



GASB 75 Actuarial Valuation Report

The State of Tennessee

Tennessee Plan

For the Fiscal Year Ending June 30, 2021

Measurement Date June 30, 2020

Introduction

This report documents the results of the actuarial valuation for the fiscal year ending June 30, 2021 of the Tennessee Plan (Medicare Supplement) for The State of Tennessee. All reporting requirements are included in the employer's financial statement. These results are based on a Measurement Date of June 30, 2020 and include benefits provided to the retirees and covered spouses by the State and certain Local Employers. The information provided in this report is intended strictly for documenting information relating to company and plan disclosure and reporting requirements for the State and Local Employers.

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 Company 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 State of Tennessee's auditors. Additional disclosures may be required under GASB 74.

A valuation model was used to develop the liabilities for the July 1, 2020 valuation. The valuation model relies on ProVal software, which was developed by Winklevoss Technologies, LLC. Experts within Aon selected this software and determined it is appropriate for performing valuations. We coded and reviewed the software for the provisions, assumptions, methods, and data of the Tennessee Plan.

Models are also used to develop underlying future trend rates for Medicare Advantage plans. The Aon consulting team leveraged expertise of Health experts within Aon as it relates to reviewing the models developed by experts outside of Aon, and those used for development of future trend rates.

The valuation model outputs various cost scenarios. The "1% increase" and "1% decrease" interest rate scenarios vary only the discount rate assumption, in order to illustrate the impact of a change in that assumption in isolation. In practice, certain other assumptions would also be expected to vary when the discount rate changes. Therefore, the output from these scenarios should be used solely for assessing the impact of the discount rate in isolation and may not represent a realistic set of results for other purposes.

The "1% increase" and "1% decrease" healthcare cost trend scenarios vary only the healthcare cost trend assumption, in order to illustrate the impact of a change in that assumption in isolation. Therefore, the output from these scenarios should be used solely for assessing the impact of the healthcare cost trend in isolation and may not represent a realistic set of results for other purposes.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to (but not limited 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 The State of Tennessee 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 The State of Tennessee 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. The State of Tennessee 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.

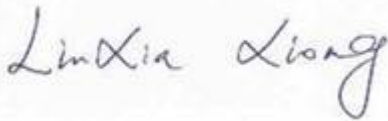
To our knowledge, no colleague of Aon providing services to The State of Tennessee has any material direct or indirect financial interest in The State of Tennessee. Thus, we believe there is no relationship existing that might affect our capacity to prepare and certify this actuarial report for The State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



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Accounting Requirements— State Employees

Development of GASB 75 Net OPEB Expense—State Employees

Calculation Details

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

	Fiscal Year Ending 6/30/2020	Fiscal Year Ending 6/30/2021
(1) OPEB Liability		
(a) Retired Participants and Beneficiaries Receiving Payment	\$ 115,411,743	\$ 132,803,536
(b) Active Participants	\$ 59,633,907	\$ 73,389,266
(c) Total	\$ 175,045,650	\$ 206,192,802
(2) Plan Fiduciary Net Position	\$ 0	\$ 0
(3) Net OPEB Liability	\$ 175,045,650	\$ 206,192,802
(4) Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	0.00%	0.00%
(5) Deferred Outflow of Resources for Contributions Made After Measurement Date	\$ 8,102,746	\$ 8,320,831

Expense

The following table illustrates the OPEB expense under GASB 75.

	Fiscal Year Ending 6/30/2020	Fiscal Year Ending 6/30/2021
(1) Service Cost	\$ 2,419,963	\$ 2,620,186
(2) Interest Cost	6,201,217	6,095,094
(3) Expected Investment Return	0	0
(4) Employee Contributions	0	0
(5) Administrative Expense	0	0
(6) Plan Changes	0	0
(7) Amortization of Unrecognized		
(a) Liability (Gain)/Loss	(1,033,673)	(1,170,537)
(b) Asset (Gain)/Loss	0	0
(c) Assumption Change (Gain)/Loss	<u>(1,790,426)</u>	<u>3,117,472</u>
(8) Total Expense	\$ 5,797,081	\$ 10,662,215

Deferred Outflows/Inflows—State Employees

The following table illustrates the Deferred Inflows and Outflows as of June 30, 2021 under GASB 75.

	Deferred Outflows	Deferred Inflows
(1) Difference Between Actual and Expected Experience	\$ 0	\$ 4,594,105
(2) Net Difference Between Expected and Actual Earnings on OPEB Plan Investments	0	0
(3) Assumption Changes	<u>28,603,230</u>	<u>7,041,908</u>
(4) Sub Total	\$ 28,603,230	\$ 11,636,013
(5) Contributions Made in Fiscal Year Ending June 30, 2021 After Measurement Date	<u>8,320,831</u>	N/A
(6) Total	\$ 36,924,061	\$ 11,636,013

Amortization of Deferred Inflows/Outflows

The table below lists the amortization bases included in the deferred inflows/outflows as of June 30, 2021.

Date Established	Type of Base	Period		Balance		Annual Payment
		Original	Remaining	Original	Remaining	
6/30/2021	Liability (Gain)/Loss	6.40	5.40	(\$875,930)	(\$739,066)	(136,864)
6/30/2021	Assumptions	6.40	5.40	31,410,548	26,502,650	4,907,898
6/30/2020	Liability (Gain)/Loss	6.60	4.60	(1,423,094)	(991,854)	(215,620)
6/30/2020	Assumptions	6.60	4.60	3,013,876	2,100,580	456,648
6/30/2019	Liability (Gain)/Loss	6.50	3.50	(5,317,344)	(2,863,185)	(818,053)
6/30/2019	Assumptions	6.50	3.50	(1,234,631)	(664,802)	(189,943)
6/30/2018	Assumptions	7.10	3.10	(14,605,630)	(6,377,106)	(2,057,131)
	Total Charges				16,967,217	1,946,935

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:

2022	\$ 1,946,935
2023	\$ 1,946,935
2024	\$ 1,946,935
2025	\$ 4,302,350
2026	\$ 4,915,648
Total Thereafter	\$ 1,908,414

Interest Rate Sensitivity—State Employees

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2020:

	1% Decrease (2.51%)	Current Rate (3.51%)	1% Increase (4.51%)
(1) Total OPEB Liability	\$ 198,153,071	\$ 175,045,650	\$ 155,780,448
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 198,153,071	\$ 175,045,650	\$ 155,780,448

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2021:

	1% Decrease (1.21%)	Current Rate (2.21%)	1% Increase (3.21%)
(1) Total OPEB Liability	\$ 235,490,067	\$ 206,192,802	\$ 181,949,242
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 235,490,067	\$ 206,192,802	\$ 181,949,242

Healthcare Cost Trend Sensitivity – State Employees

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2020:

	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 175,045,650	\$ 175,045,650	\$ 175,045,650
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 175,045,650	\$ 175,045,650	\$ 175,045,650

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2021:

	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 206,192,802	\$ 206,192,802	\$ 206,192,802
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 206,192,802	\$ 206,192,802	\$ 206,192,802

Disclosure—Changes in the Net OPEB Liability and Related Ratios—State Employees

Changes in the Net OPEB Liability and Related Ratios¹

	Fiscal Year Ending			
	June 30, 2018	June 30, 2019	June 30, 2020	June 30, 2021
Total OPEB Liability				
Service Cost	\$ 4,111,648	\$ 3,399,466	\$ 2,419,963	\$ 2,620,186
Interest Cost	5,548,070	6,297,261	6,201,217	6,095,094
Changes of Benefit Terms	0	0	0	0
Differences Between Expected and Actual Experiences	0	(5,317,344)	(1,423,094)	(875,930)
Changes of Assumptions	(14,605,630)	(1,234,631)	3,013,876	31,410,548
Benefit Payments	(7,368,000)	(7,541,894)	(8,029,994)	(8,102,746)
Net Change in Total OPEB Liability	\$ (12,313,912)	\$ (4,397,142)	\$ 2,181,968	\$ 31,147,152
Total OPEB Liability (Beginning)	189,574,736	177,260,824	172,863,682	175,045,650
Total OPEB Liability (Ending)	\$ 177,260,824	\$ 172,863,682	\$ 175,045,650	\$ 206,192,802
Covered-Employee Payroll	\$ 3,084,980,820	\$ 3,128,242,102	\$ 3,063,046,226	\$ 3,028,520,623
Net OPEB Liability as a Percentage of Payroll	5.75%	5.53%	5.71%	6.81%

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

Accounting Requirements— Local Education

Development of GASB 75 Net OPEB Expense—Local Education

Calculation Details

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

Collective	Fiscal Year Ending June 30, 2020	Fiscal Year Ending June 30, 2021
(1) Collective OPEB Liability	\$ 306,347,902	\$ 349,297,245
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 306,347,902	\$ 349,297,245
(4) Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	0%	0%
(5) Deferred Outflow of Resources for Contributions Made After Measurement Date	\$ 9,309,593	\$ 9,049,850
Employer Share	Fiscal Year Ending June 30, 2020	Fiscal Year Ending June 30, 2021
(1) Employer Share of OPEB Liability	\$ 83,679,428	\$ 83,203,876
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 83,679,428	\$ 83,203,876
(4) Plan Fiduciary Net Position as a Percentage of the Employer Share of OPEB Liability	0%	0%
(5) Deferred Outflow of Resources for Contributions Made After Measurement Date	\$ 1,491,016	\$ 1,268,161
(6) Employer Proportion	27.32%	23.82%
State Share	Fiscal Year Ending June 30, 2020	Fiscal Year Ending June 30, 2021
(1) State Share of OPEB Liability	\$ 222,668,474	\$ 266,093,369
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 222,668,474	\$ 266,093,369
(4) Plan Fiduciary Net Position as a Percentage of the Employer Share of OPEB Liability	0%	0%
(5) Deferred Outflow of Resources for Contributions Made After Measurement Date	\$ 7,818,577	\$ 7,781,689
(6) State Proportion	72.68%	76.18%

Development of GASB 75 Net OPEB Expense—Local Education

Expense

The following table illustrates the OPEB expense under GASB 75.

	Fiscal Year Ending 6/30/2020	Fiscal Year Ending 6/30/2021
(1) Service Cost	\$ 8,266,940	\$ 7,608,494
(2) Interest Cost	10,192,516	10,857,900
(3) Expected Investment Return	0	0
(4) Employee Contributions	0	0
(5) Administrative Expense	0	0
(6) Plan Changes	21,806	(25,999,226)
(7) Amortization of Unrecognized		
(a) Liability (Gain)/Loss	(7,802,073)	(4,026,075)
(b) Asset (Gain)/Loss	0	0
(c) Assumption Change (Gain)/Loss	<u>(3,161,081)</u>	<u>6,687,465</u>
(8) Total Expense	\$ 7,518,108	\$ (4,871,442)
(a) State Share of Expense	\$ 17,852,536	\$ 19,105,506
(b) Employer Share of Expense	\$ (10,334,428)	\$ (23,976,948)

Collective Deferred Outflows/Inflows—Local Education

The following table illustrates the Deferred Inflows and Outflows as of June 30, 2021 under GASB 75.

	Net Deferred Outflows/(Inflows)
(1) Difference Between Actual and Expected Experience	\$ (18,149,323)
(2) Net Difference Between Expected and Actual Earnings on OPEB Plan Investments	0
(3) Assumption Changes	<u>49,601,925</u>
(4) Sub Total	\$ 31,452,602
(5) Contributions Made in Fiscal Year Ending June 30, 2021 After Measurement Date	<u>9,049,850</u>
(6) Total	\$ 40,502,452

Amortization of Collective Deferred Inflows/Outflows

The table below lists the amortization bases included in the deferred inflows/outflows as of June 30, 2021.

Date Established	Type of Base	Period		Balance		Annual Payment
		Original	Remaining	Original	Remaining	
6/30/2021	Liability (Gain)/Loss	Varies	Varies	\$ (11,788,286)	\$ (10,437,769)	\$ (1,350,517)
6/30/2021	Assumptions	Varies	Varies	\$ 71,580,054	61,657,063	9,922,991
6/30/2020	Liability (Gain)/Loss	Varies	Varies	\$ 1,315,339	5,299,060	574,236
6/30/2020	Assumptions	Varies	Varies	\$ 17,676,853	13,345,026	2,129,341
6/30/2019	Liability (Gain)/Loss	Varies	Varies	\$ (25,304,969)	(13,010,614)	(3,249,794)
6/30/2019	Assumptions	Varies	Varies	\$ (5,604,605)	(3,121,223)	(803,697)
6/30/2018	Assumptions	Varies	Varies	\$ (40,520,037)	<u>(22,278,941)</u>	<u>(4,561,170)</u>
	Total Charges				\$ 31,452,602	\$ 2,661,390

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:

2022	\$ 1,647,531
2023	\$ 1,647,360
2024	\$ 1,810,391
2025	\$ 3,462,311
2026	\$ 4,999,565
Total Thereafter	\$ 17,885,444

Employer Deferred Outflows/Inflows—Local Education

The following table illustrates the Deferred Inflows and Outflows as of June 30, 2021 under GASB 75.

	Net Deferred Outflows/(Inflows)
(1) Difference Between Actual and Expected Experience	\$ (9,238,063)
(2) Net Difference Between Expected and Actual Earnings on OPEB Plan Investments	0
(3) Proportion Changes	(70,992,306)
(4) Assumption Changes	<u>17,173,157</u>
(5) Sub Total	\$ (63,057,212)
(6) Contributions Made in Fiscal Year Ending June 30, 2021 After Measurement Date	<u>1,268,161</u>
(7) Total	\$ (61,789,051)

Amortization of Employer Deferred Inflows/Outflows

The table below lists the amortization bases included in the deferred inflows/outflows as of June 30, 2021.

Date Established	Type of Base	Period		Balance		Annual Payment
		Original	Remaining	Original	Remaining	
6/30/2021	Change in Proportion	Varies	Varies	\$ (8,522,940)	\$ (7,393,015)	\$ (1,129,925)
6/30/2021	Liability (Gain)/Loss	Varies	Varies	\$ (1,786,775)	(1,473,306)	(313,469)
6/30/2021	Assumptions	Varies	Varies	\$ 22,744,535	19,308,251	3,436,284
6/30/2020	Change in Proportion	Varies	Varies	\$ 1,659,640	1,670,746	(5,553)
6/30/2020	Liability (Gain)/Loss	Varies	Varies	\$ (2,020,334)	(1,254,749)	(382,791)
6/30/2020	Assumptions	Varies	Varies	\$ 5,530,209	3,895,828	817,190
6/30/2019	Change in Proportion	Varies	Varies	\$(107,321,949)	(65,270,037)	(14,017,304)
6/30/2019	Liability (Gain)/Loss	Varies	Varies	\$ (10,930,486)	(6,510,008)	(1,473,492)
6/30/2019	Assumptions	Varies	Varies	\$ (3,283,168)	(1,724,397)	(519,589)
6/30/2018	Assumptions	Varies	Varies	\$ (9,007,201)	<u>(4,306,525)</u>	<u>(1,175,169)</u>
	Total Charges				\$(63,057,212)	\$ (14,763,818)

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:

2022	\$ (14,763,818)
2023	\$ (14,763,818)
2024	\$ (14,641,295)
2025	\$ (13,170,827)
2026	\$ (5,092,299)
Total Thereafter	\$ (625,155)

State Deferred Outflows/Inflows—Local Education

The following table illustrates the Deferred Inflows and Outflows as of June 30, 2021 under GASB 75.

	Net Deferred Outflows/(Inflows)
(1) Difference Between Actual and Expected Experience	\$ (8,911,260)
(2) Net Difference Between Expected and Actual Earnings on OPEB Plan Investments	0
(3) Proportion Changes	70,992,306
(4) Assumption Changes	<u>32,428,768</u>
(5) Sub Total	\$ 94,509,814
(6) Contributions Made in Fiscal Year Ending June 30, 2021 After Measurement Date	<u>7,781,689</u>
(7) Total	\$ 102,291,503

Amortization of Employer Deferred Inflows/Outflows

The table below lists the amortization bases included in the deferred inflows/outflows as of June 30, 2021.

Date Established	Type of Base	Period		Balance		Annual Payment
		Original	Remaining	Original	Remaining	
6/30/2021	Change in Proportion	Varies	Varies	\$ 8,522,940	\$ 7,393,015	\$ 1,129,925
6/30/2021	Liability (Gain)/Loss	Varies	Varies	\$ (10,001,511)	(8,964,463)	(1,037,048)
6/30/2021	Assumptions	Varies	Varies	\$ 48,835,519	42,348,812	6,486,707
6/30/2020	Change in Proportion	Varies	Varies	\$ (1,659,640)	(1,670,746)	5,553
6/30/2020	Liability (Gain)/Loss	Varies	Varies	\$ 3,335,673	6,553,809	957,027
6/30/2020	Assumptions	Varies	Varies	\$ 12,146,644	9,449,198	1,312,151
6/30/2019	Change in Proportion	Varies	Varies	\$ 107,321,949	65,270,037	14,017,304
6/30/2019	Liability (Gain)/Loss	Varies	Varies	\$ (14,374,483)	(6,500,606)	(1,776,302)
6/30/2019	Assumptions	Varies	Varies	\$ (2,321,437)	(1,396,826)	(284,108)
6/30/2018	Assumptions	Varies	Varies	\$ (31,512,836)	<u>(17,972,416)</u>	<u>(3,386,001)</u>
	Total Charges				\$ 94,509,814	\$ 17,425,208

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:

2022	\$ 16,411,349
2023	\$ 16,411,178
2024	\$ 16,451,686
2025	\$ 16,633,138
2026	\$ 10,091,864
Total Thereafter	\$ 18,510,599

Interest Rate Sensitivity—Local Education

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2020:

	1% Decrease (2.51%)	Current Rate (3.51%)	1% Increase (4.51%)
Collective			
(1) Total OPEB Liability	\$ 359,760,221	\$ 306,347,902	\$ 263,562,186
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 359,760,221	\$ 306,347,902	\$ 263,562,186
Employer			
(1) Total OPEB Liability	\$ 100,785,409	\$ 83,679,428	\$ 70,298,089
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 100,785,409	\$ 83,679,428	\$ 70,298,089
State			
(1) Total OPEB Liability	\$ 258,974,812	\$ 222,668,474	\$ 193,264,097
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 258,974,812	\$ 222,668,474	\$ 193,264,097

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2021:

	1% Decrease (1.21%)	Current Rate (2.21%)	1% Increase (3.21%)
Collective			
(1) Total OPEB Liability	\$ 415,525,534	\$ 349,297,245	\$ 296,862,905
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 415,525,534	\$ 349,297,245	\$ 296,862,905
Employer			
(1) Total OPEB Liability	\$ 102,692,085	\$ 83,203,876	\$ 68,270,391
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 102,692,085	\$ 83,203,876	\$ 68,270,391
State			
(1) Total OPEB Liability	\$ 312,833,449	\$ 266,093,369	\$ 228,592,514
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 312,833,449	\$ 266,093,369	\$ 228,592,514

Healthcare Cost Trend Sensitivity—Local Education

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2020:

Collective	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 292,647,438	\$ 306,347,902	\$ 324,684,297
(2) Plan Fiduciary Net Position	\$ <u>0</u>	\$ <u>0</u>	\$ <u>0</u>
(3) Net OPEB Liability	\$ 292,647,438	\$ 306,347,902	\$ 324,684,297

Employer	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 71,564,196	\$ 83,679,428	\$ 99,893,845
(2) Plan Fiduciary Net Position	\$ <u>0</u>	\$ <u>0</u>	\$ <u>0</u>
(3) Net OPEB Liability	\$ 71,564,196	\$ 83,679,428	\$ 99,893,845

State	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 221,083,242	\$ 222,668,474	\$ 224,790,452
(2) Plan Fiduciary Net Position	\$ <u>0</u>	\$ <u>0</u>	\$ <u>0</u>
(3) Net OPEB Liability	\$ 221,083,242	\$ 222,668,474	\$ 224,790,452

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2021:

Collective	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 332,137,557	\$ 349,297,245	\$ 372,871,461
(2) Plan Fiduciary Net Position	\$ <u>0</u>	\$ <u>0</u>	\$ <u>0</u>
(3) Net OPEB Liability	\$ 332,137,557	\$ 349,297,245	\$ 372,871,461

Employer	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 68,237,634	\$ 83,203,876	\$ 103,775,680
(2) Plan Fiduciary Net Position	\$ <u>0</u>	\$ <u>0</u>	\$ <u>0</u>
(3) Net OPEB Liability	\$ 68,237,634	\$ 83,203,876	\$ 103,775,680

State	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 263,899,923	\$ 266,093,369	\$ 269,095,781
(2) Plan Fiduciary Net Position	\$ <u>0</u>	\$ <u>0</u>	\$ <u>0</u>
(3) Net OPEB Liability	\$ 263,899,923	\$ 266,093,369	\$ 269,095,781

Disclosure—Changes in the Net OPEB Liability and Related Ratios—Local Education

Changes in the Net OPEB Liability and Related Ratios¹

	Fiscal Year Ending			
	June 30, 2018	June 30, 2019	June 30, 2020	June 30, 2021
Total OPEB Liability				
Service Cost	\$ 18,040,730	\$ 14,692,202	\$ 8,266,940	\$ 7,608,494
Interest Cost	12,596,955	14,487,447	10,192,516	10,857,900
Changes of Benefit Terms	0	(107,668,188)	21,806	(25,999,226)
Differences Between Expected and Actual Experiences	0	(25,336,895)	1,315,339	(11,788,286)
Changes of Assumptions	(41,553,655)	(5,604,605)	17,676,853	71,580,054
Benefit Payments	(9,990,137)	(10,384,065)	(8,762,132)	(9,309,593)
Net Change in Total OPEB Liability	\$ (20,906,107)	\$ (119,814,104)	\$ 28,711,322	\$ 42,949,343
Total OPEB Liability (Beginning)	418,356,791	397,450,684	277,636,580	306,347,902
Total OPEB Liability (Ending)	\$ 397,450,684	\$ 277,636,580	\$ 306,347,902	\$ 349,297,245
Proportion Determination				
Employer Proportion	45.89%	25.69%	27.32%	23.82%
Employer Share of Total OPEB Liability (Beginning)	\$ 188,499,466	\$ 182,406,633	\$ 71,338,419	\$ 83,679,428
Employer Share of Total OPEB Liability (End)	\$ 182,406,633	\$ 71,338,419	\$ 83,679,428	\$ 83,203,876
State Proportion	54.11%	74.31%	72.68%	76.18%
State Share of Total OPEB Liability (Beginning)	\$ 229,857,325	\$ 215,044,051	\$ 206,298,161	\$ 222,668,474
State Share of Total OPEB Liability (End)	\$ 215,044,051	\$ 206,298,161	\$ 222,668,474	\$ 266,093,369
Covered-Employee Payroll	N/A	N/A	N/A	N/A
Net OPEB Liability as a Percentage of Payroll	N/A	N/A	N/A	N/A

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

Accounting Requirements— Local Government

Development of GASB 75 Net OPEB Expense—Local Government

Calculation Details

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

	Fiscal Year Ending 6/30/2020	Fiscal Year Ending 6/30/2021
(1) Total OPEB Liability	\$ 9,084,125	\$ 11,877,611
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 9,084,125	\$ 11,877,611
(4) Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	0%	0%
(5) Deferred Outflow of Resources for Contributions Made After Measurement Date	\$ 302,432	\$ 300,195

Expense

The following table illustrates the OPEB expense under GASB 75.

	Fiscal Year Ending 6/30/2020	Fiscal Year Ending 6/30/2021
(1) Service Cost	\$ 298,556	\$ 194,950
(2) Interest Cost	407,663	320,434
(3) Expected Investment Return	0	0
(4) Employee Contributions	0	0
(5) Administrative Expense	0	0
(6) Plan Changes	(2,312,753)	544,212
(7) Amortization of Unrecognized		
(a) Liability (Gain)/Loss	(350,781)	(1,406,218)
(b) Asset (Gain)/Loss	0	0
(c) Assumption Change (Gain)/Loss	<u>(328,080)</u>	<u>743,453</u>
(8) Total Expense	\$ (2,285,395)	\$ 396,831

Deferred Outflows/Inflows—Local Government

The following table illustrates the Deferred Inflows and Outflows as of June 30, 2021 under GASB 75.

	Net Deferred Outflows/(Inflows)
(1) Difference Between Actual and Expected Experience	\$ (2,652,843)
(2) Net Difference Between Expected and Actual Earnings on OPEB Plan Investments	0
(3) Assumption Changes	<u>680,194</u>
(4) Sub Total	\$ (1,972,649)
(5) Contributions Made in Fiscal Year Ending June 30, 2021 After Measurement Date	<u>300,195</u>
(6) Total	\$ (1,672,454)

Amortization of Deferred Inflows/Outflows

The table below lists the amortization bases included in the deferred inflows/outflows as of June 30, 2021.

Date Established	Type of Base	Period		Balance		Annual Payment
		Original	Remaining	Original	Remaining	
6/30/2021	Liability (Gain)/Loss	Varies	Varies	(\$85,527)	(\$355,031)	\$269,504
6/30/2021	Assumptions	Varies	Varies	2,121,849	1,140,607	981,242
6/30/2020	Liability (Gain)/Loss	Varies	Varies	(313,266)	(729,900)	(104,312)
6/30/2020	Assumptions	Varies	Varies	170,733	100,060	19,489
6/30/2019	Liability (Gain)/Loss	Varies	Varies	(4,640,562)	(1,567,912)	(1,571,410)
6/30/2019	Assumptions	Varies	Varies	(81,732)	(36,593)	(8,497)
6/30/2018	Assumptions	Varies	Varies	(1,453,725)	(523,880)	(248,781)
	Total Charges				(\$1,972,649)	(\$662,765)

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:

2022	\$ (421,613)
2023	\$ (424,883)
2024	\$ (423,987)
2025	\$ (419,949)
2026	\$ (316,922)
Total Thereafter	\$ 34,705

Interest Rate Sensitivity—Local Government

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2020:

	1% Decrease (2.51%)	Current Rate (3.51%)	1% Increase (4.51%)
(1) Total OPEB Liability	\$ 10,421,110	\$ 9,084,125	\$ 7,978,657
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 10,421,110	\$ 9,084,125	\$ 7,978,657

The following table illustrates the impact of interest rate sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2021:

	1% Decrease (1.21%)	Current Rate (2.21%)	1% Increase (3.21%)
(1) Total OPEB Liability	\$ 13,800,642	\$ 11,877,611	\$ 10,304,374
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 13,800,642	\$ 11,877,611	\$ 10,304,374

Healthcare Cost Trend Sensitivity – Local Government

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2020:

	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 8,806,921	\$ 9,084,125	\$ 9,404,664
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 8,806,921	\$ 9,084,125	\$ 9,404,664

The following table illustrates the impact of healthcare cost trend sensitivity on the Net OPEB Liability for fiscal year ending June 30, 2021:

	1% Decrease	Trend Rate	1% Increase
(1) Total OPEB Liability	\$ 11,346,525	\$ 11,877,611	\$ 12,524,809
(2) Plan Fiduciary Net Position	<u>0</u>	<u>0</u>	<u>0</u>
(3) Net OPEB Liability	\$ 11,346,525	\$ 11,877,611	\$ 12,524,809

Disclosure—Changes in the Net OPEB Liability and Related Ratios – Local Government

Changes in the Net OPEB Liability and Related Ratios¹

	Fiscal Year Ending			
	June 30, 2018	June 30, 2019	June 30, 2020	June 30, 2021
Total OPEB Liability				
Service Cost	\$ 712,428	\$ 608,560	\$ 298,556	\$ 194,950
Interest Cost	431,487	502,782	407,663	320,434
Changes of Benefit Terms	0	4,231,383	(2,312,753)	544,212
Differences Between Expected and Actual Experiences	0	(4,749,355)	(313,266)	(85,527)
Changes of Assumptions	(1,604,678)	(353,893)	170,733	2,121,849
Benefit Payments	(89,925)	(88,300)	(257,146)	(302,432)
Net Change in Total OPEB Liability	\$ (550,688)	\$ 151,177	\$ (2,006,213)	\$ 2,793,486
Total OPEB Liability (Beginning)	14,109,464	13,558,776	11,090,338	9,084,125
Total OPEB Liability (Ending)	\$ 13,558,776	\$ 13,709,953	\$ 9,084,125	\$ 11,877,611
Covered-Employee Payroll	N/A	N/A	N/A	N/A
Net OPEB Liability as a Percentage of Payroll	N/A	N/A	N/A	N/A

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 State of Tennessee records as of July 1, 2020. Following are some of the pertinent characteristics from the personnel data as of that date. Both age and service have been determined using years and months as of the valuation date.

	State Employees	Local Education	Local Government
Health Care Participants			
Active Participants			
Number	46,880	62,922	3,494
Average Age	51.2	46.5	51.2
Average Service	16.0	15.8	13.9
Inactive Participants			
Currently Receiving	15,457	16,039	281
Not Currently Receiving	8,922	8,342	247
Total	24,379	24,381	528
Average Age	69.5	69.8	68.2
Total Participants			
Number	71,259	87,303	4,022

Actuarial Assumptions and Methods

The following outlines the assumptions and methods used in determining the GASB expense calculations for the Tennessee Plan (Medicare Supplement) for the fiscal year ending June 30, 2021.

Actuarial Method	Entry Age Normal Cost Method
Normal Cost	Determined for each active employee as the Actuarial Present Value of benefits allocated to the valuation year. The benefit attributed to the valuation year is that incremental portion of the total projected benefit earned during the year in accordance with the plan provisions. This allocation is based on each individual's service between date of hire and date the individual becomes fully eligible for benefits.
Asset Valuation Method	Market Value of Assets as of the Measurement Date
Discount Rate	2.21% based on Bond Buyer GO 20-Bond Municipal Bond Index as of the Measurement Date
Mortality Rates	<p>Healthy: RP-2014 Employees and Healthy Annuitants mortality table projected generationally with MP-2016 from the central year.</p> <p>For Local Education, post-retirement tables are White Collar and adjusted with an 11% load for males and a -2% load for females, projected generationally from 2014 with MP-2016. For State and Local Government, post-retirement tables are Blue Collar and adjusted with an 2% load for males and a -3% load for females.</p> <p>Disabled: Reflects those used by TCRS and are taken from the gender distinct table published in the IRS Revenue Ruling 96-7 for disabled lives with a 10% load.</p>
Valuation Date	July 1, 2020
Measurement Date	June 30, 2020
Census Data	July 1, 2020
Fiscal Year Ending	June 30, 2021

Inflation	Long-term price inflation is assumed to be 2.10% per year.
Data Assumptions	In cases of a discrepancy between expected service and service reported for this valuation, imputed service was used.
Salary Increases	Assumed salary increases are the same as used by TCRS: 8.72% at age 20 graded to 3.44% at age 70 (with 4.00% weighted average).
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 the State of Tennessee.

Year	Post-65
2021	7.56%
2022	6.16%
2023	5.88%
2024	5.92%
2025	5.64%
2026	5.37%
2027	5.10%
2028	4.82%
2029	4.58%
2030	4.50%
2031+	4.50%

Premium subsidies provided by the State and employers that adopted Resolution 31 are assumed to remain unchanged for the entire projection.

Demographic Assumptions- General	Unless noted otherwise, demographic assumptions employed in this Actuarial Valuation were the same as those employed in the July 1, 2017 for a Group I employees in the Pension Actuarial Valuation of the Tennessee Consolidated Retirement System (TCRS). These demographic assumptions were developed by TCRS from an Actuarial Experience Study (undertaken on behalf of TCRS) and are considered appropriate for use in this OPEB Actuarial Valuation. These include assumed rates of future salary increases, termination, mortality, disability, and retirement.
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Retirement Rates	See Table 1
Withdrawal Rates	See Table 2
Disability Rates	See Table 3
Full Medicare Supplement Premium	\$140.55/Month

Coverage Acceptance Rates Following are the assumptions as to future Medical Coverage Acceptance Rates. Acceptance rates, presented below, result from an analysis of the choice pattern exhibited by employees retiring in recent years.

Coverage Acceptance for Post-65 Elections	
Subsidy Level	Total Acceptance Rate
Full Premium	100%
\$50.00	75%
\$37.50	60%
\$25.00	50%
None	25%
Acceptance decrease due to diminishing value of the subsidy	0.50%
Minimum Ultimate Acceptance Rate	25.00%

Acceptance rates listed above are increased by 20% for members in Bartlett Municipal Schools, Collierville Municipal School District, Davidson County Schools, Germantown Municipal Schools, Rutherford County Schools and Shelby County Schools.

Future participation Active employees currently declining coverage are assumed to opt into the plan in the future and accept retiree coverage at a 10% rate. Covered employees are assumed to remain covered until retirement.

Decrement Timing Decrements of all types are assumed to occur at the middle of the year.

Eligibility Testing Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

Decrement Relativity Decrement rates are treated as absolute rates of decrement.

Method Changes

There have been no method changes since the prior year.

Assumption Changes

The financial accounting valuation reflects the following assumption changes:

- The discount rate decreased from 3.51% to 2.21%.
 - For the State Employees group, this increased liability by 17.5%.
 - For the Local Education group, this increased liability by 21.2% for the State portion and 30.6% for the Local portion.
 - For the Local Government group, this increased liability by 20.1%.
- Long-term price inflation decreased from 2.20% to 2.10%.
- The medical and drug trend rate assumptions were updated to reflect more recent experience as of the Measurement Date. Given that most participating agencies receive a flat subsidy under the Medicare Supplement Plan, the impact of updated trend assumptions was minimal.

Actuarial Assumptions and Methods

Table 1—Retirement Rates-State Employees

Early and Normal Retirement Prior to Age 60 with 10 Years of Service Unreduced Retirement Annual Rates					
Year of Eligibility	Male	Female	Year of Eligibility	Male	Female
1	6.0%	7.5%	14	12.0%	12.0%
2	6.0%	7.5%	15	14.0%	14.0%
3	6.0%	7.5%	16	22.0%	22.0%
4	6.5%	7.5%	17	15.5%	17.0%
5	6.5%	7.5%	18	15.5%	17.0%
6	6.5%	7.5%	19	15.5%	17.0%
7	7.0%	8.0%	20	15.5%	17.0%
8	7.0%	8.0%	21	15.5%	17.0%
9	7.5%	8.0%	22	15.5%	17.0%
10	8.0%	8.0%	23	15.5%	17.0%
11	8.5%	9.0%	24	15.5%	17.0%
12	11.0%	12.0%	25	15.5%	17.0%
13	16.0%	18.0%	26	100.0%	100.0%

An additional 7.5% is added to the rates shown above for employees in a year in which they are first eligible for unreduced retirement prior to age 60. In addition, a 2% load is added to the above table upon reaching age 60.

Normal Retirement Age (60 with 10 Years of Service)

Normal Retirement (Age 60 with 10 Years of Service) Unreduced Retirement Annual Rates		
Age	Male	Female
60	10.5%	11.0%
61	13.0%	14.0%
62	18.0%	20.0%
63	14.0%	14.0%
64	16.0%	16.0%
65	24.0%	24.0%
66-74	17.5%	19.0%
75	100%	100%

These rates do not include separation on account of death or disability.

Table 1—Retirement Rates-Local Education

All rates are unreduced annual rates and do not include separation on account of death or disability.

Early Retirement Prior to Age 60		
Year of Eligibility	Male	Female
1	6.5%	6.5%
2	7.0%	7.0%
3	7.0%	8.0%
4	8.5%	9.0%
5	9.0%	10.0%

Normal Retirement Prior to Age 60 with 30 Years of Service					
Year of Eligibility	Male	Female	Year of Eligibility	Male	Female
1	19.0%	19.0%	14	16.0%	19.5%
2	7.0%	7.0%	15	18.0%	24.0%
3	7.0%	8.0%	16	35.0%	37.5%
4	8.5%	9.0%	17	16.0%	24.0%
5	9.0%	10.0%	18	16.0%	24.0%
6	10.0%	10.0%	19	16.0%	24.0%
7	12.0%	12.0%	20	16.0%	24.0%
8	12.0%	14.0%	21	16.0%	34.0%
9	13.0%	14.0%	22	17.0%	40.0%
10	14.0%	15.0%	23	17.0%	40.0%
11	15.0%	17.0%	24	17.0%	40.0%
12	16.0%	20.0%	25	17.0%	40.0%
13	22.0%	26.0%	26	100.0%	100.0%

Normal Retirement (Age 60 with 10 Years of Service)		
Age	Male	Female
60	15.0%	17.0%
61	16.0%	20.0%
62	22.0%	26.0%
63	16.0%	19.5%
64	18.0%	24.0%
65	35.0%	37.5%
66-69	16.0%	24.0%
70	16.0%	34.0%
71-74	17.0%	40.0%
75	100%	100%

Normal Retirement Age (60 with 15 Years of Service)—an 8% load is added to the above table upon reaching age 15 years of service.

Table 1- Retirement Rates-Local Government

Normal Retirement with 30 Years of Service Unreduced Retirement Annual Rates Prior to Age 60		
Age	Male	Female
50-55	9.0%	8.0%
56	9.0%	9.0%
57	9.5%	9.5%
58	9.5%	10.0%
59	10.0%	11.0%

An additional 7.5% is added to the rates shown above for employees in a year in which they are first eligible for unreduced retirement prior to age 60.

Normal Retirement Age (60 with 10 Years of Service)

Normal Retirement (Age 60 with 10 Years of Service) Unreduced Retirement Annual Rates		
Age	Male	Female
60	10.5%	11.0%
61	15.0%	13.0%
62	20.0%	18.0%
63-64	17.5%	16.0%
65	24.0%	22.0%
66	18.5%	19.0%
67-68	16.0%	19.0%
69	16.5%	19.0%
70-74	18.0%	19.0%
75	100.0%	100.0%

Normal Retirement Age (60 with 15 Years of Service) - a 2% load is added to the above table upon reaching age 15 years of service

These rates do not include separation on account of death or disability.

Table 2

Withdrawal Rates-State Employees

The following table shows sample annual rates of withdrawal for participants. Note, these rates do not include separation due to death or disability. In addition, any employee terminating with at least 5 years of service and who are within 5 years of Normal Retirement are assumed to commence monthly pension benefits and, thus, become eligible to accept retiree medical coverage.

% Separating Within Next Year										
Male										
Years of Service	Attained Age									
	20	25	30	35	40	45	50	55	60	65
0	30.0%	25.4%	23.0%	20.8%	18.6%	16.5%	14.8%	15.3%	17.9%	24.0%
1	24.6%	21.4%	18.6%	16.1%	13.8%	12.0%	11.1%	11.6%	14.4%	20.5%
2	17.8%	14.4%	9.6%	5.2%	2.6%	1.8%	2.2%	2.6%	4.3%	--
3	17.8%	14.4%	9.6%	5.2%	2.6%	1.8%	2.2%	2.6%	4.3%	--
4	17.8%	14.4%	9.6%	5.2%	2.6%	1.8%	2.2%	2.6%	4.3%	--
5	17.8%	14.4%	9.6%	5.2%	2.6%	1.8%	2.2%	2.6%	4.3%	--
6	17.8%	14.4%	9.6%	5.2%	2.6%	1.8%	2.2%	2.6%	4.3%	--
7	17.8%	14.4%	9.6%	5.2%	2.6%	1.8%	2.2%	2.6%	4.3%	--
8	17.8%	14.4%	9.6%	5.2%	2.6%	1.8%	2.2%	2.6%	4.3%	--
9	17.8%	14.4%	9.6%	5.2%	2.6%	1.8%	2.2%	2.6%	4.3%	--
10+	17.8%	14.4%	9.6%	5.2%	2.6%	1.8%	2.2%	2.6%	4.3%	--
Female										
Years of Service	Attained Age									
	20	25	30	35	40	45	50	55	60	65
0	30.0%	25.4%	23.0%	20.8%	18.6%	16.5%	14.8%	15.3%	17.9%	24.0%
1	24.6%	21.4%	18.6%	16.1%	13.8%	12.0%	11.1%	11.6%	14.4%	20.5%
2	18.3%	14.8%	10.3%	6.3%	3.4%	2.2%	2.3%	3.4%	4.9%	--
3	18.3%	14.8%	10.3%	6.3%	3.4%	2.2%	2.3%	3.4%	4.9%	--
4	18.3%	14.8%	10.3%	6.3%	3.4%	2.2%	2.3%	3.4%	4.9%	--
5	18.3%	14.8%	10.3%	6.3%	3.4%	2.2%	2.3%	3.4%	4.9%	--
6	18.3%	14.8%	10.3%	6.3%	3.4%	2.2%	2.3%	3.4%	4.9%	--
7	18.3%	14.8%	10.3%	6.3%	3.4%	2.2%	2.3%	3.4%	4.9%	--
8	18.3%	14.8%	10.3%	6.3%	3.4%	2.2%	2.3%	3.4%	4.9%	--
9	18.3%	14.8%	10.3%	6.3%	3.4%	2.2%	2.3%	3.4%	4.9%	--
10+	18.3%	14.8%	10.3%	6.3%	3.4%	2.2%	2.3%	3.4%	4.9%	--

Table 2

Withdrawal Rates-Local Education Employees

The following table shows sample annual rates of withdrawal for participants. Note, these rates do not include separation due to death of disability. In addition, any employee terminating with at least 5 years of service and who are within 10 years of Normal Retirement are assumed to commence monthly pension benefits and, thus, become eligible to accept retiree medical coverage.

% Separating Within Next Year										
Male										
Years of Service	Attained Age									
	20	25	30	35	40	45	50	55	60	65
0	18.0%	18.0%	18.0%	18.0%	18.0%	18.4%	19.7%	22.1%	25.5%	28.0%
1	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%	14.2%	16.8%	21.6%	23.5%
2+	10.0%	8.5%	6.0%	3.6%	2.0%	1.5%	2.0%	3.1%	4.7%	--
Female										
Years of Service	Attained Age									
	20	25	30	35	40	45	50	55	60	65
0	18.0%	18.0%	18.0%	18.0%	18.0%	18.4%	19.7%	22.1%	25.5%	28.0%
1	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%	14.2%	16.8%	21.6%	23.5%
2+	10.5%	10.0%	7.6%	4.6%	2.3%	1.1%	1.6%	3.8%	5.0%	--

Withdrawal Rates-Local Government Employees

The following table shows sample annual rates of withdrawal for participants. Note, these rates do not include separation due to death of disability. In addition, any employee terminating with at least 5 years of service and who are within 10 years of Normal Retirement are assumed to commence monthly pension benefits and, thus, become eligible to accept retiree medical coverage.

% Separating Within Next Year										
Male										
Years of Service	Attained Age									
	20	25	30	35	40	45	50	55	60	65
0	18.0%	18.0%	18.0%	18.0%	18.0%	18.4%	19.7%	22.1%	25.5%	28.0%
1	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%	14.2%	16.8%	21.6%	23.5%
2+	10.0%	8.5%	6.0%	3.6%	2.0%	1.5%	2.0%	3.1%	4.7%	--
Female										
Years of Service	Attained Age									
	20	25	30	35	40	45	50	55	60	65
0	18.0%	18.0%	18.0%	18.0%	18.0%	18.4%	19.7%	22.1%	25.5%	28.0%
1	13.5%	13.5%	13.5%	13.5%	13.5%	13.5%	14.2%	16.8%	21.6%	23.5%
2+	10.5%	10.0%	7.6%	4.6%	2.3%	1.1%	1.6%	3.8%	5.0%	--

Table 3

Disability Rates--State Employees

The following table shows sample annual rates of disability.

% Becoming Disabled Within Next Year		
Sample Ages	Male	Female
20	0.06%	0.03%
25	0.06%	0.03%
30	0.07%	0.04%
35	0.11%	0.06%
40	0.16%	0.14%
45	0.22%	0.24%
50	0.27%	0.33%
55	0.27%	0.38%
60	--	--
65	--	--

Disability Rates—Local Education Employees

The following table shows sample annual rates of disability.

% Becoming Disabled Within Next Year		
Sample Ages	Male	Female
20	0.01%	0.01%
25	0.01%	0.01%
30	0.01%	0.01%
35	0.03%	0.03%
40	0.08%	0.08%
45	0.14%	0.14%
50	0.17%	0.17%
55	0.17%	0.17%
60	--	--
65	--	--

Table 3

Disability Rates—Local Government Employees

The following table shows sample annual rates of disability.

% Becoming Disabled Within Next Year		
Sample Ages	Male	Female
20	0.03%	0.03%
25	0.03%	0.03%
30	0.03%	0.03%
35	0.03%	0.03%
40	0.08%	0.08%
45	0.20%	0.20%
50	0.38%	0.38%
55	0.49%	0.49%
60	--	--
65	--	--

Actuarial Assumptions and Methods

Discussion of Actuarial Assumptions and Methods

The State of Tennessee selected the economic, demographic and health care claim cost 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. Mortality, retirement, withdrawal, and disability rates as well as assumed salary increases were developed by TCRS from the 2016 Actuarial Experience Study. Coverage acceptance rates were provided by the prior actuary, but not reviewed for the current valuation. An evaluation of the reasonability and consistency of these assumptions is beyond the scope of the assignment.

Calculation of Normal Costs and Liabilities

The method used to calculate the service cost and accumulated postretirement benefit obligation for determining OPEB expense is the entry age normal cost method. Under this cost method, the actuarial accrued liability is based on a prorated portion of the present value of all benefits earned to date over expected future working lifetime as defined by GASB. The proration is determined so that the cost with respect to service accrued from date of hire is recognized as a level percentage of pay each year. The Normal Cost is equal to the prorated cost for the year of the valuation.

Accounting Information under GASB 75

Benefit obligations and expense/(income) are calculated under U.S. Generally Accepted Accounting Principles as set forth in Government Accounting Standards Board Statement 75.

The total OPEB liability represents the actuarial present value of benefits based on the entry age normal cost method as of the measurement date. The service cost represents the actuarial present value of benefits that are attributed to the 2021 fiscal year, reflecting the effect of assumed future health care claim cost and/or pay increases.

The OPEB expense is the annual amount to be recognized in the income statement as the cost of OPEB benefits for this plan for the period ending June 30, 2021.

Plan Provisions

Eligibility to Participate

All full-time state and higher education employees (hired before July 1, 2015), retirees and vested terminated participants of the State of Tennessee. Local Education Agencies and certain Local Government Agencies who satisfy the Disability, Vested Termination, Early or Normal Retirement provisions of the Tennessee Consolidated Retirement System (TCRS) may be eligible for certain post-employment benefits under the Tennessee Plan. Any employee, with exception of state judges, becoming members of TCRS on or after July 1, 1976 enters TCRS Group I regardless of employment classification.

Eligibility for Retirement

Normal Retirement

Earlier of (i) Age 60 with 5 years of creditable service, or (ii) Any age with 30 years of creditable service

Early Retirement

Age 55 with 5 years of creditable service or 10 years for members of political subdivisions unless the governing body passes a resolution authorizing five-year vesting, or any age upon completion of 25 years of service

Disability Retirement

Retirees who have documentation of SSA disability or have been approved by TCRS for disability retirement, have a date of hire prior to July 1, 2015 and who were participants in a state-sponsored plan at the time of the injury or illness which resulted in their disability may continue coverage provided that no lapse in medical coverage has occurred by meeting either the requirements for TCRS participants, ORP (Optional Retirement Program) participants and other non-TCRS participants outlined above, or by having at least five years employment with the employer immediately prior to final termination due to disability.

Eligibility for The Tennessee Plan Insurance

All State, Higher Education, Local Education and Local Government retirees hired before July 1, 2015 and are receiving a monthly TCRS benefit based on their own service and upon attaining Medicare-eligibility.

All retirees of the State of Tennessee's Higher Education institutions hired before July 1, 2015, who participated in an optional retirement plan, instead of TCRS, may also be eligible for the post-employment benefits under The Tennessee Plan upon attaining Medicare-eligibility.

The Tennessee Plan coverage may commence upon the retiree's attainment of Medicare eligibility (whether due to disability or at age 65), even if the former employee chooses not to enroll in pre-65 retiree health coverage under the State program.

Plan Benefits

Certain Other Post-Employment Benefits (OPEB) are available to current retirees and all employees (hired before July 1, 2015) retiring from the State under the provisions of Disability, Early or Normal Retirement, as described above (except some grandfathered employees and retirees). The OPEB benefits include lifetime access to coverage for the retiree eligible for Medicare Part A under the Medicare Supplement (The Tennessee Plan), State provided subsidy for retiree premiums, as well as additional subsidies for retiree premiums provided by some local government or education employers.

- Medicare-eligible retirees may choose to participate in the State-sponsored Medicare Supplement plan, called "The Tennessee Plan". Dependents of retirees may be covered at the retiree's option upon reaching Medicare eligibility. Beginning January 1, 2015 only dependents of covered retirees will be offered coverage under the plan. Retirees and their dependents eligible for the Medicare benefits are required to enroll in Part A under Medicare.
- Retired teachers in the Bartlett Municipal Schools, Collierville Municipal Schools, Davidson County Schools, Germantown Municipal School District, Rutherford County Schools, and Shelby County Schools are additionally offered participation in a local-sponsored Medicare Supplement Plan.
- The surviving dependent of a retiree is eligible to continue coverage under The Tennessee Plan subject to payments of the applicable premiums at the unsubsidized rate.
- There is no separate trust through which benefits for retirees are funded. No assets are currently accumulated or earmarked for these purposes. All approved benefits are paid by the State or the employer when due.

Duration of Benefits

The post-employment benefits are extended to retirees and continued at the discretion of the State, which reserves the right (subject to State Statute and any collective bargaining agreements) to change or terminate benefits and to change contributions required from retirees in the future as circumstances change.

Premium Subsidies

State Subsidies

Retired state, higher education and teachers covered under the Tennessee Plan are eligible for a premium subsidy from the State. The amount of this subsidy depends on the creditable service at time of retirement based on the table below.

Years of Service	Monthly Subsidy
Less than 15	\$0
15 through 19	\$25.00
20 through 29	\$37.50
30 and more	\$50.00

There are no provisions for automatic escalation of the amounts illustrated above and they may not be increased without legislative approval. Consequently, this benefit is considered a flat dollar subsidy for the purpose of this valuation.

Resolution 31 Employers

The following employers have passed a resolution to make contributions towards the premium cost of coverage for retirees that are not eligible for any premium subsidy from the State under Resolution 31. The amount of subsidy match those provided by the State to similarly situated State retirees.

Association of County Mayors	Overton Co Highway Dept
Bells City Board of Education	Overton Co Nursing Home
Bells, City Of	Overton County
Bloomingtondale Utility District	Overton County 911 District
Bolivar, City Of	Portland, City Of
Clay Co Board of Education	Scott Co Ambulance Service
Clinton City Schools	Scott Co Board of Education
Clinton, Town Of	Scott Co General Fund
Greeneville City Schools	Scott Co Rd Dept
Greeneville, Town Of	Sevier Co Board Members
Hamblen Co Board of Education	Sevier County
Hamblen Co Courthouse	Sumner Co Board of Education
Hartsville Trousdale County Government	Sevier County Dept. of Education
Humboldt City Schools	Sumner County
Humboldt, City Of	Tennessee Secondary School Athletic Association
Jackson Co Board of Education	Tennessee Co Commissioners Association
Jefferson City	Tennessee Co Hwy Official Association
Kingston Springs	Tennessee Co Service Association
Linebaugh Pub Lib	Tennessee CSA
Mid-West Comm Services Agency	Tennessee Education Association
Milan, City Of	Tennessee State Employees Association
Monroe Co Board of Education	Tri County Vocational School
Monroe County	Union Co Board of Education
Morristown Schools	Union County General Fund
Overton Co Board Of Education	Woodbury, Town Of

Premium Subsidies

Additional Subsidies

Some local employers offer premium subsidies in addition to the amounts contributed by the state. Specific amounts by employer are identified in the following table.

Employer	Local Subsidy Provided
Bristol City Schools	Support staff and teachers receive a maximum \$500 per year. To receive this benefit, the employee must have 30 years of service, with at least eight years of service with Bristol TN City Schools and be at least age 65 at retirement.
Dekalb County 911	Employees receive a 50% subsidy for 30 plus years of service and a 25% subsidy for 20 to 29 years of service. Only years with Dekalb Co. 911 are counted toward the subsidy.
Eastside Utility District	Employees receive 100% of the current premium for 30 plus years of service, 67% of the current premium for 20 to 29 years of service, and 33% of the current premium for at least 15 years of service.
Hawkins County Schools	Support staff receive a \$100.00 subsidy for 30 plus years of service, \$75.00 for 20 to 29 years of service, and \$50.00 for at least 15 years of service. Teachers receive an additional subsidy of \$50.00 for 30 plus years of service, \$37.50 for 20 to 29 years of service, and \$25.00 for at least 15 years of service. To receive this benefit, employee must be age 65 at retirement.
Hickman County Schools	Teachers receive a subsidy of \$76.16 for 30 plus years of service, \$48.46 for 20 to 29 years of service, and \$27.69 for at least 10 years of service. Employees must be state Medicare eligible and retired after July 1, 2010. Employees are directly reimbursed monthly amounts on the state Medicare plan. Checks are written to the employees once a year.
Jackson County Schools	There is currently one individual receiving a \$25 monthly subsidy. This plan policy is no longer in effect.
Kingsport	All eligible employees receive the difference between the full premium and the State Subsidy. For support staff to be eligible, they must also be TCRS eligible and hired before 7/1/2015.
McNairy County School System	Teachers receive a subsidy for 30 plus years of service at \$20.77, \$18.01 for 20 to 29 years of service, and \$15.23 for at least 15 years of service. Employees must be eligible for the state subsidy and retired after 2007.
Millington Municipal School	Instructional staff with 30 plus years of service receive the difference between the full premium and the State Subsidy. Instructional staff with less than 30 years of service and support staff, regardless of service, receive a \$100 subsidy.

Premium Subsidies

Additional Subsidies

Employer	Local Subsidy Provided
Sullivan County Board of Education	All eligible employees receive the difference between the full premium and the State Subsidy. For support staff to be eligible, they must be age 55 with 25 Years of Service, with at least 15 of those years with Sullivan County Board of Education. For teachers, 30 years are required, with at least 15 of those years with Sullivan County.
Wilson County MS	Full premium for eligible employees. This is a closed group of retirees.