



Actuarial Valuation Report

Board of Regents of the University System of Georgia

Postretirement Medical Plan – GASB 75

For the Fiscal Year Ending June 30, 2018

Measurement Date June 30, 2017

Introduction

This report documents the results of the actuarial valuation for the fiscal year ending June 30, 2018 of the postretirement medical plan for the Board of Regents of the University System of Georgia. The plan is a single-employer plan and does not issue a separate financial statement. As a result, all reporting requirements are included in the employer's financial statement. These results are based on a Measurement Date of June 30, 2017. The information provided in this report is intended strictly for documenting information relating to company and plan disclosure and reporting requirements.

Determinations for purposes other than the financial accounting requirements may be significantly different from the results in this report. Thus, the use of this report for purposes other than those expressed here may not be appropriate.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board. In addition, the valuation results are based on our understanding of the financial accounting and reporting requirements under U.S. Generally Accepted Accounting Principles as set forth in Government Accounting Standards Board Statement 75 (GASB 75) including any guidance or interpretations provided by the Board of Regents of the University System of Georgia and/or its audit partners prior to the issuance of this report. The information in this report is not intended to supersede or supplant the advice and interpretations of the Board of Regents of the University System of Georgia Board of Regents of the University System of Georgia's auditors. Additional disclosures may be required under GASB 74.

Future actuarial measurements may differ significantly from the current measurements presented in this report due (but not limited to) to such factors as the following:

- Plan experience differing from that anticipated by the economic or demographic assumptions;
- Changes in actuarial methods or in economic or demographic 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 plan provisions or applicable law.

Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

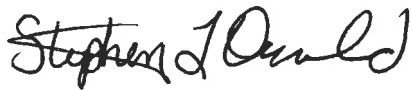
Funded status measurements shown in this report are determined based on various measures of plan assets and liabilities. For entity and plan disclosure and reporting purposes, funded status is determined using plan assets measured at market value. Plan liabilities are measured based on the interest rates and other assumptions summarized in the Actuarial Assumptions and Methods section of this report.

These funded status measurements may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, and funded status measurements for plan sponsor and plan disclosure and reporting purposes may not be appropriate for assessing the need for or the amount of future contributions. In conducting the valuation, we have relied on personnel, plan design, health care claim cost, and asset information supplied by Board of Regents of the University System of Georgia as of the valuation date. While we cannot verify the accuracy of all the information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it has produced appropriate results.

The actuarial assumptions and methods used in this valuation are described in the Actuarial Assumptions and Methods section of this report. Board of Regents of the University System of Georgia selected the economic and demographic assumptions and prescribed them for use for purposes of compliance with GASB 75. Aon provided guidance with respect to these assumptions, and it is our belief that the assumptions represent reasonable expectations of anticipated plan experience.

The undersigned are familiar with the near-term and long-term aspects of OPEB valuations and collectively meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. The information provided in this report is dependent upon various factors as documented throughout this report, which may be subject to change. Each section of this report is considered to be an integral part of the actuarial opinions.

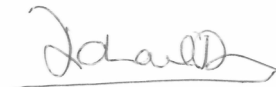
To our knowledge, no colleague of Aon providing services to Board of Regents of the University System of Georgia has any material direct or indirect financial interest in Board of Regents of the University System of Georgia. Thus, we believe there is no relationship existing that might affect our capacity to prepare and certify this actuarial report for Board of Regents of the University System of Georgia.



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Accounting Requirements

Development of GASB 75 Net OPEB Expense

Calculation Details

The following table illustrates the Net OPEB Liability under GASB 75.

	Fiscal Year Ending 6/30/2017	Fiscal Year Ending 6/30/2018
(1) OPEB Liability		
(a) Retired Participants and Beneficiaries		
Receiving Payment	\$ 1,693,806,770	\$ 1,535,314,968
(b) Active Participants	\$ 2,511,545,534	\$ 2,692,268,127
(c) Total	\$ 4,205,352,304	\$ 4,227,583,095
(2) Plan Fiduciary Net Position	\$ 2,898,502	\$ 7,857,223
(3) Net OPEB Liability	\$ 4,202,453,802	\$ 4,219,725,872
(4) Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	0.07%	0.19%
(5) Deferred Outflow of Resources for Contributions Made After Measurement Date	\$ 99,583,903	TBD

Expense

The following table illustrates the OPEB expense under GASB 75.

	Fiscal Year Ending 6/30/2018
(1) Service Cost	\$ 211,512,614
(2) Interest Cost	124,612,066
(3) Expected Investment Return	(239,153)
(4) Employee Contributions	0
(5) Administrative Expense	5,044,837
(6) Plan Changes	0
(7) Amortization of Unrecognized	
(a) Liability (Gain)/Loss	20,687,444
(b) Asset (Gain)/Loss	33,238
(c) Assumption Change (Gain)/Loss	<u>(58,374,937)</u>
(8) Total Expense	\$ 303,276,109

Shown below are details regarding the calculation of Service, Interest Cost and Expected Investment Return components of the Expense.

	Fiscal Year Ending 6/30/2018
(1) Development of Service Cost:	
(a) Normal Cost at Beginning of Measurement Period	\$ 211,512,614
(2) Development of Interest Cost:	
(a) Total OPEB Liability at Beginning of Measurement Period	\$ 4,205,352,304
(b) Normal Cost at Beginning of Measurement Period	211,512,614
(c) Actual Benefit Payments	(89,653,306)
(d) Discount Rate	<u>2.85%</u>
(e) Interest Cost	\$ 124,612,066
(3) Development of Expected Investment Return:	
(a) Plan Fiduciary Net Position at Beginning of Measurement Period	\$ 2,898,502
(b) Actual Contributions—Employer	99,583,903
(c) Actual Contributions—Employee	0
(d) Actual Benefit Payments	(89,653,306)
(e) Administrative Expenses	(5,044,837)
(f) Other	0
(g) Expected Return on Assets	<u>4.50%</u>
(h) Expected Return	\$ 239,153

Reconciliation of Net OPEB Liability

Shown below are details regarding the Total OPEB Liability, Plan Fiduciary Net Position, and Net OPEB Liability for the Measurement Period from June 30, 2016 to June 30, 2017:

	Increase (Decrease)		
	Total OPEB Liability (a)	Plan Fiduciary Net Position (b)	Net OPEB Liability (c) = (a) – (b)
Balance Recognized at 6/30/2017 ¹ (Based on 6/30/2016 Measurement Date)	\$ 4,205,352,304	\$ 2,898,502	\$ 4,202,453,802
Changes Recognized for the Fiscal Year:			
Service Cost	211,512,614	N/A	211,512,614
Interest on the Total OPEB Liability	124,612,066	N/A	124,612,066
Changes of Benefit Terms	0	N/A	0
Differences Between Expected and Actual Experience	123,090,290	N/A	123,090,290
Changes of Assumptions	(347,330,873)	N/A	(347,330,873)
Benefit Payments	(89,653,306)	(89,653,306)	0
Contributions From the Employer	N/A	99,583,903	(99,583,903)
Contributions From the Employee	N/A	0	0
Net Investment Income	N/A	72,961	(72,961)
Administrative Expense	N/A	(5,044,837)	5,044,837
Net Changes	<u>22,230,791</u>	<u>4,958,721</u>	<u>17,272,070</u>
Balance Recognized at 6/30/2018 (Based on 6/30/2017 Measurement Date)	\$ 4,227,583,095	\$ 7,857,223	\$ 4,219,725,872

¹ Based on census data as of June 30, 2016.

Liability (Gain)/Loss

The following table illustrates the liability gain/loss under GASB 75.

	Fiscal Year Ending 6/30/2018
(1) OPEB Liability at Beginning of Measurement Period	\$ 4,205,352,304
(2) Service Cost	211,512,614
(3) Interest on the Total OPEB Liability	124,612,066
(4) Changes of Benefit Terms	0
(5) Changes of Assumptions	(347,330,873)
(6) Benefit Payments	(89,653,306)
(7) Expected OPEB Liability at End of Measurement Period	4,104,492,805
(8) Actual OPEB Liability at End of Measurement Period	<u>4,227,583,095</u>
(9) OPEB Liability (Gain)/Loss	\$ 123,090,290
(10) Average Future Working Life Expectancy	5.95
(11) OPEB Liability (Gain)/Loss Amortization	\$ 20,687,444

Asset (Gain)/Loss

The following table illustrates the asset gain/loss under GASB 75.

	Fiscal Year Ending 6/30/2018
(1) OPEB Asset at Beginning of Measurement Period	\$ 2,898,502
(2) Contributions—Employer	99,583,903
(3) Contributions—Employee	0
(4) Expected Investment Income	239,153
(5) Benefit Payments	(89,653,306)
(6) Administrative Expense	(5,044,837)
(7) Other	0
(8) Expected OPEB Asset at End of Measurement Period	8,023,415
(9) Actual OPEB Asset at End of Measurement Period	<u>7,857,223</u>
(10) OPEB Asset (Gain)/Loss	\$ 166,192
(11) Amortization Factor	<u>5.00</u>
(12) OPEB Asset (Gain)/Loss Amortization	\$ 33,238

Deferred Outflows/Inflows

The following table illustrates the Deferred Inflows and Outflows as of June 30, 2018 under GASB 75.

	Deferred Outflows	Deferred Inflows
(1) Difference Between Actual and Expected Experience	\$ 102,402,846	\$ 0
(2) Net Difference Between Expected and Actual Earnings on OPEB Plan Investments	\$ 132,954	\$ 0
(3) Assumption Changes	<u>\$ 0</u>	<u>\$ (288,955,936)</u>
(4) Sub Total	\$ 102,535,800	\$ (288,955,936)
(5) Contributions Made in Fiscal Year Ending 6/30/2018 After Measurement Date	<u> *</u>	<u>\$ N/A</u>
(6) Total	*	\$ (288,955,936)

Amortization of Deferred Inflows/Outflows

The table below lists the amortization bases included in the deferred inflows/outflows as of June 30, 2018.

Date Established	Type of Base	Period		Balance		Annual Payment
		Original	Remaining	Original	Remaining	
6/30/2017	Liability (Gain)/Loss	5.95	4.95	\$ 123,090,290	\$ 102,402,846	\$ 20,687,444
6/30/2017	Asset (Gain)/Loss	5.00	4.00	\$ 166,192	\$ 132,954	\$ 33,238
6/30/2017	Assumptions	5.95	4.95	\$ (347,330,873)	<u>\$ (288,955,936)</u>	<u>\$ (58,374,937)</u>
Total Charges					\$ (186,420,136)	\$ (37,654,255)

Amounts Recognized in the deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in the OPEB expense as follows:

Year End June 30:

2019	\$ (37,654,255)
2020	\$ (37,654,255)
2021	\$ (37,654,255)
2022	\$ (37,654,255)
2023	\$ (35,803,116)
Total Thereafter	\$ 0

Plan Fiduciary Net Position Projection

The following table illustrates the projection of the fiduciary net position for use in the calculation of the discount rate as of June 30, 2018.

(\$ in millions)

Year Ending June 30 ²	Beginning Fiduciary Net Position (a)	Total Contributions (b)	Benefit Payments (c)	Administrative Expenses (d)	Investment Earnings (e)	Ending Fiduciary Net Position ¹ (f)
2018	\$7.9	\$96.2	\$96.2	\$5.0	\$0.0	\$2.9
2019	2.9	94.6	114.5	0.0	0.0	0.0
2020	0.0	87.6	126.5	0.0	0.0	0.0
2021	0.0	72.5	130.8	0.0	0.0	0.0
2022	0.0	66.4	142.9	0.0	0.0	0.0
2023	0.0	53.1	146.3	0.0	0.0	0.0
2024	0.0	36.8	145.8	0.0	0.0	0.0
2025	0.0	23.1	149.5	0.0	0.0	0.0
2026	0.0	13.7	156.1	0.0	0.0	0.0
2027	0.0	1.0	158.4	0.0	0.0	0.0
2028	0.0	0.0	166.6	0.0	0.0	0.0
2029	0.0	0.0	188.6	0.0	0.0	0.0
2030	0.0	0.0	211.2	0.0	0.0	0.0
2031	0.0	0.0	229.9	0.0	0.0	0.0
2032	0.0	0.0	252.5	0.0	0.0	0.0
2033	0.0	0.0	285.5	0.0	0.0	0.0
2034	0.0	0.0	310.7	0.0	0.0	0.0
2035	0.0	0.0	321.1	0.0	0.0	0.0
2036	0.0	0.0	332.0	0.0	0.0	0.0
2037	0.0	0.0	305.3	0.0	0.0	0.0
2038	0.0	0.0	301.6	0.0	0.0	0.0
2039	0.0	0.0	315.6	0.0	0.0	0.0
2040	0.0	0.0	314.0	0.0	0.0	0.0
2041	0.0	0.0	323.6	0.0	0.0	0.0
2042	0.0	0.0	345.2	0.0	0.0	0.0
2043	0.0	0.0	361.9	0.0	0.0	0.0
2044	0.0	0.0	409.5	0.0	0.0	0.0
2045	0.0	0.0	455.2	0.0	0.0	0.0
2046	0.0	0.0	480.6	0.0	0.0	0.0
2047	0.0	0.0	523.9	0.0	0.0	0.0

¹ (f) = (a) + (b) – (c) – (d) + (e)

² Years later than 2047 were omitted from this table.

Plan Fiduciary Net Position

The last year in which projected benefit payments are due from the Plan is 2115.

The Plan's projected fiduciary net position at the end of 2019 is \$0, based on the valuation completed for the fiscal year ending June 30, 2018.

As such, the Plan's fiduciary net position was not projected to be available to make all projected future benefit payments for current Plan members. The projected "depletion date" when projected benefits are not covered by projected assets is 2019. Therefore, the long-term expected rate of return on Plan investments of 4.50% per annum was not applied to all periods of projected benefit payments to determine the total OPEB liability as of June 30, 2018 shown earlier in this report, pursuant to paragraph 48 of GASB Statement No. 74.

In projecting the Plan's fiduciary net position the following assumptions were made:

1. Interest rate for discounting was 4.50% per annum.
2. Projected total contributions are simply the pay as you go costs of the plan. Because the current contribution policy is not designed to pre-fund the plan, the unfunded liability is not expected to be paid off at any point in the future.
3. Assumed contributions are based on the contribution policy of the Board of Regents of the University System of Georgia as communicated by Claire M. Arnold on September 14, 2017. For purposes of the discount rate, the plan's policy is considered to be effectively pay as you go.
4. Projected benefit payments have been determined in accordance with Paragraphs 30-35 of GASB Statement No. 75, and are based on the closed group of active, retired members and beneficiaries as of June 30, 2017. Benefit payments are assumed to be paid mid-year.
5. Administrative expenses are \$5.0 million for 2018. Expenses are assumed to be paid mid-year.
6. Projected investment earnings are based on the assumed investment rate of return of 4.50% per annum. The first year's earnings have been adjusted to account for the actual return through June 30, 2018. See *Appendices* for target asset allocation used to support 4.5% investment rate of return.

Interest Rate Sensitivity

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2017:

	1% Decrease (1.85%)	Current Rate (2.85%)	1% Increase (3.85%)
(1) Total OPEB Liability	\$ 5,055,213,905	\$ 4,205,352,304	\$ 3,548,213,902
(2) Plan Fiduciary Net Position	<u>\$ 2,898,502</u>	<u>\$ 2,898,502</u>	<u>\$ 2,898,502</u>
(3) Net OPEB Liability	\$ 5,052,315,403	\$ 4,202,453,802	\$ 3,545,315,400

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2018:

	1% Decrease (2.58%)	Current Rate (3.58%)	1% Increase (4.58%)
(1) Total OPEB Liability	\$ 5,048,795,574	\$ 4,227,583,095	\$ 3,587,391,804
(2) Plan Fiduciary Net Position	<u>\$ 7,857,223</u>	<u>\$ 7,857,223</u>	<u>\$ 7,857,223</u>
(3) Net OPEB Liability	\$ 5,040,938,351	\$ 4,219,725,872	\$ 3,579,534,581

Healthcare Cost Trend Sensitivity

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2017:

	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 3,558,992,153	\$ 4,205,352,304	\$ 5,055,584,426
(2) Plan Fiduciary Net Position	<u>\$ 2,898,502</u>	<u>\$ 2,898,502</u>	<u>\$ 2,898,502</u>
(3) Net OPEB Liability	\$ 3,556,093,651	\$ 4,202,453,802	\$ 5,052,685,924

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2018¹:

	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 3,567,362,443	\$ 4,227,583,095	\$ 5,099,854,291
(2) Plan Fiduciary Net Position	<u>\$ 7,857,223</u>	<u>\$ 7,857,223</u>	<u>\$ 7,857,223</u>
(3) Net OPEB Liability	\$ 3,559,505,220	\$ 4,219,725,872	\$ 5,091,997,068

¹ The annual HRA increase was also assumed to change by +/-1%.

Disclosure—Changes in the Net OPEB Liability and Related Ratios

Changes in the Net OPEB Liability and Related Ratios¹

	Fiscal Year Ending	
	2017	2018
Total OPEB Liability		
Service Cost	N/A	\$211,512,614
Interest Cost	N/A	\$124,612,066
Changes of Benefit Terms	N/A	\$0
Differences Between Expected and Actual Experiences	N/A	\$123,090,290
Changes of Assumptions	N/A	\$(347,330,873)
Benefit Payments	N/A	\$(89,653,306)
Net Change in Total OPEB Liability	N/A	\$22,230,791
Total OPEB Liability (Beginning)	N/A	\$4,205,352,304
Total OPEB Liability (Ending)	\$4,205,352,304	\$4,227,583,095
Plan Fiduciary Net Position		
Contributions—Employer	N/A	\$99,583,903
Contributions—Member	N/A	\$0
Net Investment Income	N/A	\$72,961
Benefit Payments	N/A	\$(89,653,306)
Administrative Expense	N/A	\$(5,044,837)
Other	N/A	\$0
Net Change in Plan Fiduciary Net Position	N/A	\$4,958,721
Plan Fiduciary Net Position (Beginning)	N/A	\$2,898,502
Plan Fiduciary Net Position (Ending)	\$2,898,502	\$7,857,223
Net OPEB Liability (Ending)	\$4,202,453,802	\$4,219,725,872
Net Position as a Percentage of OPEB Liability	0.07%	0.19%
Covered-Employee Payroll	\$3,087,013,265	\$2,855,308,903
Net OPEB Liability as a Percentage of Payroll	136.13%	147.79%

¹ GASB 75 was effective first for employer fiscal years beginning after June 15, 2017.

Appendix

Participant Data

The actuarial valuation was based on personnel information from Board of Regents of the University System of Georgia records as of July 1, 2017. Following are some of the pertinent characteristics from the personnel data as of that date. Prior year characteristics are also provided for comparison purposes. Both age and service have been determined using years and months as of the valuation date.

	Valuation Date	
	07/01/2016	07/01/2017
(1) Number of Participants		
(a) Active Employees		
(i) Currently Receiving Medical	39,485	40,838
(ii) Currently Not Receiving Medical	<u>7,785</u>	<u>8,982</u>
(iii) Total	47,270	49,820
(b) Inactive	<u>17,500</u>	<u>20,591</u>
(c) Total	64,770	70,411
(2) Active Statistics		
(a) Average Age	45	45
(b) Average Service	9	9
(3) Inactive Statistics (In Pay Status)		
(a) Average Age	72	73
(b) Single Coverage	2,111	1,944
(c) Family Coverage	1,336	1,299
(d) HRA Contribution only	14,053	17,348

Asset Allocation

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of OPEB plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the OPEB plan's target asset allocation as of June 30 are summarized in the following table¹:

Asset Class	Expected Nominal Rate of Return	Expected Real Rate of Return	Allocation
Equity	6.87%	4.26%	30.00%
Fixed Income	4.04%	1.50%	70.00%
Total Portfolio	4.89%	2.33%	100.00%

The discount rate used to measure the total OPEB liability is 3.58%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs of future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on these assumptions, the OPEB Fund's fiduciary net position was not projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on OPEB Plan investments was not applied to all periods of projected benefit payments to determine the total OPEB liability.

¹ These rates of return reflect the plan sponsor's best estimate.

Health Care Claims Development

The sample per capita claims cost assumptions shown below by age, benefit, and plan represent the true underlying baseline experience estimated for USG sponsored postretirement benefits and costs. These rates are used in the expense calculation for the period July 1, 2017–June 30, 2018.

Age	Med/Rx/Admin
50	\$ 7,041
55	\$ 8,601
60	\$ 10,575
64	\$ 12,215

The average per capita claims costs were developed from actual claims experience and enrollment for the three-year period July 1, 2014 through June 30, 2017. Claims and enrollment information was provided by USG’s health care vendors. The annualized paid claims experience for each respective historical base period was adjusted to an incurred basis by assuming claim lag of one month for medical and zero months for prescription drugs. No adjustment was necessary for large claims. The average per capita claims costs from each respective historical base period were trended to the mid-point of the annual period following the valuation date.

In order to improve the credibility of a single projection estimate, a combination of estimates from the distinct historical periods was used, placing 50% credibility on the most recent period, 33% on the next most recent, and 17% on the oldest period. Finally, average per capita claims costs were then age-adjusted based on the demographics of the population, and the assumed health care aging factors shown in the table below.

Per capita administration and other fixed costs were developed and added onto the per capita claims cost assumptions. These per capita assumed administrative costs and stop-loss insurance fees were based on actual 2017 per employee rates, which were converted from a per employee basis to a per member basis using the most recent census file rates provided. For 2017, \$385 annually per person was added for pre-65 retirees and spouses.

Medicare eligible retirees receive a contribution of \$2,736 annually to an HRA. Since this flat dollar amount is all that is valued post 65, no post 65 claims were developed. This amount is assumed to increase at a rate of 4.5% annually.

Health Care Aging (Morbidity) Factors

Since health care costs increase with age, and an OPEB valuation is by its nature an analysis of a closed group that will age throughout the measurement, the effect that this aging of the population will have on claims costs must be reflected in the valuation. The claim costs for medical and prescription drugs were assumed to increase with age according to the table below.

Age Band	Composite
40–44	3.3%
45–49	3.8%
50–54	4.3%
55–59	4.4%
60–64	3.8%
65–69	3.1%
70–74	2.1%
75–79	1.4%
80–84	1.3%
85–89	0.6%
90+	0.0%

The aging factor assumptions shown above were based on normative data analyses, along with consideration of the results from the 2013 Society of Actuaries sponsored study “Health Care Costs—From Birth to Death” prepared by Dale H. Yamamoto, reporting on the effect of age on claims costs. In addition to age, this study shows the effect of service type (medical vs. pharmacy) and gender on claims costs.

Health Care Cost Trend Rates

The health care cost trend assumptions shown below were based on national average information from a variety of sources, including S&P Healthcare Economic Index, NHCE data, plan renewal data, and vendor Rx reports, with adjustments based on the provisions of the benefits sponsored by USG. Note that the final trend rates were rounded to the nearest 25 basis points.

Year	Pre-65 Composite
2017 to 2018	7.30%
2018 to 2019	7.10%
2019 to 2020	6.90%
2020 to 2021	6.70%
2021 to 2022	6.40%
2022 to 2023	6.20%
2023 to 2024	6.10%
2024 to 2025	6.00%
2025 to 2026	5.60%
2026 to 2027	5.40%
2027 to 2028	5.30%
2028 to 2029	4.90%
2029 to 2030	4.70%
2030 to 2031+	4.50%

Health Care Reform Excise Tax Adjustment

For the excise tax, the overall value of the benefit was compared to the projected excise tax thresholds in each future year. The key assumptions for determining the excise tax are:

- Plan costs were developed on a two-tier basis (individual and individual plus spouse) for all retirees and assumed to increase with the valuation trend
- The 2020 cost thresholds are assumed to be \$10,583 for individual and \$28,533 for family coverage (\$12,169 and \$31,784 for non-Medicare retirees).
- 2020 thresholds are adjusted accordingly by the amount that the accumulated 2010-2020 cost increases, observed for the BCBS “standard” plan option under the FEHBP program, exceeds 55%.
- After 2020, the cost thresholds are indexed by CPI (CPI+1% in 2021 only). CPI is assumed to be 2.5% in all future years.

Our excise tax model determined the additional trend loads to be applied to the existing valuation trend table in order to reflect the present value of expected tax amounts (40%) of the excess over the thresholds.

On a blended basis, the excise tax threshold is estimated to be reached in fiscal year 2020, which means the first trend load is applied to the valuation trend from 2019 to 2020.

Actuarial Assumptions and Methods

Discount Rate	2.85% as of 6/30/2016 ¹ 3.58% as of 6/30/2017
20 Year Municipal Bond Rate	2.85% as of 6/30/2016 3.58% as of 6/30/2017
Municipal Bond Rate Basis	Bond Buyer GO 20-Bond Municipal Bond Index
Expected Return on Assets	4.50%
Salary Increases	4.00%
General Inflation	2.50%
Salary Growth	3.00%
Retirement Rates	See Table 1.
Mortality Rates	Healthy: RP-2014 Mortality Table with Generational Improvements by Scale MP-2014. Disabled: RP-2000 Disabled Mortality Table projected to 2025 with projection scale BB (set forward two years for males and four years for females).
Withdrawal Rates	See Table 2.
Disability Rates	See Table 3.
Employees Included in the Calculations	All employees who meet retirement or disability eligibility may participate in the Board's medical plan. 80% of all employees (regardless of current medical coverage) are assumed to elect medical coverage, and 100% are assumed to elect life insurance coverage.
Future Medical Plan Election	Future retirees who elect medical coverage are expected to elect between available options as follows.

	POS	BCBS HDHP	Kaiser HMO	HMO
Pre Medicare	62%	17%	16%	5%

¹ Based on the employer's funding policy, projected assets are not projected to always be sufficient to cover projected benefit payments, so the EROA is not used as the discount rate.

Marital Status and Age of Spouse

The following marriage, family coverage, and spouse's age difference assumption have been made for active participants:

	Male	Female
Elect Spouse Coverage	61%	61%
Spouse Age Difference	3 years younger	3 years older

Cost Method

Entry Age Normal

Amortization Method

Closed amortization period for initial unfunded and subsequent actuarial gains/losses.

Asset Method

Fair Value

Post-65 Liability Load

1% load on Post-65 Liability for the \$750,000 HRA fund

Life Insurance Expense Load

N/A

Administrative Expenses

N/A

Measurement Date

June 30, 2017

Measurement Period

June 30, 2016 to June 30, 2017

Valuation Date

July 1, 2017

Census Data

as of March 1, 2017

Changes in Financial Accounting Methods/Assumptions Since the Prior Year

Method Changes

The financial accounting valuation reflects the following method changes:

- Effective for the Fiscal Year ending 6/30/2018 the Board of Regents of the University System of Georgia adopted GASB 75.

Assumption Changes

The financial accounting valuation reflects the following assumption changes:

- Expected claims costs were updated to reflect actual claims experience.
- Trend was reset based on current conditions.
- Disability, Termination, Retirement, and Disabled Mortality were updated to reflect the current Teachers Retirement System of Georgia assumptions.
- The discount rate was updated from 2.85% as of June 30, 2016 to 3.58% as of June 30, 2017.

The Board of Regents of the University System of Georgia selected the economic and demographic assumptions and prescribed them for use for purposes of compliance with GASB 75. Aon provided guidance with respect to the mortality assumption, and it is our belief that these assumptions represent reasonable expectations of anticipated plan experience. All other assumptions were selected by the Board of Regents of the University System of Georgia and align with the Teacher's Retirement System of Georgia Pension valuation. We are not able to evaluate the reasonability of these assumptions because such an evaluation would require significant additional work beyond the scope of our assignment.

Table 1

Annual Retirement Rates

Age	Male		Female	
	Less Than 30 Years of Service	30 or More Years of Service	Less Than 30 Years of Service	30 or more Years of Service
50	3.50%	60.00%	3.00%	55.00%
55	5.00%	40.00%	5.50%	37.00%
60	20.00%	36.00%	25.00%	43.00%
61	18.00%	32.00%	25.00%	43.00%
62	26.00%	36.00%	25.00%	43.00%
63	22.00%	33.00%	25.00%	43.00%
64	22.00%	32.00%	25.00%	43.00%
65	30.00%	30.00%	31.00%	31.00%
66	32.00%	32.00%	33.00%	33.00%
67	30.00%	30.00%	30.00%	30.00%
68	30.00%	30.00%	30.00%	30.00%
69	28.00%	28.00%	30.00%	30.00%
70	30.00%	30.00%	30.00%	30.00%

Table 2

Annual Withdrawal Rates

Male Age	Years of Service		
	0-4	5-9	10+
20	25.00%	0.00%	0.00%
25	17.00%	12.00%	0.00%
30	13.50%	7.00%	8.00%
35	13.50%	6.00%	3.00%
40	13.00%	6.00%	2.50%
45	12.00%	6.00%	2.30%
50	11.00%	5.50%	2.50%
55	11.00%	5.50%	3.00%
60	12.00%	5.50%	0.00%
64	13.00%	6.50%	0.00%

Female Age	Years of Service		
	0-4	5-9	10+
20	28.00%	0.00%	0.00%
25	13.50%	16.00%	0.00%
30	13.50%	8.00%	6.00%
35	13.00%	7.00%	3.50%
40	11.00%	6.50%	3.00%
45	10.50%	6.00%	2.30%
50	10.00%	5.00%	2.40%
55	10.00%	5.00%	2.75%
60	10.50%	5.50%	0.00%
64	13.00%	6.50%	0.00%

Table 3

Disability Rates

Attained Age	Male	Female
20	0.0135%	0.0100%
25	0.0135%	0.0130%
30	0.0210%	0.0140%
35	0.0330%	0.0190%
40	0.0550%	0.0390%
45	0.0900%	0.0650%
50	0.1700%	0.1400%
55	0.3000%	0.3400%
60	0.0000%	0.0000%
65	0.0000%	0.0000%

Plan Provisions

General Eligibility Rules

Former employees and beneficiaries satisfy retirement under any one of the following conditions:

- (1) Disabled with at least 10 years of service,
- (2) Retire at age 60 with at least 10 years of service,
- (3) Retire with 25 years of state of Georgia benefited service credit, of which the last five years of employment must be continuous with the USG, or an early pension benefit penalty will apply
- (4) Retire with 30 years of state of Georgia benefited service, of which the last five years must have been continuous with the USG

Medical and Drug Benefits Covered

Eligible pre-65 retirees generally have a choice of a POS, HDHP, and two HMOs

Plan Type	POS		HDHP		BCBS HMO	Kaiser HMO
	In	Out	In	Out		
Deductible	\$ 500	\$ 1,500	\$2,000	\$4,000	\$ 0	\$ 0
Coinsurance	100%	60%	80%	60%	100%	100%
Copayment	\$ 20	\$ 0	N/A	N/A	\$ 30	\$ 20
Out-Of-Pocket Limit	\$ 1,250	\$ 3,750	\$3,500	\$7,000	\$ 5,500	\$ 6,350

Employee Costs

The chart below shows the calendar year 2017 monthly retiree cost of medical and drug:

	POS	HDHP	BCBS HMO	Kaiser HMO
Pre Medicare				
Individual	\$177.00	\$ 74.00	\$195.04	\$152.26
Retiree Plus Spouse	\$388.64	\$ 162.72	\$426.50	\$333.66

Spouse's Covered

Spouses of retirees, spouses of active employees eligible for retirement, or surviving spouses of retirees of the Board of Regents who meet the above conditions may elect medical coverage.

Life

Retirees receive a \$25,000 life insurance benefit.

Plan Changes Since the Prior Year

The financial accounting valuation does not reflect any plan changes.