 6.166% | 4.903% | 1.901% | 2.393% |
| 54 | 12.840% | 7.744% | 6.227% | 4.960% | 1.933% | 2.375% |
| 55 | 12.770% | 7.780% | 6.314% | 5.050% | 1.972% | 2.368% |
| 56 | 12.709% | 7.866% | 6.431% | 5.161% | 1.982% | 2.364% |
| 57 | 12.710% | 8.028% | 6.586% | 5.281% | 1.929% | 2.364% |
| 58 | 12.823% | 8.294% | 6.786% | 5.403% | 1.803% | 2.364% |
| 59 | 13.078% | 8.687% | 7.036% | 5.527% | 1.619% | 2.364% |
| 60 | 13.475% | 9.210% | 7.338% | 5.656% | 1.408% | 2.364% |
| 61 | 13.967% | 9.846% | 7.678% | 5.789% | 1.220% | 2.364% |
| 62 | 14.456% | 10.532% | 8.029% | 5.916% | 1.118% | 2.364% |
| 63 | 14.790% | 10.532% | 8.029% | 5.916% | 1.118% | 2.364% |
| 64 | 14.790% | 10.532% | 8.029% | 5.916% | 1.118% | 2.364% |
| 65 | 14.790% | 10.532% | 8.029% | 5.916% | 1.118% | 2.364% |
| 66 | 14.790% | 10.532% | 8.029% | 5.916% | 1.118% | 2.364% |
| 67 | 14.790% | 10.532% | 8.029% | 5.916% | 1.118% | 2.364% |
| 68 | 14.790% | 10.532% | 8.029% | 5.916% | 1.118% | 2.364% |
| 69 | 14.790% | 10.532% | 8.029% | 5.916% | 1.118% | 2.364% |
| 70+ | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% |

* The rates above are based on the April 1, 2010 to March 31, 2015 experience study released by the Retirement Systems Actuary and published in their August 2015 report.

SECTION IX

REFERENCED TABLES

Retirement

New York State Employees' Retirement System (ERS) Retirement Rates

| Age | Tier 1 | | |
|-----|------------|-------------|-----------|
| | < 20 Years | 20-29 Years | 30+ Years |
| 55 | 15.655% | 29.771% | 55.855% |
| 56 | 8.874% | 13.022% | 23.639% |
| 57 | 7.267% | 10.981% | 20.885% |
| 58 | 8.663% | 12.168% | 19.484% |
| 59 | 9.860% | 14.358% | 19.139% |
| 60 | 9.824% | 16.002% | 19.303% |
| 61 | 12.896% | 19.192% | 21.575% |
| 62 | 17.478% | 29.445% | 30.069% |
| 63 | 14.088% | 22.236% | 20.647% |
| 64 | 15.868% | 25.367% | 20.720% |
| 65 | 20.503% | 25.527% | 23.208% |
| 66 | 21.347% | 27.429% | 23.237% |
| 67 | 18.053% | 24.840% | 20.013% |
| 68 | 14.699% | 26.911% | 18.633% |
| 69 | 17.778% | 23.200% | 17.022% |
| 70+ | 100.000% | 100.000% | 100.000% |

| Age | Tiers 2, 3 & 4 | | |
|-----|----------------|-------------|-----------|
| | <20 Years | 20-29 Years | 30+ Years |
| 55 | 5.551% | 9.250% | 39.772% |
| 56 | 3.720% | 5.668% | 17.309% |
| 57 | 3.727% | 5.955% | 17.646% |
| 58 | 4.046% | 6.618% | 17.073% |
| 59 | 4.598% | 7.292% | 18.698% |
| 60 | 5.260% | 8.123% | 19.194% |
| 61 | 8.123% | 17.308% | 22.353% |
| 62 | 13.827% | 31.705% | 29.738% |
| 63 | 10.549% | 21.841% | 23.021% |
| 64 | 11.900% | 21.667% | 20.592% |
| 65 | 15.324% | 25.275% | 20.580% |
| 66 | 16.848% | 27.953% | 23.772% |
| 67 | 14.991% | 24.507% | 22.854% |
| 68 | 14.079% | 24.135% | 20.552% |
| 69 | 14.277% | 23.444% | 21.910% |
| 70+ | 100.000% | 100.000% | 100.000% |

| Age | Tier 5 | | |
|-----|------------|-------------|-----------|
| | < 20 Years | 20-29 Years | 30+ Years |
| 55 | 4.465% | 7.469% | 9.250% |
| 56 | 2.987% | 4.560% | 5.668% |
| 57 | 2.993% | 4.793% | 5.955% |
| 58 | 3.250% | 5.330% | 6.618% |
| 59 | 3.695% | 5.877% | 7.292% |
| 60 | 4.230% | 6.552% | 8.123% |
| 61 | 6.552% | 14.090% | 17.308% |
| 62 | 29.681% | 38.500% | 72.988% |
| 63 | 10.549% | 21.841% | 23.021% |
| 64 | 11.900% | 21.667% | 20.592% |
| 65 | 15.324% | 25.275% | 20.580% |
| 66 | 16.848% | 27.953% | 23.772% |
| 67 | 14.991% | 24.507% | 22.854% |
| 68 | 14.079% | 24.135% | 20.552% |
| 69 | 14.277% | 23.444% | 21.910% |
| 70+ | 100.000% | 100.000% | 100.000% |

| Age | Tier 6 | | |
|-----|-----------|-------------|-----------|
| | <20 Years | 20-29 Years | 30+ Years |
| 55 | 4.465% | 7.469% | 9.250% |
| 56 | 2.987% | 4.560% | 5.668% |
| 57 | 2.993% | 4.793% | 5.955% |
| 58 | 3.250% | 5.330% | 6.618% |
| 59 | 3.695% | 5.877% | 7.292% |
| 60 | 4.230% | 6.552% | 8.123% |
| 61 | 6.552% | 14.090% | 17.308% |
| 62 | 9.391% | 16.242% | 24.313% |
| 63 | 30.606% | 42.840% | 73.424% |
| 64 | 11.900% | 21.667% | 20.592% |
| 65 | 15.324% | 25.275% | 20.580% |
| 66 | 16.848% | 27.953% | 23.772% |
| 67 | 14.991% | 24.507% | 22.854% |
| 68 | 14.079% | 24.135% | 20.552% |
| 69 | 14.277% | 23.444% | 21.910% |
| 70+ | 100.000% | 100.000% | 100.000% |

* The rates above are based on the April 1, 2010 to March 31, 2015 experience study released by the Retirement Systems Actuary and published in their August 2015 report.

AMORTIZATION EXHIBITS

Differences in actual experience and actuarial assumptions are reflected in the deferred (inflows)/outflows. Differences are amortized over the average expected remaining service period of the active and inactive plan participants.

Experience Changes

Amortization schedules for changes in Experience will be disclosed at the end of the year, once actual benefit payments become available.

| Experience Inflows/Outflows | ECWA |
|--------------------------------|------------------|
| Original Amount | \$ 191,341 |
| Measurement Period Established | 1/1 - 12/31/2018 |
| Period | 6.614 |
| Annual Recognition | \$ 28,930 |

Assumption Changes

Amortization schedules were developed for changes in Assumption/Inputs occurring in the measurement period. The amounts and annual recognition are detailed below.

| Assumption/Input Change Inflows/Outflows | ECWA |
|--|------------------|
| Original Amount | \$ (14,821,432) |
| Measurement Period Established | 1/1 - 12/31/2018 |
| Period | 6.614 |
| Annual Recognition | \$ (2,240,918) |

Investment Changes

As the plan is not funded, there are no (inflows)/outflows due to differences in investment experience.

Erie County Water Authority
 Postretirement Health Care Benefits Plan
 December 31, 2018

| | |
|---------------------------|-------|
| Investment Rate of Return | 3.71% |
|---------------------------|-------|

| | |
|--|--------------------|
| Acutarial Accrued Liability (AAL) | |
| Retirees & Dependents | 45,119,031 |
| Active Employees | 54,521,276 |
| Total Acutarial Accrued Liability | 99,640,307 |
| Additional Obligation Attributable to Future Service | 38,432,842 |
| Present Value of Total Future Liability | 138,073,149 |

| | |
|---|-------------------|
| OPEB Liability | |
| Balance December 31, 2017 | 38,864,242 |
| Prior year adjustment to recognize full liability | 60,776,065 |
| Balance on January 1, 2018 | 99,640,307 |
| 2018 Valuation Changes | |
| Retiree Health & Life Insurance Payments | (2,234,009) |
| Current Year Service & Interest Cost | 6,751,378 |
| Change in Benefits recongnized currently | 119,294 |
| Deferred inflows/outflows - change of assumptions | (14,821,432) |
| Deferred inflows/outflows - expected vs actual experience | 191,341 |
| OPEB Obligation - December 31, 2018 | 89,646,879 |

| | |
|---|------------------|
| Annual OPEB Expense | |
| Current Year Service Cost | 3,378,431 |
| Current Year Interest Cost | 3,372,947 |
| Amortization of Deferred (Inflows)/Outflows (6.648 yrs) | (2,200,675) |
| Change in Benefit Terms | 119,294 |
| Annual OPEB Expense | 4,669,997 |