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GASB STATEMENT NO. 75 REPORT

FOR THE GEORGIA STATE EMPLOYEES POST-EMPLOYMENT

HEALTH BENEFIT FUND

PREPARED AS OF JUNE 30, 2019

FOR FINANCIAL REPORTING AS OF JUNE 30, 2020





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

May 7, 2020

Georgia Department of Community Health
2 Peachtree Street, N.W., 34th Floor
Atlanta, GA 30303-3159

Dear Members of the Board:

Presented in this report is information to assist the Georgia State Employees Post-employment Health Benefit Fund in meeting the requirements of the Governmental Accounting Standards Board (GASB) Statement No. 75. The information is presented for the one-year period ending June 30, 2019. These calculations have been made on a basis that is consistent with our understanding of these accounting standards.

The annual actuarial valuation performed as of June 30, 2018 was used as the basis for much of the information presented as of June 30, 2019 in this report. The valuation was based upon data furnished by the State pension retirement systems and the Georgia Department of Community Health staff, concerning active, inactive, and retired members along with pertinent claims data and financial information. This information was reviewed for completeness and internal consistency, but was not audited. The valuation results depend on the integrity of the data. If any of the information is inaccurate or incomplete our results may be different and our calculations may need to be revised. In the June 30, 2018 valuation, 442 active members out of over 51,000 total active members were missing information regarding entry age, so entry age was assumed to be equal to current age for valuation purposes.

To the best of our knowledge, the information contained in this report is complete and accurate. These calculations were performed by, and under the supervision of, independent consulting actuaries with experience in performing valuations for public retirement systems. In addition, the valuation was prepared in accordance with generally accepted actuarial principles and practices as well as with Actuarial Standards of Practice prescribed by the Actuarial Standards Board.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement No. 75. The calculation of the plan's liability for this report may not be applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB No. 75 may produce significantly different results.



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We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. We are available to answer any questions on the material contained in this report or to provide explanations or further details as may be appropriate. The valuations were prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the medical plans and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of each plan and are expected to reasonably estimate future experience of the plan.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Alisa Bennett'.

Alisa Bennett, FSA, EA, FCA, MAAA
President

A handwritten signature in blue ink, appearing to read 'Ben Mobley'.

Ben Mobley, ASA, FCA, MAAA
Senior Actuary



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REPORT OF THE ANNUAL GASB STATEMENT NO. 75
GEORGIA STATE EMPLOYEES POST-EMPLOYMENT HEALTH BENEFIT FUND
PREPARED AS OF JUNE 30, 2019

SECTION I – SUMMARY OF COLLECTIVE AMOUNTS

	June 30, 2017	June 30, 2018
Valuation Date (VD):	June 30, 2017	June 30, 2018
Prior Measurement Date:	June 30, 2017	June 30, 2018
Measurement Date (MD):	June 30, 2018	June 30, 2019
Reporting Date (RD):	June 30, 2019	June 30, 2020
Single Equivalent Interest Rate (SEIR):		
Single Equivalent Interest Rate at Prior Measurement Date	3.60%	5.22%
Single Equivalent Interest Rate at Measurement Date	5.22%	7.30%
Net OPEB Liability:		
Total OPEB Liability (TOL)	\$ 3,817,452,572	\$ 2,858,522,167
Fiduciary Net Position (FNP)	1,201,865,359	1,617,205,106
Net OPEB Liability (NOL = TOL – FNP)	\$ 2,615,587,213	\$ 1,241,317,061
FNP as a percentage of TOL	31.48%	56.57%
Collective OPEB Expense:	(\$141,285,538)	(\$427,674,953)
Deferred Outflow of Resources:	\$60,460,287	\$83,713,385
Deferred Inflow of Resources:	\$1,153,826,332	\$1,589,002,064



SECTION II – INTRODUCTION

The Governmental Accounting Standards Board issued Statement No. 75 (GASB 75), *“Accounting and Financial Reporting for Postemployment Benefit Plans other than Pension”* in June 2015. This report, prepared as of June 30, 2019 (the Measurement Date), presents information to assist the Fund in providing the required information under GASB 75 to participating employers. Much of the material provided in this report, including the Net OPEB Liability, is based on the results of the GASB 74 report, which was issued January 29, 2020. See that report for more information on the member data, actuarial assumptions and methods used in developing the GASB 74 results.

GASB 75 replaces GASB 45, and represents a significant departure from the requirements of the prior statement. GASB 45 was issued as a “funding friendly” statement that required postemployment benefit plans other than pension plans (OPEB) to report items consistent with the results of the Fund’s actuarial valuations, as long as those valuations met certain parameters. GASB 75 basically separates accounting from funding by creating disclosure and reporting requirements that may or may not be consistent with the basis used for funding.

Two major changes in GASB 75 are the requirements to determine the Net OPEB Liability (NOL) and recognize an OPEB Expense (OE) in the financial statements of the participating employer.

GASB 75 requires the inclusion of a Net OPEB Liability (NOL) on the plan sponsor’s balance sheet and a determination of an OPEB Expense (OE), which may bear little relationship to the funding requirements for the plan. In fact, it is possible in some years for the NOL to be an asset or the OE to be an income item. The NOL is set equal to the Total OPEB Liability (TOL) minus the Fiduciary Net Position (FNP). The benefit provisions recognized in the calculation of the TOL are summarized in Schedule A. For the purposes of reporting under GASB 75, the plan is assumed to be a cost-sharing-employer defined benefit OPEB plan.

OE includes amounts for Service Cost (the Normal Cost under Entry Age Normal (EAN) for the year), interest on the TOL, employee contributions, administrative expenses, other cash flows during the year, recognition of increases/decreases in the TOL due to changes in the benefit structure, actual versus expected experience, actuarial assumption changes, and recognition of investment gains/losses. The actual experience and assumption change impacts are recognized over the average expected remaining service life of the membership as of the beginning of the measurement period, while investment gains/losses are recognized equally over five years. The development of the OE is shown in Section V. The unrecognized portions of each year’s experience, assumption changes and investment gains/losses are used to develop Deferred Inflows and Outflows of Resources, which also must be included on the employer’s Statement of Net Position.



Among the items needed for the TOL calculation is a discount rate, as defined by GASB, or a Single Equivalent Interest Rate (SEIR). To determine the SEIR, the FNP must be projected into the future for as long as there are anticipated benefits payable under the plan provisions applicable to the membership and beneficiaries of the System on the Measurement Date. Future contributions were projected to be made at the current levels set in statute. If the FNP is not projected to be depleted at any point in the future, the long-term expected rate of return on plan investments expected to be used to finance the benefit payments may be used as the SEIR.

If, however, the FNP is projected to be depleted at a future measurement date, the SEIR is determined as the single rate that will generate a present value of benefit payments equal to the sum of the present value determined by discounting all projected benefit payments through the date of depletion by the long-term expected rate of return, and the present value determined by discounting those benefits after the date of depletion by a 20-year tax-exempt municipal bond (rating AA/Aa or higher) rate. The rate used, if necessary, for this purpose is the Bond Buyers General Obligation 20-year Municipal Bond Index Rate (formerly published monthly by the Board of Governors of the Federal Reserve System). For the purpose of this report, we have determined that a discount rate of 7.30% meets the requirements of GASB 75, as it is our understanding that the Fund is currently invested similarly to the Georgia Employees Retirement System and the employer contributions over the last five years are such that, if the pattern continues, the Fund will not be depleted.

The FNP projections are based upon the financial status of Fund on the Measurement Date, the indicated set of methods and assumptions, and the requirements of GASB 74 and 75. As such, the FNP projections are not reflective of the cash flows and asset accumulations that would occur on an ongoing plan basis, reflecting the impact of future members. Therefore, the results of this test do not necessarily indicate whether or not the fund will actually run out of money, the financial condition of the plan, or the plan's ability to make benefit payments in future years.

The sections that follow provide the results of all the required calculations, presented in the order laid out in GASB 75 for note disclosure and Required Supplementary Information (RSI).



SECTION III – FINANCIAL STATEMENT NOTES

The material presented herein will follow the order presented in GASB 75. Paragraph numbers are provided for ease of reference.

Paragraph 92-93.: This paragraph requires information to be disclosed regarding the actuarial assumptions and other inputs used to measure the TOL. The complete set of actuarial assumptions and other inputs utilized in developing the TOL are outlined in Schedule B. The TOL as of June 30, 2019 was determined based on an actuarial valuation prepared as of June 30, 2018, using the following actuarial assumptions and other inputs, applied to all periods included in the measurement and rolled forward to the measurement date of June 30, 2019:

Inflation	2.75 percent
Salary increases	
ERS	3.25 – 7.00 percent, including inflation
JRS	4.50 percent, including inflation
LRS	None
Long-term investment rate of return	7.30 percent compounded annually, net of investment expense, and including inflation
Municipal Bond Index Rate	3.50 percent
Year FNP is projected to be depleted	N/A
Single Equivalent Interest Rate	7.30 percent
Healthcare cost trend rate	
Pre-Medicare Eligible	7.250%
Medicare Eligible	5.375%
Ultimate trend rate	
Pre-Medicare Eligible	4.75%
Medicare Eligible	4.75%
Year of Ultimate trend rate	
Pre-Medicare Eligible	2028
Medicare Eligible	2022



Mortality

The RP-2000 Combined Mortality Table projected to 2025 with projection scale BB and set forward 2 years for both males and females is used for the period after service retirement and for dependent beneficiaries. The RP-2000 Disabled Mortality Table projected to 2025 with projection scale BB and set back 7 years for males and set forward 3 years for females is used for the period after disability retirement.

The actuarial assumptions used in the June 30, 2018 valuation are based on the results of the most recent actuarial experience studies for the pension systems, which covered the five year period ending June 30, 2014 and adopted by the pension Board on December 17, 2015. The next experience study for ERS will be for the period ending June 30, 2019.

As noted in our experience study report, inflation's short-term volatility is illustrated by comparing its average rate over the last 10, 30 and 50 years. Although the 10-year average of 2.31% is lower than the assumed rate, the longer 30, 40 and 50-year averages of 2.79%, 3.94% and 4.25% respectively, are higher than the current rate. The validity of the assumption is, therefore, dependent upon the emphasis one assigns to the short and long-terms. Current economic forecasts suggest lower inflation but are generally looking at a shorter time period than appropriate for our purposes. In the 2014 OASDI Trustees Report, the Chief Actuary for Social Security bases the 75 year cost projections on an intermediate inflation assumption of 2.7% with a range of 1.7% to 3.7%. We consider that range reasonable and use a current price inflation assumption of 2.75%.

Also noted in our experience study report, overall, the number of actual deaths among service retirements and beneficiaries was close to the number of deaths expected, and the number of deaths among disability retirements was somewhat greater than expected during the period under investigation. We recommended continued use of the RP-2000 Combined Mortality Table for service retirements and beneficiaries but in order to provide a margin for anticipated mortality improvement, we recommended projecting the table to 2025 with projection scale BB and setting the table forward 2 years for both males and females. Based on the results of the most recent experience study, the numbers of expected future deaths are 9-12% less than the actual number of deaths that occurred during the study period for service retirements and beneficiaries and for disability retirements, which we believe provides sufficient margin for future mortality improvement.



We are aware that the Society of Actuaries has released a new public sector mortality table, and although we will look at the fit of this table to actual rates of retired member mortality under ERS during the next experience study, we believe that the current assumed rates of mortality remain appropriate for use at this time. The next experience study for ERS will be for the period ending June 30, 2019.

The remaining actuarial assumptions (e.g., initial per capita costs, health care cost trends, rate of plan participation, rates of plan election, etc.) used in the June 30, 2018 valuation were based on a review of recent plan experience done concurrently with the June 30, 2018 valuation. The full set of actuarial assumptions used can be found in Schedule B.

93(e) Sensitivity analysis: This paragraph requires disclosure of the sensitivity of the NOL to changes in the health care cost trend rates. The following exhibit presents the NOL of the Plan, calculated using the health care cost trend rates, as well as what the Plan's NOL would be if it were calculated using a health care cost trend rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate.

Health Care Cost Trend Rate Sensitivity			
	1% Decrease	Current	1% Increase
Net OPEB Liability	\$953,889,130	\$1,241,317,061	\$1,582,448,231

Paragraph 94:

- (a) Discount rate.** The discount rate used to measure the Total OPEB Liability was 7.30% percent.
- (b) Projected cash flows:** The projection of cash flows used to determine the discount rate assumed that plan contributions from members and the State of Georgia will be made at the level projected in the budget projections to the extent budget projections were provided. After that, the plan contribution is assumed to be equal to the average of the plan contributions over the prior five years.
- (c) Long term rate of return:** The long-term expected rate of return on OPEB plan investments will be determined based on the allocation of assets by asset class and by the mean and variance of real returns as determined by the investment advisor.
- (d) Municipal bond rate:** the discount rate determination will use a municipal bond rate to the extent the Fund is projected to run out of money before all benefits are paid.
- (e) Periods of projected benefit payments:** Projected future benefit payments for all current plan members were projected through 2120.



(f) Assumed asset allocation: The target asset allocation, as provided by the investment consultant, are summarized in the following table.

Assets are invested in the same manner as are assets of the Georgia Employees' Retirement System (ERS). The most recent target asset allocation and best estimates of arithmetic real rates of return for each major asset class provided to us by ERS are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*
Fixed Income	30.00%	-0.10%
US Large Stocks	46.20%	8.90%
US Small Stocks	1.30%	13.20%
Int'l Developed Mkt Stocks	12.40%	8.90%
Int'l Emerging Mkt Stocks	5.10%	10.90%
Alternatives	5.00%	12.00%
Total	100.00%	

*Net of inflation

(g) This paragraph requires disclosure of the sensitivity of the NOL to changes in the the discount rate. The following exhibit presents the NOL of the Plan, calculated using the the discount rate of 7.30 percent, as well as the System's NOL calculated using a discount rate that is 1-percentage-point lower (6.30 percent) or 1-percentage-point higher (8.30 percent) than the current rate:

	Discount Rate Sensitivity		
	1%	Current	1%
	Decrease (6.30%)	Discount Rate (7.30%)	Increase (8.30%)
Net OPEB Liability	\$1,536,764,708	\$1,241,317,061	\$990,163,287

Paragraph 96(a): This paragraph requires the disclosure of the employer's proportionate share of the Collective NOL and if an employer has as special funding situation, the portion of the non-employer contributing entities proportionate share of the collective NOL that is associated with the employer. These amounts are shown in Appendix B. Note that there is no special funding situation.



Paragraph 96(b): This paragraph requires disclosure of the employer's proportion of the collective NOL and the change in the proportion since the prior measurement date. These amounts are shown in Appendix A.

Paragraph 96(c): June 30, 2018 is the actuarial valuation date upon which the TOL is based. The result was rolled forward using standard actuarial techniques to the measurement date. The roll forward calculation adds the normal cost (also called the service cost) for the period July 1, 2018 through June 30, 2019, subtracts the actual benefit payments for the same period and then applies the expected investment rate of return for the period. If applicable, actuarial gains and losses arising from benefit changes, the differences between estimates and actual experience, and changes in assumptions or other inputs are reconciled to the TOL as of the Measurement Date. The procedure was used to determine the TOL as of June 30, 2019, as shown in the following table:

TOL Roll Forward		
(a) TOL as of June 30, 2018*	\$	3,817,452,572
(b) Actual Benefit Payments and Refunds, for the Period July 1, 2018 – June 30, 2019		(168,992,928)
(c) Interest on TOL		194,860,309
= [(a) x (Prior SEIR)] + [(b) x (Prior SEIR *0.5)]		
(d) Service Cost for the Period July 1, 2018 – June 30, 2019 at the End of the Period		63,723,731
(e) Change Due to Experience		(371,756,790)
(f) Change Due to Change in Assumptions		(676,764,727)
(g) TOL Rolled Forward to June 30, 2019		
= (a) + (b) + (c) + (d) + (e)	\$	2,858,522,167

* The TOL as of June 30, 2018 used in the roll forward was calculated using the discount rate as of the Prior Measurement Date. The Change Due to Experience is primarily due to claims experience, especially for Medicare eligible members. The Change Due to Change in Assumptions is primarily due to the change in the discount rate.

Paragraphs 96(d) and (e): The following changes were made to the assumptions as noted:

Changes in actuarial assumptions:

6/30/2017 valuation: The participation assumption, tobacco use assumption and morbidity factors were revised.

6/30/2015 valuation: Decremental and underlying inflation assumptions were changed to reflect the Retirement Systems' experience studies.



6/30/2012 valuation: A data audit was performed and data collection procedures and assumptions were changed.

Paragraph 96(f): There were no changes between the measurement date of the collective net OPEB liability and the employer's reporting date.

Paragraph 96(g): Please see Section V of the report for the development of the collective OPEB expense. The OE for each employer is shown in Appendix B.

Paragraph 96(h): Since certain expense items are amortized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts serve to reduce OPEB expense they are labeled deferred inflows. If they will increase OPEB expense they are labeled deferred outflows. As noted in the previous section, the amortization of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, if any, are amortized over the average remaining service life of the active and inactive members at the beginning of the fiscal year. Investment gains and losses are amortized over a fixed five year period.

The table below provide a summary of the deferred inflows and outflows as of the Measurement Date.

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 0	\$ 430,406,980
Changes of assumptions	\$ 0	\$ 1,158,595,084
Net difference between projected and actual earnings on plan investments	<u>\$ 83,713,385</u>	<u>\$ 0</u>
Total	<u>\$ 83,713,385</u>	<u>\$ 1,589,002,064</u>



Paragraph 96(i): The collective amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEBs will be recognized in OPEB expense as follows:

Deferred Amounts to be recognized in future years	
	Deferred Outflows / (Inflows) of Resources
Year 1	(\$587,275,272)
Year 2	(\$526,841,495)
Year 3	(\$318,894,398)
Year 4	(\$72,277,514)
Thereafter	\$0

Paragraph 96(j): There are no non-employer contributions recognized for the support provided by non-employer contributing entities.



SECTION IV – REQUIRED SUPPLEMENTARY INFORMATION

Paragraph 97(a) and (b): CMC was not required to provide this information.

Paragraph 98: Information about factors that significantly affect trends in the amounts in the schedules required by paragraph 98 should be presented as notes to the schedule. Comments on additional years will be added as they occur.



SECTION V – OPEB EXPENSE

The OPEB Expense (OE) consists of a number of different items. GASB 75 refers to the first item as Service Cost which is the Normal Cost using the Entry Age Normal actuarial funding method. The second item is interest on the TOL at the Discount Rate in effect as of the Prior Measurement Date.

The next three items refer to any changes that occurred in the TOL due to:

- benefit changes, or
- actual versus expected experience, or
- changes in assumptions or other inputs.

Benefit changes, which are reflected immediately, will increase OE, if there is a benefit improvement for existing Plan members, or decrease OE, if there is a benefit reduction. For the year ended June 30, 2019, there were no benefit changes to be recognized.

The next item to be recognized is the portion of current year changes in TOL due to actual versus expected Plan experience for the year. The portion to recognize in the current year is determined by spreading the total change over the average expected remaining service life of the entire Plan membership at the beginning of the measurement period. The average expected remaining service life of active members is the average number of years the active members are expected to remain in covered employment. For the year ended June 30, 2019 this number is 7.54 years. The average expected remaining service life of the inactive members is zero. Therefore, the recognition period is the weighted average of these two amounts, or 4.34 years. The development of the average remaining service life is shown in the table below.

Calculation of Weighted Average Years of Working Lifetime

Category	Number	Average Years of Working Lifetime
	(1)	(2)
a. Active Members	51,623	7.54
b. Inactive Members	38,150	0.00
c. Total	89,773	
Weighted Average Years of Working Lifetime [(a1 * a2) + (b1 * b2)]/c1		4.34



The last item under changes in TOL is changes in assumptions or other inputs. The portion to recognize in the current year is determined by spreading the total change over the average expected remaining service life of the entire Plan membership, similar to the way experience gains and losses are recognized.

Member contributions for the year and projected earnings on the FNP at the discount rate serve to reduce the expense. One-fifth of current-period difference between actual and projected earning on the FNP are recognized in the OPEB expense.

Investment Earnings (Gain)/Loss as of June 30, 2019			
a	Expected asset return rate		7.30%
b	Beginning of year market value assets (BOY)	\$	1,201,865,359
c	End of year market value assets (EOY)	\$	1,617,205,106
d	Expected return on BOY for plan year (a x b)	\$	87,736,171
External Cash Flow			
	Contributions - employer	\$	534,672,565
	Contributions - member		0
	Refunds of contributions		0
	Benefits paid		(168,992,928)
	Admin expenses and other		(2,025,815)
e	Total net external cash flow	\$	363,653,822
f	Expected return on net cash flow (a x 0.5 x e)	\$	13,273,365
g	Projected earnings for plan year (d + f)	\$	101,009,536
h	Net investment income (c - b - e)	\$	51,685,925
	Investment earnings (gain)/loss (g - h)		49,323,611



The current year portions of previously determined experience and assumption amounts, recognized as Deferred Outflows of Resources and Deferred Inflows of Resources are included. Deferred Outflows of Resources are added to the OE while Deferred Inflows of Resources are subtracted from the OE. Finally, other miscellaneous items are included.

Collective OPEB Expense Determined as of the Measurement Date	
Service Cost	\$ 63,723,731
Interest on the TOL and Cash Flow	\$ 194,860,309
Current-period benefit changes	\$ 0
Expensed portion of current-period difference between expected and actual experience in the total OPEB liability	\$ (85,658,247)
Expensed portion of current-period changes of assumptions	\$ (155,936,573)
Member contributions	\$ 0
Projected earnings on plan investments	\$ (101,009,536)
Expensed portion of current-period differences between actual and projected earnings on plan investments	\$ 9,864,722
Administrative expense	\$ 2,025,815
Other	\$ 0
Recognition of beginning deferred outflows of resources as OPEB expense	\$ 16,205,791
Recognition of beginning deferred inflows of resources as OPEB expense	<u>\$ (371,750,965)</u>
Collective OPEB Expense	<u><u>\$ (427,674,953)</u></u>



Schedule A – Summary of Benefit Provisions Valued

SUMMARY OF BENEFIT PROVISIONS VALUED **State Employee OPEB Fund Eligibility**

The following summary gives the main participation, benefit and contribution provisions of the Plan as interpreted in preparing the actuarial valuation.

Retiree medical eligibility is attained when an employee retires, and is immediately eligible to draw a retirement annuity from any of the retirement systems listed below. “Old Plan” means the plan applicable to members beginning employment prior to July 1, 1982. “New Plan” means the plan applicable to members employed on or after July 1, 1982 and before January 1, 2009. “GSEPS” means the plan applicable to members employed on or after January 1, 2009.

- Employees’ Retirement System (GSEP Non-Police)
 - Service Retirement: 25 years of service or age 60 with 10 years of service
 - Disability Retirement: 15 years of service
 - Active Death Surviving Spouse: 15 years of service
- Employees’ Retirement System (GSEP Police)
 - Service Retirement: 30 years of service or age 55 with 10 years of service
 - Disability Retirement: 15 years of service
 - Active Death Surviving Spouse: 13 years and 4 months of service
- Employees’ Retirement System (Police)
 - Service Retirement: 30 years of service or age 55 with 10 years of service
 - Disability Retirement: 13 years and 4 months of service
 - Active Death Surviving Spouse: 13 years and 4 months of service
- Employees’ Retirement System (Old & New Plan Non-Police)
 - Service Retirement: 25 years of service or age 60 with 10 years of service
 - Disability Retirement: 13 years and 4 months of service
 - Active Death Surviving Spouse: 13 years and 4 months of service or age 60 with 10 years of service
- Judicial Retirement System
 - Service Retirement: age 60 with 10 years of service
 - Disability Retirement: 4 years of service
 - Active Death Surviving Spouse: 10 years of service
- Legislative Retirement System
 - Service Retirement: age 60 with 8 years of service
 - Disability Retirement: age 60 with 8 years of service
 - Active Death Surviving Spouse: 15 years of service or age 60 with 8 years of service



Schedule A – Summary of Benefit Provisions Valued

Retirees from other systems who may be eligible for post-employment benefits other than pensions were included in the valuation if they were included in the DCH census data. Employees with payroll location codes less than 60000 were included in the State Employee OPEB Fund. Approximately 7% of these employees are members of the Teachers Retirement System. Information about this System can be found in the GASB 74 report for the School Employee OPEB Fund.

Coverage starts immediately at retirement, provided the retiree makes proper premium payments or has the premiums deducted from the annuity check. If elected, dependent coverage starts on the same day as retiree coverage. A change from single to family coverage as a retiree is allowed only with a qualified change in status.

A tobacco surcharge of \$80 per month is charged to those tobacco users not participating in the Medicare Advantage plans. Of the retirees not participating in the Medicare Advantage plans, it is assumed that 2.5% pay the tobacco surcharge.



Schedule A – Summary of Benefit Provisions Valued (continued)

2019 Plan Options

The plan designs offered for the 2019 plan year are as follows. Please note that Medicare Advantage premium rates for the 2020 plan year are available and are used in the valuation:

For Medicare-eligible members

- UnitedHealthcare Medicare Advantage (MAPD) Plan Options (Standard and Premium)
- Anthem Blue Cross and Blue Shield Medicare Advantage (MAPD) Plan Options (Standard and Premium)

Non-MA Plan Options

- Anthem Gold, Silver, Bronze Health Reimbursement Arrangement (HRA) Plan Options
- Anthem, Kaiser Permanente (KP) and UnitedHealthcare Health Maintenance Organization (HMO) Plan Options
- UnitedHealthcare High Deductible Health Plan (HDHP)

Premiums

Retiree premiums vary based on plan election, dependent coverage, Medicare eligibility and election. Premiums shown are monthly and are effective January 1, 2019.

**STATE HEALTH BENEFIT PLAN
ANNUITANT UNDER 65 RATES
JANUARY 1 - DECEMBER 31, 2019**

	YOU	YOU + CHILD(REN)	YOU + SPOUSE	YOU + FAMILY
Anthem Gold	\$168.73	\$307.13	\$418.09	\$556.50
Anthem Silver	\$110.89	\$208.80	\$296.62	\$394.54
Anthem Bronze	\$72.45	\$143.46	\$215.91	\$286.92
Anthem HMO	\$135.65	\$250.90	\$348.63	\$463.89
UHC HMO	\$172.56	\$313.65	\$426.14	\$567.22
UHC HDHP	\$58.03	\$118.94	\$185.62	\$246.54
Kaiser HMO	\$142.71	\$262.59	\$362.49	\$482.37

The Medicare Advantage Plan monthly retiree premiums for members with Medicare Parts A and B as of January 1, 2020 are as follows. The Fund pays the Medicare Part B late enrollment penalty for members who were required to pay the penalty when the Medicare Advantage plans were first implemented. Future retirees are required to enroll in Medicare Part B when first eligible to avoid the penalty, or be responsible for paying the late enrollment penalty if applicable.

Medicare Advantage Plan	Retiree Premium
UHC Standard MA	\$ 20.00
UHC Premium MA	\$ 128.22
Anthem Standard MA	\$ 146.15
Anthem Premium MA	\$ 182.82

For active employees with less than 5 years of service, premiums will be subject to the service based schedule shown below.



Schedule A – Summary of Benefit Provisions Valued (continued)

CONTRIBUTIONS (Actives with less than five years of service as of January 1, 2012): The Health Benefit Fund will pay a portion of the blended contribution rate for the Bronze Plan or the UHC Premium MA plan based on the retirees' service at retirement. The retiree or spouse will pay the remainder of the premium for the chosen plan, not less than the premium paid by those with more than five years of service as of January 1, 2012.

Service at Retirement	Health Benefit Fund's Share of Contribution Rate		Retiree's Share of Contribution Rate	
	Retiree	Spouse	Retiree	Spouse
30 and above	75%	55%	25%	45%
29	72%	53%	28%	47%
28	69%	51%	31%	49%
27	66%	49%	34%	51%
26	63%	47%	37%	53%
25	60%	45%	40%	55%
24	57%	43%	43%	57%
23	54%	41%	46%	59%
22	51%	39%	49%	61%
21	48%	37%	52%	63%
20	45%	35%	55%	65%
19	42%	33%	58%	67%
18	39%	31%	61%	69%
17	36%	29%	64%	71%
16	33%	27%	67%	73%
15	30%	25%	70%	75%
14	27%	23%	73%	77%
13	24%	21%	76%	79%
12	21%	19%	79%	81%
11	18%	17%	82%	83%
10	15%	15%	85%	85%
9 and below	0%	0%	100%	100%



Schedule A – Summary of Benefit Provisions Valued (continued)

BLENDED CONTRIBUTION RATES: The blended contribution rates used in valuation and trended back to the valuation date are as follows:

2019 Rates				
Medical Plan	Under 65 Retiree with Under 65 Spouse (If Covered)			
	Ret Only	Ret+Ch	Ret+Sp	Family
Anthem HRA Gold	\$696.99	\$1,184.89	\$1,463.69	\$1,951.58
Anthem HRA Silver	\$638.46	\$1,085.38	\$1,340.76	\$1,787.69
Anthem HRA Bronze	\$599.99	\$1,019.97	\$1,259.97	\$1,679.96
Anthem HMO	\$664.30	\$1,129.30	\$1,395.02	\$1,860.03
UHC HMO	\$700.05	\$1,190.08	\$1,470.10	\$1,960.13
UHC HDHP	\$583.68	\$992.26	\$1,225.73	\$1,634.30
Kaiser HMO	\$589.34	\$1,001.89	\$1,237.62	\$1,650.17

2020 Medicare Eligible Retirees Coverage Tier	Anthem MA Plans		UHC MA Plans	
	MA PREM	MA STD	MA PREM	MA STD
Retiree Only				
	\$363.80	\$146.15	\$309.20	\$20.00
Retiree & Spouse				
	\$727.60	\$292.30	\$618.40	\$40.00



Schedule B – Statement of Actuarial Assumptions and Methods

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

All decremental assumptions and methods adopted by the Georgia ERS Board December 17, 2015.

VALUATION DATE: June 30, 2018

DISCOUNT RATE: 7.30% per annum, compounded annually, net of expenses.

AFFORDABLE CARE ACT: The impact of the Affordable Care Act (ACA) was addressed in this valuation. Review of the information currently available did not identify any specific provisions of the ACA that are anticipated to significantly impact results. While the impact of certain future provisions should be recognized in the determination of liabilities, overall future plan costs and the resulting liabilities are driven by amounts employers and retirees can afford (i.e., trend). The trend assumption forecasts the anticipated increase to initial per capita costs, taking into account health care cost inflation, increases in benefit utilization, plan changes, government-mandated benefits and technological advances. Given the uncertainty regarding the ACA's implementation, continued monitoring of the ACA's impact on the Plan's liability will be required.

ANNUAL EXPECTED MEDICAL/RX CLAIMS (AGE ADJUSTED TO AGE 65):

PRE-MEDICARE

Following is a chart detailing expected claims for pre-65 retirees blended based on assumed plan elections and normalized to age 65.

Pre-Medicare*	\$ 13,718

*Retirees selecting one of the HRA plans will also receive annual credits to use for eligible medical expenses. For 2019, the credits are \$400 for the Gold Plan, \$200 for the Silver Plan and \$100 for the Bronze plan. For members participating in the Anthem or UnitedHealthcare plans, wellness credits up to \$480 are available to those completing certain wellness requirements. Claims are adjusted for HRA credits and it is assumed that 50% of eligible plan participants receive the additional wellness credits.

MEDICARE ELIGIBLE

Effective January 1, 2010, the Medicare Advantage Plans are mandatory for Medicare-eligible retirees to receive the State subsidy.



Schedule B – Statement of Actuarial Assumptions and Methods

The Medicare Advantage Plan monthly retiree premiums for members with Medicare Parts A and B as of January 1, 2020 are as follows:

Medicare Advantage Plan	Retiree Premium
UHC Standard MA	\$ 20.00
UHC Premium MA	\$ 128.22
Anthem Standard MA	\$ 146.15
Anthem Premium MA	\$ 182.82

Following is a chart detailing expected claims costs for Medicare Advantage Plan retirees blended based on assumed plan elections and normalized to age 65. It is assumed that 95% of retirees will choose UHC plans and 5% of retirees will choose Anthem plans. It is further assumed that 40% choose a Premium plan and 60% choose a Standard plan.

2020 premium rates, trended to the valuation date, were used to develop the expected claims costs for Medicare Advantage Plan retirees.

Medicare Advantage*	\$ 1,261

*Claims costs for current retirees with no Medicare Part A coverage were assumed to be 373% of the claims shown above.

HEALTH CARE COST TREND RATES: Following is a chart detailing trend assumptions:

Year	Pre-65 Retiree Claims Trend	Post-65 Retiree Claims Trend
2018	7.25%	5.375%
2019	7.00%	5.250%
2020	6.75%	5.125%
2021	6.50%	5.000%
2022	6.25%	4.750%
2023	6.00%	4.750%
2024	5.75%	4.750%
2025	5.50%	4.750%
2026	5.25%	4.750%
2027	5.00%	4.750%
2028 and beyond	4.75%	4.750%



Schedule B – Statement of Actuarial Assumptions and Methods

AGE RELATED MORBIDITY: Per capita costs are adjusted to reflect expected cost changes related to age. The increase to the net incurred claims was assumed to be:

Participant Age	Annual Increase
Under 30	0.00%
30 – 34	1.00%
35 – 39	1.50%
40 – 44	2.00%
45 – 49	2.60%
50 – 54	3.30%
55 – 59	3.60%
60 – 64	4.20%
65 – 69	3.00%
70 – 74	2.50%
75 – 79	2.00%
80 – 84	1.00%
85 – 89	0.50%
90 and over	0.00%

Percent Married: 100% of active members were assumed to be married with the husband 3 years older than his wife.



Schedule B – Statement of Actuarial Assumptions and Methods

ANTICIPATED PARTICIPATION: Representative values of the assumed annual rates of member participation and spouse coverage by future retirees are as follows. Members who elect to participate are assumed to participate for the remainder of their lives and no lapses are assumed.

	School
Member Participation*:	
If 5 years of service on 1/1/2012	95%
If less than 5 years of service on 1/1/2012:	
Years of Service at Retirement:	
30+	95%
25-29	90%
20-24	80%
15-19	65%
10-14	50%
Under 10	20%
Spouse Coverage:	
If retiree had 5 years of service on 1/1/2012	40%
If retiree had less than 5 years of service on 1/1/2012:	
Years of Retiree Service at Retirement:	
30+	32%
25-29	30%
20-24	26%
15-19	20%
10-14	18%
Under 10	8%

* Sufficient experience for developing plan specific participation rates for members with less than 5 years of service on 1/1/2012 has not yet developed, so standard actuarial assumptions for participation based on level of subsidization are used. Active employees currently waiving health coverage are assumed to join the plan at a later date at the rate of 20% and then participate in the same pattern as current participating members. The 20% assumption is based on actual experience using past 4 years of waiver data.

ACTUARIAL VALUE OF ASSETS: Market Value



Schedule B – Statement of Actuarial Assumptions and Methods

**State Employee OPEB Fund Members Participating in the
Employees Retirement System of Georgia**

SALARY INCREASES:

Age	Assumed Annual Rate of Salary Increase
20	7.00%
25	6.25
30	5.15
35	4.55
40	4.30
45	4.05
50	3.80
55	3.55
60	3.30
65	3.25

RATES OF DISABILITY: Representative values of the assumed annual rates of disability are as follows.

Age	<u>Non-Law Enforcement</u>		<u>Law Enforcement</u>
	<u>Male</u>	<u>Female</u>	
20	0.05%	0.02%	0.02%
25	0.05	0.02	0.05
30	0.05	0.02	0.08
35	0.05	0.02	0.16
40	0.25	0.10	0.85
45	0.48	0.25	1.40
50	0.70	0.45	2.00
55	1.05	0.73	2.70
60	--	--	--

RATES OF DEATH BEFORE RETIREMENT: The RP-2000 Employee Mortality Table projected to 2025 with projection scale BB is used for both males and females while in active service. Representative values of the assumed annual rates of mortality while in active service are as follows:

Age	Males	Females	Age	Males	Females
20	0.0320%	0.0177%	45	0.1399%	0.1043%
25	0.0349	0.0192	50	0.1983	0.1555
30	0.0412	0.0245	55	0.2810	0.2228
35	0.0717	0.0441	60	0.4092	0.3058
40	0.1001	0.0655	65	0.5600	0.4304



Schedule B – Statement of Actuarial Assumptions and Methods

RATES OF WITHDRAWAL: Representative values of the assumed annual rates of withdrawal are as follows.

<u>Age</u>	<u>Non-Law Enforcement</u>		
	<u>Years of Service</u>		
	<u>0-4</u>	<u>5-9</u>	<u>10 & Over</u>
<u>Male</u>			
20	35.00%		
25	27.50	15.00%	
30	23.00	11.50	7.50%
35	21.50	10.00	6.00
40	19.50	9.50	4.75
45	18.60	9.00	4.00
50	16.60	7.25	4.25
55	14.50	7.00	4.75
60	14.00	6.00	
65	15.00	10.00	
<u>Female</u>			
20	30.00%		
25	25.00	17.50%	
30	21.50	12.50	8.25%
35	19.50	10.50	6.00
40	18.25	9.50	5.00
45	16.50	8.00	4.00
50	15.00	7.25	4.25
55	14.00	7.00	4.50
60	14.50	6.25	
65	17.00	11.00	

<u>Age</u>	<u>Law Enforcement</u>	
	<u>Years of Service</u>	
	<u>0-9</u>	<u>10 & Over</u>
20	15.00%	
25	5.75	4.00%
30	5.75	4.00
35	5.75	3.75
40	5.75	3.00
45	5.75	2.00
50	5.75	2.00
55	--	--



Schedule B – Statement of Actuarial Assumptions and Methods

RATES OF RETIREMENT: Representative values of the assumed annual rates of service retirement are as follows.

Non-Law Enforcement Old Plan								
Age	Early Retirement		Age 60 or 30 years		34 years		More than 34 years	
	Male	Female	Male	Female	Male	Female	Male	Female
50	2.0%	2.0%	7.5%	6.0%	100.0%	100.0%	90.0%	100.0%
52	2.0	2.0	7.5	6.0	100.0	100.0	90.0	100.0
55	3.0	3.5	7.5	10.0	100.0	100.0	75.0	90.0
57	3.5	5.0	10.5	10.0	100.0	100.0	70.0	70.0
60			15.0	20.0	97.5	95.0	40.0	55.0
62			32.0	40.0	97.5	95.0	40.0	65.0
65			35.0	40.0	35.0	40.0	35.0	40.0
67			35.0	35.0	35.0	35.0	35.0	35.0
70			35.0	35.0	35.0	35.0	35.0	35.0
75			100.0	100.0	100.0	100.0	100.0	100.0

Non-Law Enforcement New Plan and GSEPS					Law Enforcement***
Age	Early Retirement		Normal Retirement		
	Male	Female	Male*	Female**	
50	7.0%	4.5%	70.0%	50.0%	
52	7.0	4.5	70.0	45.0	
55	7.0	6.5	60.0	50.0	20.0%
57	8.0	8.0	50.0	40.0	12.0
60			25.0	30.0	30.0
62			40.0	40.0	35.0
65			32.0	35.0	25.0
67			32.0	32.0	25.0
70			30.0	30.0	100.0
75			100.0	100.0	

* An additional 10% for ages below 55 and 20% for ages 55 to 59 are assumed to retire in the first year eligible for unreduced retirement with 30 years of service.

** An additional 20% are assumed to retire in the first year eligible for unreduced retirement with 30 years of service before age 60.

*** In addition, 100% are assumed to retire with 30 years of service on or before age 50 and 75% are assumed to retire with 30 years of service after age 50 but before age 55.



Schedule B – Statement of Actuarial Assumptions and Methods

DEATHS AFTER RETIREMENT: The RP-2000 Combined Mortality Table projected to 2025 with projection scale BB and set forward 2 years for both males and females is used for the period after service retirement and for dependent beneficiaries. The RP-2000 Disabled Mortality Table projected to 2025 with projection scale BB and set back 7 years for males and set forward 3 years for females is used for the period after disability retirement. There is a margin for future mortality improvement in the tables used by the System. Based on the results of the most recent experience study adopted by the Board on December 17, 2015, the numbers of expected future deaths are 9-12% less than the actual number of deaths that occurred during the study period for service retirements and beneficiaries and for disability retirements.

We are aware that the Society of Actuaries has released a new public sector mortality table, and although we will look at the fit of this table to actual rates of retired member mortality under ERS during the next experience study, we believe that the current assumed rates of mortality remain appropriate for use at this time. The next experience study for ERS will be for the period ending June 30, 2019, at which time we will conduct analysis that will consider a fully generational improvement methodology.

Representative values of the assumed annual rates of mortality after service retirement are as follows:

Age	Males	Females	Age	Males	Females
40	0.1127%	0.0790%	65	1.1300%	0.8994%
45	0.1609	0.1230	70	1.8697	1.5281
50	0.2474	0.1872	75	3.2147	2.5220
55	0.4246	0.2918	80	5.5160	4.1628
60	0.6985	0.4923	85	9.5631	7.1239



Schedule B – Statement of Actuarial Assumptions and Methods

**State Employee OPEB Fund Members Participating in the
Georgia Judicial Retirement System**

SALARY INCREASES: 4.50% annually

SEPARATIONS BEFORE SERVICE RETIREMENT: Representative values of the assumed annual rates of separation before service retirement are as follows:

Age	Annual Rates of			
	Withdrawal	Death		Disability
		Males	Females	
20	4.0%	.032%	.018%	.03%
25	4.0	.035	.019	.03
30	4.0	.041	.025	.05
35	4.0	.072	.044	.08
40	6.0	.100	.066	.10
45	4.0	.140	.104	.18
50	3.0	.198	.156	.25
55	2.5	.281	.223	.45
60	2.5	.409	.306	.73
65	2.5	.560	.430	1.18

RETIREMENT: The assumed annual rates of retirement are shown below.

<u>Age</u>	<u>Annual Rates of Retirement</u>
60	15%
61	10
62	12
63 – 64	10
65 – 69	15
70 – 74	25
75	100



Schedule B – Statement of Actuarial Assumptions and Methods

DEATHS AFTER RETIREMENT: Since the System has minimal post-retirement mortality experience, the System uses the same mortality tables used for the Employees' Retirement System of Georgia. The RP-2000 Combined Mortality Table projected to 2025 with projection scale BB and set forward 2 years for both males and females is used for the period after retirement and for dependent beneficiaries. For the period after disability retirement, the RP-2000 Disabled Mortality Table projected to 2025 with projection scale BB and set back 7 years for males and set forward 3 years for females is used. There is a margin for future mortality improvement in the tables used by the System. Based on the results of the most recent experience study adopted by the Board on December 17, 2015, the numbers of expected future deaths are 9-12% less than the actual number of deaths that occurred during the study period for healthy retirees and disabled retirees. Representative values of the assumed annual rates of mortality for service retirements and beneficiaries are as follows:

Age	Males	Females	Age	Males	Females
40	0.113%	0.079%	65	1.130%	0.899%
45	0.161	0.123	70	1.870	1.528
50	0.247	0.187	75	3.215	2.522
55	0.425	0.292	80	5.516	4.163
60	0.699	0.492	85	9.563	7.124



Schedule B – Statement of Actuarial Assumptions and Methods

**State Employee OPEB Fund Members Participating in the
Georgia Legislative Retirement System**

SALARY INCREASES: None.

SEPARATIONS BEFORE SERVICE RETIREMENT: Representative values of the assumed annual rates of separation before service retirement are as follows:

Age	Annual Rates of		
	Withdrawal	Death	
		Males	Females
20	8.0%	.032%	.018%
25	8.0	.035	.019
30	8.0	.041	.025
35	8.0	.072	.044
40	8.0	.100	.066
45	8.5	.140	.104
50	8.5	.198	.156
55	9.0	.281	.223
60	9.0	.409	.306
65	9.0	.560	.430

SERVICE RETIREMENT: The assumed annual rates of retirement are shown below:

Age	Annual Rate	Age	Annual Rate
60	10%	66	12%
61	10%	67	15%
62	15%	68	12%
63	10%	69	12%
64	10%	70-74	20%
65	12%	75	100%

DEATHS AFTER RETIREMENT: Since the System has minimal post-retirement mortality experience, the System uses the same mortality tables used for the Employees' Retirement System of Georgia. The RP-2000 Combined Mortality Table projected to 2025 with projection scale BB and set forward 2 years for both males and females is used for the period after service retirement and for dependent beneficiaries. Since there are no disability retirements in the System, there are no disability mortality rates utilized at this time. There is a margin for future mortality improvement in the tables used by the System. Based on the results of the most recent experience study adopted



Schedule B – Statement of Actuarial Assumptions and Methods

by the Board on December 17, 2015, the numbers of expected future deaths are 9-12% less than the actual number of deaths that occurred during the study period for healthy retirees.

Representative values of the assumed annual rates of mortality after service retirement are as follows:

Age	Males	Females	Age	Males	Females
40	.113%	.079%	65	1.130%	.899%
45	.161	.123	70	1.870	1.528
50	.247	.187	75	3.215	2.522
55	.425	.292	80	5.516	4.163
60	.699	.492	85	9.563	7.124

Note: Approximately 7% of State Employee OPEB Fund members who are included in the State Employee OPEB Fund Total OPEB Liability participate in the Georgia Teachers Retirement System. Assumptions for these members can be found in the GASB 74 report for the School Employee OPEB Fund as of measurement date June 30, 2019.



SCHEDULE C

SCHEDULE OF DIFFERENCES BETWEEN EXPECTED AND ACTUAL EXPERIENCE

Measurement Date	Difference Between Expected and Actual Experience	Recognition Period (Years)	Increase/(Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Differences Between Expected and Actual Experience					
			Expensed this year	Deferred Year 1	Deferred Year 2	Deferred Year 3	Deferred Year 4	Thereafter
June 30, 2017	\$0	4.32	\$0	\$0	\$0	\$0	\$0	\$0
June 30, 2018	(\$267,124,127)	4.35	(\$61,407,845)	(\$61,407,845)	(\$61,407,845)	(\$21,492,747)	\$0	\$0
June 30, 2019	(\$371,756,790)	4.34	(\$85,658,247)	(\$85,658,247)	(\$85,658,247)	(\$85,658,247)	(\$29,123,802)	\$0
			(\$147,066,092)	(\$147,066,092)	(\$147,066,092)	(\$107,150,994)	(\$29,123,802)	\$0

Measurement Date	Changes Due to Experience (Decreases) / Increases (a)	Amounts Recognized in OPEB Expense Through June 30, 2019 Measurement Date (b)	Amounts of Deferred Resources (Inflows)/Outflows (a) – (b)
June 30, 2017	\$0	\$0	\$0
June 30, 2018	(\$267,124,127)	(\$122,815,690)	(\$144,308,437)
June 30, 2019	(\$371,756,790)	(\$85,658,247)	(\$286,098,543)
		(\$208,473,937)	(\$430,406,980)



SCHEDULE C(continued)

SCHEDULE OF DIFFERENCES BETWEEN PROJECTED AND ACTUAL EARNINGS ON PLAN INVESTMENTS

Measurement Date	Difference Between Projected and Actual Earnings on OPEB Plan Investments	Recognition Period (Years)	Increase/(Decrease) in OPEB Expense Arising from the Recognition of the Effects of the Differences Between Projected and Actual Earnings on OPEB Plan Investments					
			Expensed this year	Deferred Year 1	Deferred Year 2	Deferred Year 3	Deferred Year 4	Thereafter
June 30, 2017	\$21,814,368	5.0	\$4,362,874	\$4,362,874	\$4,362,872	\$0	\$0	\$0
June 30, 2018	\$59,214,584	5.0	\$11,842,917	\$11,842,917	\$11,842,917	\$11,842,916	\$0	\$0
June 30, 2019	\$49,323,611	5.0	\$9,864,722	\$9,864,722	\$9,864,722	\$9,864,722	\$9,864,723	\$0
			\$26,070,513	\$26,070,513	\$26,070,511	\$21,707,638	\$9,864,723	\$0

Measurement Date	Difference Between Projected and Actual Earnings on OPEB Plan Investments		Amounts Recognized in OPEB Expense Through June 30, 2019 Measurement Date		Amounts of Deferred Resources (Inflows)/Outflows	
	(a)	(b)	(a)	(b)	(a) – (b)	
June 30, 2017	\$21,814,368		\$13,088,622		\$8,725,746	
June 30, 2018	\$59,214,584		\$23,685,834		\$35,528,750	
June 30, 2019	\$49,323,611		\$9,864,722		\$39,458,889	
			\$46,639,178		\$83,713,385	



SCHEDULE C(continued)

SCHEDULE OF CHANGES OF ASSUMPTION

Increase/(Decrease) in OPEB Expense Arising from the Recognition of the Effects of Assumption Changes								
Measurement Date	Assumption Changes	Recognition Period (Years)	Expensed this year	Deferred Year 1	Deferred Year 2	Deferred Year 3	Deferred Year 4	Thereafter
June 30, 2017	(\$383,932,246)	4.32	(\$88,873,205)	(\$88,873,205)	(\$28,439,426)	\$0	\$0	\$0
June 30, 2018	(\$963,394,129)	4.35	(\$221,469,915)	(\$221,469,915)	(\$221,469,915)	(\$77,514,469)	\$0	\$0
June 30, 2019	(\$676,764,727)	4.34	(\$155,936,573)	(\$155,936,573)	(\$155,936,573)	(\$155,936,573)	(\$53,018,435)	\$0
			(\$466,279,693)	(\$466,279,693)	(\$405,845,914)	(\$233,451,042)	(\$53,018,435)	\$0

Measurement Date	Changes Due to Assumptions (Decreases) / Increases (a)	Amounts Recognized in OPEB Expense Through June 30, 2019 Measurement Date (b)	Amounts of Deferred Resources (Inflows)/Outflows (a) – (b)
June 30, 2017	(\$383,932,246)	(\$266,619,615)	(\$117,312,631)
June 30, 2018	(\$963,394,129)	(\$442,939,830)	(\$520,454,299)
June 30, 2019	(\$676,764,727)	(\$155,936,573)	(\$520,828,154)
		(\$865,496,018)	(\$1,158,595,084)



SCHEDULE C(continued)

Net Increase/(Decrease) in OPEB Expense						
	Expensed This Year	Deferred Year 1	Deferred Year 2	Deferred Year 3	Deferred Year 4	Thereafter
Differences between Expected and Actual Experience	(\$147,066,092)	(\$147,066,092)	(\$147,066,092)	(\$107,150,994)	(\$29,123,802)	\$0
Changes of Assumptions	(\$466,279,693)	(\$466,279,693)	(\$405,845,914)	(\$233,451,042)	(\$53,018,435)	\$0
Differences between Projected and Actual Earnings on OPEB Plan Investments	\$26,070,513	\$26,070,513	\$26,070,511	\$21,707,638	\$9,864,723	\$0
Grand Total	(\$587,275,272)	(\$587,275,272)	(\$526,841,495)	(\$318,894,398)	(\$72,277,514)	\$0



Schedule D – Actuarial Cost Method

1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently 7.30% for disclosure), of each participant's expected retiree health benefit at retirement or death based on his age and service. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the probability of his terminating with a service, disability or survivor's benefit. The present value of the expected benefits payable on account of the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Plan on account of the present group of participants and beneficiaries.
2. The service cost is determined using the "entry age normal" method. Using this method, a calculation is made to determine the uniform and constant percentage rate of employer contribution which, if applied to the compensation of each participant during the entire period of his anticipated covered service, would be required in addition to the contributions of the participant to meet the cost of all benefits payable on his behalf.
3. The present value of future unfunded accrued liability contributions is determined by subtracting the present value of prospective normal contributions together with the current assets held, from the present value of expected benefits to be paid from the Plan.