The State of Tennessee – State Employee Group Plan

GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions

For the Fiscal Year Ending June 30, 2019

GRS Retirement Consulting

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June 30, 2019

Mr. Ike Boone
Financial Oversight Coordinator
F&A Division of Accounts
State of Tennessee
14th Floor, William Snodgrass Tower
312 Rosa L. Parks Avenue
Nashville, TN 37243

Re: State of Tennessee - State Employee Group Plan
GASB Statement No. 75 Actuarial Valuation of Other Post-Employment Benefits (OPEB)

Dear Mr. Boone:

Gabriel, Roeder, Smith & Company (GRS) has been engaged by the State of Tennessee (the State) to perform an Actuarial Valuation of its Other Post-Employment Benefits (OPEB) provided through the State's group insurance plans. We are pleased to present herein the results of the valuation of benefits provided to retirees covered under the State Employee Group Plan.

This report provides information on behalf of the State of Tennessee in connection with the Governmental Accounting Standards Board (GASB) Statement No. 75 "Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions." This information is intended to assist in preparation of the financial statements of the State of Tennessee related to benefits provided through the State Employee Group Plan. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

This Actuarial Valuation and Report covers the OPEBs provided through the State Employee Group Plan to retirees of the State primary government and its agencies and the State's component units (including institutions of higher education). Additional costs and liabilities borne and reportable by the State are included in separate Actuarial Valuation and Reports for the Local Education Employee Group Plan and Tennessee Plan (the Medicare Supplement). The Substantive Plan provisions for the OPEBs provided through the State Employee Group Plan are described in the Section at the end of this Report entitled "Summary of Substantive Plan Provisions."

The calculation of the liability associated with the benefits described in this report and accompanying deliverables was performed for the purpose of satisfying the requirements of GASB Statement No. 75. Documents and tables presenting results applicable to individual employers are considered as parts of this report. The calculation of the plan's liability for this report is not applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement No. 75 may produce significantly different results. This report may be provided to parties other than the State only in its entirety and only with the permission of the State. GRS is not responsible for unauthorized use of this report.

This report is based upon information through June 30, 2018, furnished to us by the State, concerning OPEB, active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not audited.

The calculations are based upon assumptions regarding future events, which may or may not materialize. They are also based upon plan provisions outlined in this report. If you have reason to believe that the assumptions that were used are unreasonable, that the plan provisions are incorrectly described, that important relevant plan provisions are not described, or that conditions have changed since the calculations were made, you should contact the authors of this report prior to relying on information in the report.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

James J. Rizzo and Piotr Krekora are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

This report and accompanying deliverables have been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, the information contained in this report is accurate and fairly represents the actuarial position of the plan as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice, and with applicable statutes. If you have reason to believe that the information provided in this report is inaccurate, or is in any way incomplete, or if you need further information in order to make an informed decision on the subject matter of this report, please contact the author of the report prior to making such decision.

We will be pleased to answer any questions pertaining to the Actuarial Valuation.

Respectfully submitted,

GABRIEL, ROEDER, SMITH AND COMPANY

James J. Rizzo, ASA, EA, MAAA, FCA	Piotr Krekora, ASA, EA, MAAA, FCA
Senior Consultant & Actuary	Consultant & Actuary

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SECTION A

EXECUTIVE SUMMARY

Executive Summary

	2019
Actuarial Valuation Date	June 30, 2018
Measurement Date of the Total OPEB Liability	June 30, 2018
Employer's Fiscal Year Ending Date (Reporting Date)	June 30, 2019
Membership as of the Measurement Date	
Number of	
- Retirees and Beneficiaries	7,844
- Inactive, Nonretired Members	120
- Active Members Eligible for Future Benefits	48,362
- Active Members Not Eligible for Future Benefits*	4,290
- Total	60,616
Estimated Covered-Employee Payroll	$ 2,775,186,075
Estimated Total Payroll	$ 3,092,398,102
Total OPEB Liability	
Total OPEB Liability	$ 1,385,238,244
Total OPEB Liability as a Percentage of Covered Payroll	49.92 %
Development of the Single Discount Rate	
Long-Term Municipal Bond Rate**	3.62 %
Total OPEB Expense	$ 107,465,182

Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in the Future

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	$ 0	$ 49,515,597
Changes in assumptions and other inputs	61,012,968	44,219,388
Estimated Benefits/Contributions paid after the Measurement Date	95,520,540	0
Total	$ 156,533,508	$ 93,734,985

** Non-grandfathered employees who retire after attaining eligibility for Medicare benefits will not be eligible for coverage through the Employee Group Plan.*

***Source:"Fidelity General Obligation AA" rate as of June 29, 2018. This is the rate for Fixed Income Yield Curve Data for Municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity's "20-Year Municipal GO AA Index." In describing this index, Fidelity notes that the municipal curves are constructed using option adjusted analytics of a diverse population of over 10,000 tax exempt securities.*

Discussion

Accounting Standard

GASB Statement No. 75 replaced the requirements of Statements No. 45, Accounting and Financial Reporting by Employers for Postemployments Benefits Other Than Pensions, as amended, and No. 57, OPEB Measurements by Agent Employers and Agent Multiple-Employer Plans, for OPEB.

Reporting under GASB Statement No. 75 is effective for fiscal years commencing after June 15, 2017.

The following discussion provides a summary of the information that is required to be disclosed under this new accounting standard. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report. As a result, the employer is responsible for preparing and disclosing the non-actuarial information needed to comply with these accounting standards.

Plan Assets

As of the measurement date of June 30, 2018, there were no plan assets accumulated in a trust that meets the criteria in paragraph 4 of GASB Statement No. 75.

Beginning with the fiscal year 2019, the State will begin advance-funding its OPEB obligation as authorized by Pub. Ch. No. 426. This is being accomplished by establishing a separate trust account into which the State would make periodic deposits for investment and accumulation of reserves and out of which would be paid the retiree subsidies defined by the OPEB Plan documents. The State intends to make deposits equal to the Actuarially Determined Contribution (ADC) to that trust beginning with the contribution year ending June 30, 2019. However, because the prefunding was not scheduled to commence until after the measurement date of June 30, 2018, the State is accounting for its OPEB obligation under a pay-as-you-go practice and without any provisions made for expected future investment earnings.

Financial Statements

GASB Statement No. 75 requires state and local government employers to recognize the net OPEB liability and the OPEB expense on their financial statements, along with the related deferred outflows and inflows of resources. The net OPEB liability is the difference between the total OPEB liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets. Since the plan is currently unfunded, the net OPEB liability is equal to the total OPEB liability.

The OPEB expense recognized each fiscal year is equal to the change in the total OPEB liability from the beginning of the year to the end of the year, not including the impact of employer contributions, adjusted for deferred recognition of the liability.

GASB Statement No. 75 states the employer contributions made to the OPEB plan subsequent to the measurement date and before the end of the employer's reporting period should be reported as a deferred outflow of resources.

Plan reporting under GASB Statement No. 74 will be addressed under a separate cover.

Notes to Financial Statements

GASB Statement No. 75 requires numerous note disclosures to the employer's financial statements concerning the plan.

Required Supplementary Information for Plans that Do Not Have Formal Assets

GASB Statement No. 75 requires a 10-year fiscal history (to be built prospectively) of:

- Sources of changes in the total OPEB liability
- Information about the total OPEB liability and related ratios, including the total OPEB liability as a percent of covered employee payroll

Timing and Frequency of the Actuarial Valuation

An actuarial valuation to determine the total OPEB liability is required to be performed at least every two years. For the employer's financial reporting purposes, the total OPEB liability and OPEB expense should be measured as of the employer's "measurement date" which may not be earlier than the employer's prior fiscal year end-date. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total OPEB liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total OPEB liability shown in this report is based on an actuarial valuation performed as of June 30, 2018 and a measurement date of June 30, 2018.

Discount Rate

For plans that do not have formal assets, the discount rate should equal a yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher as of the measurement date. For the purpose of this valuation, the municipal bond rate is 3.62% (based on the weekly rate closest to but not later than the measurement date of the Fidelity General Obligation AA index).

Actuarial Assumptions

The actuarial assumptions used to value the liabilities are outlined in detail in Section F. The assumptions include details on the health care trend assumption, the aging factors as well as the cost method used to develop the OPEB expense.

Several assumptions were updated for this actuarial valuation, including changes to initial per capita costs and premiums, initial rates of changes in healthcare costs and the discount rate. An aggregate impact of these changes is shown in the statement of changes in the Total OPEB Liability on page B-1.

Benefits Valued

The benefit provisions that were valued are summarized in Section C. The valuation is required to be performed on the current benefit terms and existing legal agreements. Consideration is to be given to the written plan document as well as other communications between the employer and plan members and an established pattern of practice for cost sharing. The summary of major plan provisions is designed to outline principal plan benefits. If the plan summary is not in accordance with the actual provisions, please alert the actuary immediately so they can both be sure the proper provisions are valued.

Future Uncertainty or Risk

Future results may differ from those anticipated in this valuation. Reasons include, but are not limited to:

- Actual medical trend differing from expected;
- Changes in the healthcare plan designs offered to active and retired members;
- Participant behavior differing from expected;
    - Elections at retirement;
    - One-person versus two-person coverage elections;
    - Time of retirement or termination.

SECTION B

FINANCIAL SCHEDULES

Schedule of Changes in Total OPEB Liability and Related Ratios
Measurement Year Ended June 30, 2018
(Ultimately 10 Years Will Be Displayed)

Measurement Year Ended June 30,	2018	2017	
A. Total OPEB Liability			
1. Service cost	$ 64,540,887	$ 69,209,230	
2. Interest on the Total OPEB Liability	48,603,403	41,044,542	
3. Changes of benefit terms	0	0	
4. Difference between expected and actual experience of the Total OPEB Liability	(56,797,301)	0	*
5. Changes of assumptions	69,985,461	(58,959,184)	
6. Benefit payments	(83,634,891)	(90,359,337)	
7. Net change in Total OPEB Liability	$ 42,697,559	$ (39,064,749)	
8. Total OPEB Liability – Beginning	1,342,540,685	1,381,605,434	
9. Total OPEB Liability – Ending	$ 1,385,238,244	$ 1,342,540,685	
B. Estimated Covered-Employee Payroll	$ 2,775,186,075	$ 2,722,360,000	
C. Total OPEB liability as a percentage of Covered-Employee Payroll	49.92%	49.32%	

*Total OPEB Liability at the beginning of the initial period of implementation was developed by rolling back the liability from the measurement as permitted by Q&A 4.499 of the Implementation Guide No. 2017-3. Consequently, there was no difference between expected and actual experience.

Note: Covered-Employee Payroll presented above for the measurement period is an estimate based on data submitted for the July 1, 2018 valuation. GASB Statement 75 defines *Covered-employee payroll* as the payroll of employees that are provided with OPEB through the OPEB plan, including employees terminating during the measurement period (fiscal year ending June 30, 2018). Previous year's amount is based on information reported in the State's financial statements.

Notes to Schedule of Change in Total OPEB Liability and Related Ratios

Valuation Date: June 30, 2018

Methods and Assumptions Used to Determine Total OPEB Liability:

Actuarial Cost Method	Entry Age Normal
Inflation	2.25%
Discount Rate	3.62%
Salary Increases	Salary increase rates used in the July 1, 2017 actuarial valuation of the Tennessee Consolidated Retirement System (TCRS); 3.44% - 8.72%, including inflation.
Retirement Age	Retirement rates used in the July 1, 2017 actuarial valuation of the Tennessee Consolidated Retirement System (TCRS). They are based on the results of a statewide experience study (undertaken on behalf of TCRS).
Mortality	Mortality tables used in the July 1, 2017 actuarial valuation of the Tennessee Consolidated Retirement System (TCRS). They are taken from the RP-2014 Healthy Participant Mortality Tables with adjustments and are generationally projected using SOA scale MP-2016. These rates were adopted upon completion of a statewide experience study (undertaken on behalf of TCRS).
Healthcare Cost Trend Rates	Based on the Getzen Model, with trend starting at 6.75% and gradually decreasing to an ultimate trend rate of 3.53% plus 0.38% increase for excise tax.
Aging factors	Based on the 2013 SOA Study "Health Care Costs - From Birth to Death".
Expenses	Administrative expenses are included in the per capita health care costs.

Other Information:

Notes

Following changes in assumptions and other inputs were made:
- The discount rate was changed from 3.56% as of the beginning of the measurement period to 3.62% as of June 30, 2018.
- The assumed initial per capita costs and premium amounts were revised to reflect rates adopted for the 2019 plan year.
- The assumed initial trend rate applicable to 2019 plan year was revised from 5.40% to 6.75%

These changes are reflected in the Schedule of Changes in Total OPEB Liability.

There were no benefit changes during the year.

Statement of OPEB Expense
Employer Fiscal Year Ended June 30, 2019
(Based on Measurement Year Ended June 30, 2018)

OPEB Expense

1. Service Cost	$	64,540,887
2. Interest on the Total OPEB Liability		48,603,403
3. Current-Period Benefit Changes		0
4. OPEB Plan Administrative Expense		0
5. Recognition of Outflow/(Inflow) of Resources due to Liabilities		(5,679,108)
6. Total OPEB Expense	**$**	**107,465,182**

Recognition of Deferred Outflows and Inflows of Resources

Differences between expected and actual experience and changes in assumptions are recognized in OPEB expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with OPEB through the OPEB plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the current measurement period, the average of the expected remaining service lives for purposes of recognizing the applicable combined deferred outflows and inflows of resources established in the current measurement period is 7.8 years. Expected remaining service lives exclude current actives that are over age 65.

Statement of Outflows and Inflows Arising from Current Reporting Period Employer Fiscal Year Ended June 30, 2019 (Based on Measurement Year Ended June 30, 2018)

A. Outflows/(Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total OPEB Liability (gains) or losses	$	(56,797,301)
2. Assumption Changes (gains) or losses	$	69,985,461
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		7.8
4. Outflow/(Inflow) of Resources to be recognized in the current OPEB expense for the difference between expected and actual experience of the Total OPEB Liability (1 ÷ 3)	$	(7,281,705)
5. Outflow/(Inflow) of Resources to be recognized in the current OPEB expense for changes in assumption and other inputs (2 ÷ 3)	$	8,972,495
6. Outflow/(Inflow) of Resources to be recognized in the current OPEB expense due to Liabilities (4 + 5)	$	1,690,790
7. Deferred Outflow/(Inflow) of Resources to be recognized in future OPEB expenses for the difference between expected and actual experience of the Total OPEB Liability (1 - 4)	$	(49,515,596)
8. Deferred Outflow/(Inflow) of Resources to be recognized in future OPEB expenses for changes in assumption and other inputs (2 - 5)	$	61,012,966
9. Deferred Outflow/(Inflow) of Resources to be recognized in future OPEB expenses due to Liabilities (7 + 8)	$	11,497,370

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Employer Fiscal Year Ended June 30, 2019 (Based on Measurement Year Ended June 30, 2018)

A. Outflows and Inflows of Resources by Source to be Recognized in Current OPEB Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	$ 0	$ 7,281,705	$ (7,281,705)
2. Assumption changes	8,972,495	7,369,898	1,602,597
3. Total	$ 8,972,495	$ 14,651,603	$ (5,679,108)

B. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future OPEB Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	$ 0	$ 49,515,597	$ (49,515,597)
2. Assumption changes	61,012,968	44,219,388	16,793,580
3. Total	$ 61,012,968	$ 93,734,985	$ (32,722,017)

C. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future OPEB Expenses

Year Ending June 30	Net Deferred Outflows of Resources
2020	$ (5,679,108)
2021	(5,679,108)
2022	(5,679,108)
2023	(5,679,108)
2024	(5,679,108)
Thereafter	(4,326,477)
Total	$ (32,722,017)

D. Deferred Outflows of Resources Due to Benefits/Contributions Paid after the Measurement Date $ 95,520,540

Statement of Remaining Deferred Outflows and Inflows of Resources
Employer Fiscal Year Ended June 30, 2019
(Based on Measurement Year Ended June 30, 2018)

Date Established	Source	Recognition Period (years)	Original Amount	Years Remaining	Amount Unrecognized Beg of Period	Amount Recognized in Current Expense	Amount Deferred to Future Periods
Deferred Outflows of Resources							
6/30/2019	Assumption Changes	7.8	$ 69,985,461	7.8	$ 69,985,463	$ 8,972,495	$ 61,012,968
		SUBTOTAL:	69,985,461		69,985,463	8,972,495	61,012,968
Deferred Inflows of Resources							
6/30/2018	Assumption Changes	8.0	58,959,184	7.0	51,589,286	7,369,898	44,219,388
6/30/2019	Liability Experience	7.8	56,797,301	7.8	56,797,302	7,281,705	49,515,597
		SUBTOTAL:	115,756,485		108,386,588	14,651,603	93,734,985
		GRAND TOTAL:			**(38,401,125)**	**(5,679,108)**	**(32,722,017)**

Discount Rate

For plans that do not have formal assets, the discount rate should equal the tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date. For the purpose of this valuation, the municipal bond rate is 3.62% (based on the weekly rate closest to but not later than the measurement date of the Fidelity's "20-Year Municipal GO AA Index"). The discount rate was 3.56% as of the beginning of the measurement year.

Plan Assets

There are no plan assets accumulated in a trust that meets the criteria in paragraph 4 of GASB Statement No. 75.

Summary of Membership Information

The following table provides a summary of the number of participants in the plan as of the measurement date:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	7,844
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	120
Active Members Eligible for Future Benefits	48,362
Active Members Not Eligible for Future Benefits*	4,290
Total Plan Members	60,616

** Non-grandfathered employees who retire after attaining eligibility for Medicare benefits will not be eligible for coverage through the State Employee Group Plan.*

Sensitivity of Total OPEB Liability

Regarding the sensitivity of the total OPEB liability to changes in the discount rate, the following presents the plan's total OPEB liability, calculated using a discount rate of 3.62%, as well as what the plan's total OPEB liability would be if it were calculated using a discount rate that is one percent lower or one percent higher:

Sensitivity of Total OPEB Liability to the Discount Rate Assumption

1% Decrease 2.62%	Current Discount Rate Assumption 3.62%	1% Increase 4.62%
$ 1,477,880,335	$ 1,385,238,244	$ 1,298,054,730

Regarding the sensitivity of the total OPEB liability to changes in the healthcare cost trend rates, the following presents the plan's total OPEB liability, calculated using the assumed trend rates as well as what the plan's total OPEB liability would be if it were calculated using a trend rate that is one percent lower or one percent higher:

Sensitivity of Total OPEB Liability to the Healthcare Cost Trend Rate Assumption

1% Decrease (5.75% down to 2.91%)	Current Healthcare Cost Trend Rate Assumption	1% Increase (7.75% down to 4.91%)
$ 1,251,076,924	$ 1,385,238,244	$ 1,542,103,692

SECTION C

SUMMARY OF SUBSTANTIVE PLAN PROVISIONS

Summary of Substantive Plan Provisions as of June 30, 2018

Eligibility for Retiree Benefits

All full-time state and higher education employees (hired before July 1, 2015), retirees and vested terminated participants of the State of Tennessee 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 State Employees Group 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. The following outlines the *Group I* eligibility requirements for retirement under the Tennessee Consolidated Retirement System (TCRS):

VESTED TERMINATION	Full vesting starts after 5 years of creditable service. However, no other postemployment benefits are available under the State Employees Group Plan to employees not meeting criteria described below.
25-YEAR RETIREMENT	Reduced pension benefit upon completion of 25 years of service at any age.
EARLY RETIREMENT	Age 55 and vested.
SERVICE RETIREMENT	Earlier of (i) Age 60 with 5 years of creditable service, or (ii) Any age with 30 years of creditable service.

Eligibility for Retiree Insurance Coverage

TCRS PARTICIPANTS

10 years employment with the employer and 3 continuous years of insurance coverage in a state-sponsored insurance plan immediately prior to final termination for retirement, or

20 or more years of employment with the employer and 1 year insurance coverage in a state-sponsored insurance plan immediately prior to final termination for retirement

If the individual is retiring through TCRS, they must be receiving a monthly retirement benefit to continue coverage as a retiree. TCRS participants who choose a lump-sum retirement benefit are not eligible to continue insurance at retirement.

OTHER PARTICIPANTS

For ORP (Optional Retirement Program) participants, non-elects (individuals who declined optional membership in the Tennessee Consolidated Retirement System), and state employees on federal appointment not eligible for federal insurance programs, the following rules apply:

- Age 55 with at least 10 but less than 20 total years of employment with the employer and 3 continuous years of insurance coverage in a state-sponsored insurance plan immediately prior to final termination for retirement, or

- Age 55 and 20 or more years of employment with the employer and 1 year of insurance coverage in a state-sponsored insurance plan immediately prior to final termination for retirement, or

- 25 years of employment with the employer and 1 year of insurance coverage in a state-sponsored insurance plan immediately prior to final termination for retirement.

DISABLED RETIREES Retirees 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.

Members whose first employment with the state began prior to July 1, 2015, who meet the eligibility rules may continue health insurance at retirement until age-eligible for Medicare. Employees whose first employment with the state began on or after July 1, 2015, will not be eligible to continue insurance coverage at retirement.

Other Post-Employment Benefits – For Medical Coverage Under "The State Employees Group Plan"

Certain Other Post-Employment Benefits (OPEB) are available to current retirees and all employees retiring from the State under the provisions of Disability, Early or Normal Retirement, as described above. With exception of a small group of grandfathered individuals, retirees are required to discontinue coverage under the plan upon attaining age 65. In addition to State-provided subsidies for retiree premiums the OPEB benefits include access to coverage for the retiree and dependents under the Medical, Prescription, Dental, Vision, Long-term Care and Life Insurance Plans as described below.

Health-Related Benefits

Eligible retirees may choose among the same Medical Plan options available for similarly situated active employees of the State. Dependents of retirees who continue to meet eligibility requirements may be covered at the retiree's option the same as dependents of active employees, provided those dependents were already enrolled in the Plan when the retiree's active coverage was terminated or they become eligible based on a special enrollment provision. Prescription Drug coverage is automatically extended to retirees and their dependents who continue coverage under any one of the Medical Plan options. Covered retirees and their dependents are subject to the same Medical and Prescription benefits as are active employees. Totally and permanently disabled pre-65 retirees may continue medical coverage. Disabled retirees under age 65 who are eligible for Medicare must maintain at least Part B coverage. Retirees and their dependents that are age-eligible for Medicare benefits are not eligible to remain in the State Employee Group Insurance Plan and may apply for the Medicare Supplement plan (The Tennessee Plan).

Dental, Vision and Long-Term Care Benefits

Dental, vision and long-term care benefits for retirees and their dependents are fully paid by the retirees, as they are by employees and their dependents. Consequently, these benefits are not considered as other post-employment benefits for the purposes of GASB Statement No. 75.

Life Insurance

Retiring state employees have an option of converting their Employer sponsored group basic-term life certificate to an individual life insurance policy with age-based premiums. Consequently, life insurance benefits are not considered as other post-employment benefits for the purposes of GASB Statement No. 75.

Survivorship Benefits

The surviving dependents of a retiree may stay in the plan at no cost for up to six months. Afterwards, the surviving dependents are eligible to continue coverage under the State Employees Group Plan subject to payments of the applicable premiums. The surviving dependents must continue to meet eligibility requirements to remain enrolled in the plan.

Retiree Contributions for Medical/Prescription Coverage

In order to begin and maintain retiree Medical/Prescription coverage, premium contributions are required from the retiree. For dependent coverage, the retiree is required to pay a premium as well. If any required amounts are not paid timely, the coverage for the retiree and/or the dependent(s) will cease. Annual plan premium increases impact the amount of contributions required for retiree and dependent coverage.

The chart below summarizes the current total gross monthly premium amounts used to determine contributions required from retirees and their dependents to maintain medical/prescription coverage. These rates went into effect on January 1, 2018. Coverage for children of retirees is available (until their limiting age). However, for measuring the long-term costs, the relatively few children covered by retirees coupled with the short duration of their coverage remaining results in costs that are not material in the long-term.

ALL REGIONS		
	BCBST & CIGNA LOCAL PLUS	**CIGNA OPEN ACCESS**
PREMIER PPO		
Retiree Only	**$749.00**	$789.00
Retiree + Child(ren)	**$1,123.00**	$1,163.00
Retiree + Spouse	**$1,572.00**	$1,652.00
Retiree + Spouse + Child(ren)	**$1,946.00**	$2,026.00
Spouse Only	**$823.00**	$863.00
Child(ren) Only	**$374.00**	$414.00
Spouse + Child(ren)	**$1,197.00**	$1,237.00

ALL REGIONS		
	BCBST & CIGNA LOCAL PLUS	CIGNA OPEN ACCESS
STANDARD PPO		
Retiree Only	**$701.00**	$741.00
Retiree + Child(ren)	**$1,051.00**	$1,091.00
Retiree + Spouse	**$1,473.00**	$1,553.00
Retiree + Spouse + Child(ren)	**$1,823.00**	$1,903.00
Spouse Only	**$772.00**	$812.00
Child(ren) Only	**$350.00**	$390.00
Spouse + Child(ren)	**$1,122.00**	$1,162.00
HEALTHSAVINGS CDHP		
Retiree Only	**$665.00**	$705.00
Retiree + Child(ren)	**$996.00**	$1,036.00
Retiree + Spouse	**$1,396.00**	$1,476.00
Retiree + Spouse + Child(ren)	**$1,727.00**	$1,807.00
Spouse Only	**$731.00**	$771.00
Child(ren) Only	**$331.00**	$371.00
Spouse + Child(ren)	**$1,062.00**	$1,102.00

Employer-Provided Subsidy for Medical/Prescription Coverage

Amounts illustrated on the previous page represent total monthly rates charged by the Plan. The current State policy is to subsidize retiree premiums for medical/prescription based on the service at retirement. Subsidy amount is based on the premium rates applicable to coverage under the lower cost plan and carrier (bold faced in the tables above). The subsidy percentage depends on the retiree's years of service as outlined below:

State Subsidy as a Percent of Base Premium	
Service at Retirement	**State Subsidy**
30+ years of service	80%
20-29 years of service	70%
Less than 20 years of service	60%

COBRA Benefits

Former employees, retirees and dependents may be eligible for an extended benefit under COBRA, regardless of the terms of the employer's other post-employment benefits. COBRA benefits are not considered as other post-employment benefits for the purposes of GASB Statement No. 75.

Funding Vehicle

There is no separate trust through which benefits for retirees are funded. No assets are currently accumulated or earmarked for this purposes. All approved benefits are paid from the Employer's general assets when due.

Termination and Amendment

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.

SECTION D

DEVELOPMENT OF INITIAL PER CAPITA COSTS

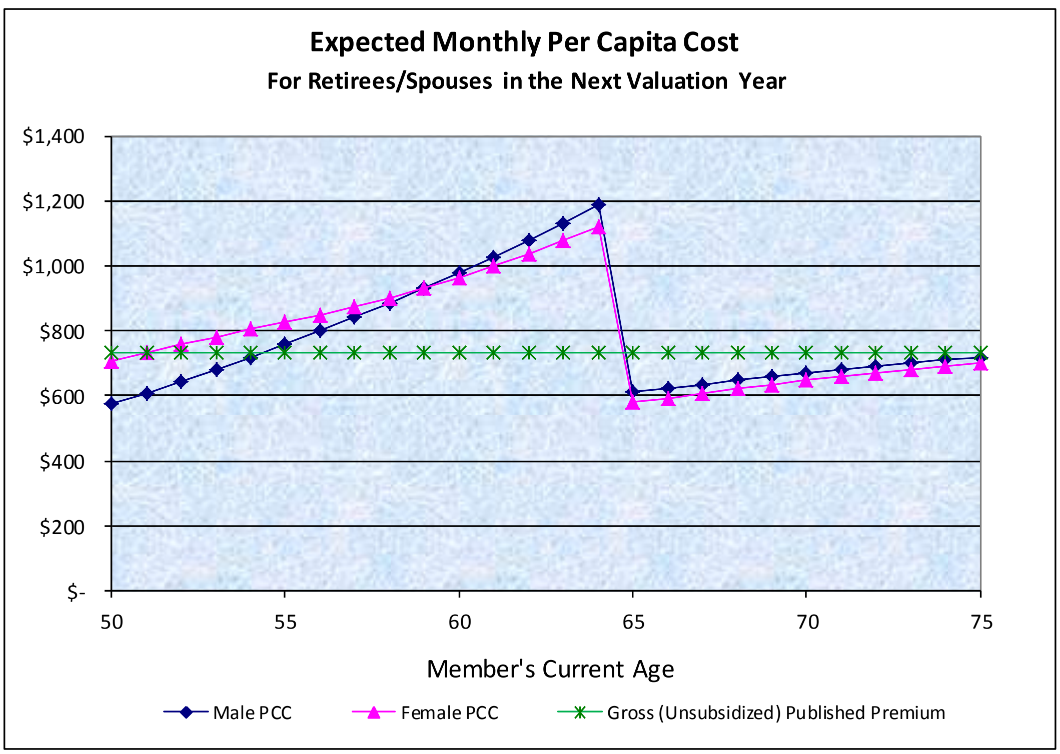
Development of Initial Per Capita Costs

By offering medical coverage to employees, retirees and their dependents, the Employer assumes the responsibility for the expected claims and other costs incurred by the members of the plan. These costs are partially offset by contributions from employees and retirees. While the premium amounts contributed by retirees are currently not based on the age or gender of the member, the true costs of medical and prescription coverage in any given year will depend on these factors. As the ages of employees, retirees and dependents in the covered population increase, so do their costs of benefits.

The table and the graph below illustrate the expected initial monthly Per Capita Costs (PCC) applicable to current retirees in the coming year.

Initial Monthly Per Capita Cost By Age/Sex					
All Retirees			Grandfathered Retirees only		
Sample Ages	Male	Female	Sample Ages	Male	Female
45	$ 441.98	$ 609.99	**65**	$ 614.57	$ 579.66
50	575.51	708.97	**70**	669.49	647.83
55	757.30	826.86	**75**	719.04	701.62
59	*931.00*	*931.00*	**80**	754.85	741.65
60	978.10	963.09	**85**	760.34	769.30
64	1,189.40	1,122.47	**90**	746.25	777.00

For comparison, the gross published premiums are also presented on the graph below. The spread between the Per Capita Cost and that gross premium represents the implicit subsidy provided by the employer. The total subsidy is equal to the difference between the Per Capita Cost and premiums actually collected from the retiree (not shown).



The amounts of Per Capita Costs illustrated on the previous page have been developed by employing the morbidity tables discussed below. The table shows select values of age grading factors reflecting rates at which medical costs increase with age of the member. The age grading factors have been developed based on the results of the study published (June 2013) in Health Care Costs – From Birth to Death sponsored by the Society of Actuaries and authored by Mr. Dale H. Yamamoto. These percentages are separate from the annual overall trend in health care costs, which operates to increase costs independent of and in addition to the Aging Factors. For example, in any single year a group of 61-year old males are expected to cost 5.02% more than a group of 60-year old males.

Medical/Rx Cost Increase By Age					
Sample Ages	**Male**	**Female**	**Sample Ages**	**Male**	**Female**
30	4.80%	3.74%	**65**	1.68%	2.46%
35	4.45%	-0.32%	**70**	1.72%	1.89%
40	4.42%	0.44%	**75**	1.07%	1.20%
45	4.89%	2.34%	**80**	0.62%	0.97%
50	5.81%	3.46%	**85**	-0.37%	0.36%
55	5.44%	2.84%	**90**	-0.28%	-0.14%
60	5.02%	3.66%	**95**	-0.38%	-2.21%

The total cost expected (based on a claim history for the self-insured health plan) for the covered retiree population was allocated by age/gender, based upon the age/gender distribution of retirees and their covered spouses in the morbidity tables above. This procedure resulted in a table of age/gender-specific initial Per Capita Costs for the coming year. These calculations were based upon the benefits provided under the plan options available to employees and retirees as of the Valuation Date.

In the development of the PCC amounts, retirees and dependents age 65 and older are assumed to be Medicare-eligible. This assumption applies only to "grandfathered" retirees as a wide majority of members are required to discontinue coverage under the plan upon attaining age-based eligibility for Medicare benefits. In our work, we assume that the employer's cost for a claim incurred by a Medicare eligible retiree is lower than the cost of the same claim incurred by a retiree who is not eligible for Medicare benefits. Claim data for post-65 retirees was not credible enough to develop per capita costs for this group based on their own data. Furthermore detailed Medicare eligibility and enrollment data was not readily available and it was assumed that 75% of the grandfathered retirees participated (or would participate upon attaining eligibility) in both Parts A and B under the Medicare program. Consequently it was assumed that the cost of benefits for post 65 retirees would be reduced, on average, by 50% due to coordination with Medicare for those retirees who actually enrolled in Parts A and B.

The Monthly Per Capita Costs (PCC) by age and gender represent the costs of coverage after taking out deductibles, coinsurance, co-pays, and Medicare payments, but before applying any monthly retiree contributions (premiums) charged for coverage. The Medicare Part D subsidy, if any, has not been given any consideration, since it may not be used to offset the OPEB obligation.

Amounts for each age/gender combination for this Valuation were developed based on census data, claims and other costs for all retired participants and their spouses participating in the State Employee Group Insurance plan.

Per Capita Costs applicable to retirees who retire under disability provisions are assumed to be the same as for all other similarly situated retirees. Although disabled retirees are generally more expensive to cover, some such retirees may qualify for benefits under the Medicare program, which offsets the increased costs. We did not assess the relative magnitude of these factors, but given the fact that they offset each other combined with a relatively low incidence of disability retirements, we believe that overall materiality of this aspect does not warrant more detailed analysis. Consequently, all retirees are subjected to the same model regardless of disability status.

SECTION E

SUMMARY OF PARTICIPANT DATA

Summary of Participant Data

Age Group	Years of Service to Valuation Date - Active Employees*							
	0-5	6-9	10-14	15-19	20-24	25-29	30&Up	Total
0 - 14	-	-	-	-	-	-	-	-
15 - 19	-	-	-	-	-	-	-	-
20 - 24	98	6	-	-	-	-	-	104
25 - 29	1,204	542	3	-	-	-	-	1,749
30 - 34	1,458	1,826	422	12	-	-	-	3,718
35 - 39	1,190	1,991	1,662	426	14	-	-	5,283
40 - 44	950	1,704	1,764	1,446	350	7	-	6,221
45 - 49	870	1,636	1,855	1,602	1,142	300	19	7,424
50 - 54	683	1,354	1,618	1,413	1,114	991	506	7,679
55 - 59	656	1,213	1,567	1,465	1,157	1,070	1,380	8,508
60 - 64	447	967	1,198	1,106	937	920	1,546	7,121
65 - 69	143	420	591	489	415	416	851	3,325
70 - 74	35	98	204	175	133	146	352	1,143
75 - 99	11	18	38	64	46	45	155	377
Total	7,745	11,775	10,922	8,198	5,308	3,895	4,809	52,652

**Note: All non-grandfathered current and future retirees are required to discontinue coverage under the plan upon attaining age 65*

Age Group	Terminated Vested*		
	Male	Female	Total
0 - 44	-	-	-
45 - 49	2	4	6
50 - 54	24	44	68
55 - 59	18	20	38
60 - 64	2	6	8
65 - 69	-	-	-
70 - 74	-	-	-
75 - 79	-	-	-
80 - 84	-	-	-
85 - 89	-	-	-
90 - 94	-	-	-
95 - +	-	-	-
Total	46	74	120

Age Group	Retirees and Surviving Spouses*		
	Male	Female	Total
0 - 44	13	22	35
45 - 49	19	54	73
50 - 54	154	260	414
55 - 59	709	1,263	1,972
60 - 64	1,765	3,439	5,204
65 - 69	17	9	26
70 - 74	28	8	36
75 - 79	16	13	29
80 - 84	21	8	29
85 - 89	9	7	16
90 - 94	4	5	9
95 - +	-	1	1
Total	2,755	5,089	7,844

**Note: All non-grandfathered current and future retirees are required to discontinue coverage under the plan upon attaining age 65.*

SECTION F

ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions and Methods

Actuarial Valuation Date: June 30, 2018 for employee and retiree population purposes, for development of per capita cost purposes and for Valuation purposes.

Actuarial Cost Method: Individual Entry Age Normal Cost Method with an increasing Normal Cost pattern consistent with the salary increase assumptions.

Discount Rate: Under GASB Statement No. 75, since there are currently no invested plan assets held in trust to finance the OPEB obligations, the discount rate equals the tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date. For the purpose of this valuation, the municipal bond rate is 3.62% (based on the daily rate closest to but not later than the measurement date of the Fidelity General Obligation AA index).

Price Inflation: Long-term price inflation is assumed to be 2.25% per year.

Tennessee Consolidated Retirement System: Unless noted otherwise, demographic assumptions employed in this Actuarial Valuation were the same as those employed in the July 1, 2017 for 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.

In the following pages, we outline assumptions used in this Actuarial Valuation.

Data Assumptions: Upon advice from the TCRS representatives whenever we encountered a discrepancy between service values reported for this valuation and service expected based on date of hire and the value used in the previous valuation (if any), expected value 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).

Mortality Tables: Mortality tables are used to measure the probabilities of participants dying before and after retirement. The mortality rates employed in this valuation are taken from the RP-2014 Healthy Participant Mortality Table for pre-retirement mortality and the RP-2014 Mortality Table for Annuitants for non-disabled post-retirement mortality, with mortality improvement projected to all future years using Scale MP-2016. Post-retirement tables are Blue Collar and adjusted with a 2% load for males and a -3% load for females.

Mortality rates for impaired (from disability) lives are the same as 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.

These mortality rates were developed by the TCRS in a recent experience study.

Rates of Disability:

Disability rates are used to measure the probabilities of active participants becoming disabled.

% 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	--	--

Rates of Retirement:

Rates of retirement are used to measure the probabilities of an eligible active employee retiring during the next year.

Unreduced Retirement Annual Rates				
Sample Ages	**Up to 15 Years of Service**		**15+ Years of Service**	
	Male	Female	Male	Female
50	6.0%	7.5%	6.0%	7.5%
55	6.5%	7.5%	6.5%	7.5%
60	8.5%	9.0%	10.5%	11.0%
65	22.0%	22.0%	24.0%	24.0%
70	15.5%	17.0%	17.5%	19.0%
75	100.0%	100.0%	100.0%	100.0%

Furthermore, 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.

Rates of Termination from Active Employment:

These rates do not apply to participants eligible for Normal Retirement and do not include separation on account of death or disability. Termination rates are used to measure the probabilities of participants terminating employment for other reasons. The rates are based on the number of years of service and age. In addition, any employees 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	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 or more	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 or more	18.3%	14.8%	10.3%	6.3%	3.4%	2.2%	2.3%	3.4%	4.9%	--

Health Coverage Assumptions

Coverage Acceptance Rates:

Not all retirees will accept coverage and pay the required premium upon retirement. 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. Retirees changing coverage to The Tennessee Plan are considered lapsing coverage for the purpose of this Valuation.

Coverage Acceptance for Pre-65 Elections		
Subsidy Level	Total Acceptance Rate	Percentage of Retirees Electing Dual Coverage
80%	90%	45%
70%	80%	40%
60%	45%	22.5%

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.

Expected Retiree Contributions:

Members are required to make monthly contributions in order to maintain their coverage. For the purpose of this Valuation a weighted average has been used with weights derived from the current distribution of members among plans offered. Such average expected retiree premium contributions for the first year, before any direct State subsidies, are shown in the table below.

Average Premium (as of Valuation Date)	
Retiree	$ 734.00
Spouse	$ 806.00

Administrative Expenses:

Administrative expenses are included in the Per Capita Costs.

Per Capita Costs:

As described in Section D of this Report, expected monthly Per Capita (or per person) Costs were developed for the year following the Actuarial Valuation Date.

Healthcare Cost Trend Rates:

Monthly Per Capita Costs (PCC) and Retiree Contributions for Medical and Rx benefits are assumed to increase each year according to the rates set forth in the following table. For example, the Per Capita Costs for the calendar year 2019 are expected to increase by 6.75% over the 2018 costs.

The trend rate for the costs of benefits and premiums for years after 2019 are based on the forecasting model built and published (December 2007, as updated September 2016) in Modeling Long-Term Health Care Cost Trends sponsored by the Society of Actuaries and authored by Prof. Thomas E. Getzen. The long-term rates reflect a 2.25% assumed ultimate inflation rate, 25% resistance level for health care spending as a percent of GDP and a 32-year convergence period.

The rates presented below illustrate assumed medical cost inflation in the absence of the Excise Tax on High-Cost Employer Health Plans.

Annual Medical/Rx Increase Rates					
Year of	Medical/Rx	Premium	Year of	Medical/Rx	Premium
2019	6.75%	3.49%	**2027**	4.56%	4.56%
2020	6.25%	6.25%	**2028**	4.56%	4.56%
2021	5.75%	5.75%	**2029**	4.56%	4.56%
2022	5.09%	5.09%	**2030**	4.56%	4.56%
2023	4.99%	4.99%	**2031**	4.56%	4.56%
2024	4.88%	4.88%	**...**	...	...
2025	4.78%	4.78%	**2050**	3.53%	3.53%
2026	4.67%	4.67%	**Ultimate**	3.53%	3.53%

Consideration of Health Care Reform

Summary of Selected Provisions and Their Effects

Excise Tax on High-Cost Employer Health Plans (aka "Cadillac" Tax) Effective 1/1/2022: The "Cadillac" tax is a 40% excise tax paid by the coverage provider (employer and/or insurer) on the value of health plan costs in excess of certain thresholds. The thresholds for active employees and Medicare eligible retirees are $10,200 for single coverage or $27,500 for family coverage in 2018 and increased with inflation to 2022. Respective thresholds for retirees not eligible for Medicare are $11,850 and $30,950 for year 2018 and increased with inflation to 2022. Many plans are below the thresholds today, but are likely to exceed them in the next decade. The thresholds will be indexed at CPI-U, which is lower than the medical inflation rates affecting the cost of the plans. There is considerable uncertainty about how the tax would be applied, and considerable latitude in grouping of participants for tax purposes. Combining early retiree and Medicare eligible retiree costs is allowed and can keep plans under the thresholds for a longer period of time.

Should the excise tax become applicable, the Plan will be the coverage provider paying the tax which will be passed on to the employers and participants in the form of increased premiums applicable to employees and retirees. The State will need to decide whether to reduce benefits to avoid the tax, or how the additional cost will be allocated between the employer and the members. GASB does not permit recognition of future plan changes in a valuation, so the net claims growth assumption (reflected in the long-term trends) will be based on the current plan design.

Based on the assumptions used for this Valuation, premiums applicable to retirees are projected to become subject to excise tax in 2024. Although the amount of tax initially assessed on the health insurance premiums is not expected to be significant, it will increase over time. We are modeling the impact of the tax by adding 0.38% to the assumed medical trend rates for the 2024 plan year and all subsequent years.

Comparative Effectiveness Research Fee: PPACA established the Patient-Centered Outcomes Research Institute (the Institute) to conduct research to determine which of two or more treatments works best when applied to actual patients in the "real world." The work of the Institute is partially funded by a fee on health insurers and self-funded group health plans. This is deemed to be included in the initial per capita trend with no further adjustments.

Health Insurance Industry Fee: This fee on health insurers (including HMOs) starts at $8 billion in 2014 and increases year over year before reaching $14.3 billion in 2018. After 2018, it will continue to increase with premium growth. The fee, which applies only to insured plans, will be based on each insurer's share of the taxable health insurance premium base (among all health insurers of U.S. health risks). This fee does not apply to the self-insured plans and is not affecting plans administered by the State.

Implementation of the new requirements: We have not identified any other specific provision of health care reform that would be expected to have a significant impact on the measured obligation. As additional guidance on the legislation is issued we will review and monitor the impact.

Miscellaneous and Technical Assumptions

Roll Forward Disclosure:	Since the measurement date and the valuation date are the same, no update procedures were used to roll forward the total OPEB liability from the June 30, 2018 valuation date to the June 30, 2018 measurement date.
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.
Pay Increase Timing:	End of (fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year starting on the valuation date.
Decrement Timing:	Decrements of all types are assumed to occur at the middle of the year.
Decrement Operation:	All decrements operate simultaneously. Disability and termination rates cease upon eligibility for normal or early retirement.
Decrement Relativity:	Decrement rates are treated as absolute rates of decrement.
Adjustments:	None.

Assumption, Method, and Plan Changes

Assumption Changes:

1. The discount rate was changed from 3.56% as of the beginning of the measurement period to 3.62% as of June 30, 2018 (based on the Long-Term Municipal Bond rate). This change decreased the Total OPEB Liability.

2. Assumed initial costs and premium amounts were revised to reflect rates adopted for the 2019 plan year. These changes increased the Total OPEB Liability.

3. The near-term trend rates was changed from 5.40%, 5.30% and 5.20% for Plan Years 2019 to 2021, respectively, to 6.75%, 6.25% and 5.75% respectively. This change increased the Total OPEB Liability.

SECTION G

GLOSSARY OF TERMS

Glossary of Terms

Accrued Service — Service credited under the system that was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability (AAL) — The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."

Actuarial Assumptions — These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.

Actuarial Cost Method — A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the OPEB trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.

Actuarial Equivalent — A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.

Actuarial Gain (Loss) — The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.

Actuarial Present Value (APV) — The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.

Actuarial Valuation — The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total OPEB liability, and related actuarial present value of projected benefit payments for OPEB.

Actuarial Valuation Date — The date as of which an actuarial valuation is performed.

Glossary of Terms

Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)

A calculated contribution into an OPEB plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

Amortization Method

The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be "open" (meaning, reset each year) or "closed" (the number of years remaining will decline each year).

Amortization Payment

The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.

Cost-of-Living Adjustments

Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.

Cost-Sharing Multiple-Employer Defined Benefit OPEB Plan (cost-sharing OPEB plan)

A multiple-employer defined benefit OPEB plan in which the OPEB obligations to the employees of more than one employer are pooled and OPEB plan assets can be used to pay the benefits of the employees of any employer that provides benefits through the OPEB plan.

Covered-Employee Payroll

The payroll of employees that are provided with benefits through the OPEB plan.

Deferred Inflows and Outflows

The deferred inflows and outflows of OPEB resources are amounts used under GASB Statement No. 75 in developing the annual OPEB expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in the OPEB expense should be included in the deferred inflows or outflows of resources.

Discount Rate

For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically:

1. The benefit payments to be made while the OPEB plans' fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and
2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

Glossary of Terms

Entry Age Actuarial Cost Method (EAN)	The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit ages(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.
Fiduciary Net Position	The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.
GASB	The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.
Long-Term Expected Rate of Return	The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.
Money-Weighted Rate of Return	The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 74, the money-weighted rate of return is calculated as the internal rate of return on OPEB plan investments, net of OPEB plan investment expense.
Multiple-Employer Defined Benefit OPEB Plan	A multiple-employer plan is a defined benefit OPEB plan that is used to provide OPEB payments to the employees of more than one employer.
Municipal Bond Rate	The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.
Net OPEB Liability (NOL)	The NOL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit OPEB plan.
Non-Employer Contributing Entities	Non-employer contributing entities are entities that make contributions to an OPEB plan that is used to provide OPEB payments to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contributing entities.

Glossary of Terms

Normal Cost	The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.
Other Postemployment Benefits (OPEB)	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.
Real Rate of Return	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
Service Cost	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
Total OPEB Expense	The total OPEB expense is the sum of the following items that are recognized at the end of the employer's fiscal year: 1. Service Cost 2. Interest on the Total OPEB Liability 3. Current-Period Benefit Changes 4. Employee Contributions (made negative for addition here) 5. Projected Earnings on Plan Investments (made negative for addition here) 6. OPEB Plan Administrative Expense 7. Other Changes in Plan Fiduciary Net Position 8. Recognition of Outflow (Inflow) of Resources due to Liabilities 9. Recognition of Outflow (Inflow) of Resources due to Assets
Total OPEB Liability (TOL)	The TOL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
Unfunded Actuarial Accrued Liability (UAAL)	The UAAL is the difference between actuarial accrued liability and valuation assets.
Valuation Assets	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 74 and 75, the valuation assets are equal to the market value of assets.