

# State of South Carolina Public Employee Benefit Authority

Retiree Health Care Plan

GASB Statement No. 74, Financial Reporting for  
Postemployment Benefit Plans Other Than Pension Plans

Actuarial Valuation as of June 30, 2017  
Prepared for the Plan Year Ending June 30, 2018



October 2, 2018

State of South Carolina  
Public Employee Benefit Authority  
South Carolina Retirement System  
P.O. Box 11960  
Columbia, SC 29211-1960

Dear Members of the Board:

This report provides information on behalf of the State of South Carolina Public Employee Benefit Authority (PEBA) in connection with the Governmental Accounting Standards Board (GASB) Statement No. 74 "Financial Reporting for Postemployment Benefit Plans other than Pension Plans." The actuarial valuation was performed as of June 30, 2017. Because GASB Statement No. 74 requires liabilities and assets to be reported as of the end of the fiscal year, update procedures were used to roll forward the total OPEB liability to June 30, 2018.

The calculation of the liability associated with the benefits described in this report was performed solely for the purpose of satisfying the requirements of GASB Statement No. 74. 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. 74 may produce significantly different results. This report may be provided to parties other than the State of South Carolina Public Employee Benefit Authority only in its entirety and only with the permission of PEBA. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by PEBA, concerning other postemployment benefits (OPEB), active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not audited.

Based on the available data, the information contained in this report is accurate and fairly represents the actuarial position of the State of South Carolina Public Employee Benefit Authority as of the reporting date. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as the Actuarial Standards of Practice. 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.

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 signing individuals are independent of the plan sponsor.

Joseph Newton and Mehdi Riazi 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.

Respectfully submitted,



Joseph P. Newton, FSA, FCA, EA, MAAA, Senior Consultant



Mehdi Riazi, FSA, EA, MAAA, Consultant

Auditor's Note – This information is intended to assist in preparation of the financial statements of the State of South Carolina Retiree Health Care Plan. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

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# SECTION A

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## EXECUTIVE SUMMARY

# Executive Summary as of June 30, 2018

	<b>2018</b>
Actuarial Valuation Date	June 30, 2017
OPEB Plan's Fiscal Year Ending Date (Reporting Date)	June 30, 2018
 <b>Membership</b>	
Number of	
- Retirees and Beneficiaries	88,201
- Inactive, Nonretired Members	1,150
- Active Members	182,850
- Total	272,201
Covered Payroll	\$ 8,614,421,372
 <b>Net OPEB Liability</b>	
Total OPEB Liability	\$ 15,387,115,010
Plan Fiduciary Net Position	1,216,530,062
Net OPEB Liability	\$ 14,170,584,948
Plan Fiduciary Net Position as a Percentage of Total OPEB Liability	7.91 %
Net OPEB Liability as a Percentage of Covered Payroll	164.50 %
 <b>Development of the Single Discount Rate</b>	
Single Discount Rate	3.62 %
Long-Term Expected Rate of Return	4.00 %
Long-Term Municipal Bond Rate*	3.62 %

*\*Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in the Fidelity "20-Year Municipal GO AA Index" as of June 30, 2018*

# Discussion

## Accounting Standard

For post-employment (OPEB) benefit plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 74, “Financial Reporting for Postemployment Benefit Plans other than Pension Plans,” replaces the requirements of GASB Statement No. 43, “Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans.” GASB Statement No. 74 establishes standards of financial reporting for separately issued financial reports of state and local government OPEB plans.

Reporting under GASB Statement No. 74 is effective for plan fiscal years commencing after June 15, 2016.

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, and internal staff will be responsible for preparing that information to comply with this accounting standard.

## Financial Statements

GASB Statement No. 74 requires defined benefit OPEB plans to present two financial statements: a statement of fiduciary net position and a statement of changes in fiduciary net position.

The *statement of fiduciary net position* presents the following items as of the end of the OPEB plan’s reporting period:

- Assets;
- Receivables (deferred inflows and outflows of resources);
- Investments;
- Liabilities; and
- Fiduciary net position (assets, plus deferred outflows, minus liabilities, minus deferred inflows).

The *statement of changes in fiduciary net position* presents the following for the plan’s reporting period:

- Additions, such as contributions and investment income;
- Deductions, such as benefit payments and expenses; and
- Net increase or decrease in the fiduciary net position (the difference between additions and deductions).

## Notes to Financial Statements

GASB Statement No. 74 also requires the notes of the plan's financial statements to include additional disclosure information. This disclosure information should include:

- **Plan Description:**
  - The name of the OPEB plan, the administrator of the OPEB plan, and the identification of whether the OPEB plan is a single-employer, agent, or cost-sharing OPEB plan.
  - The number of participating employers (if agent or cost-sharing OPEB plan) and the number of nonemployer contributing entities.
  - The composition of the OPEB plan's Board and the authority under which benefit terms may be amended.
  - The number of plan members by category and if the plan is closed.
  - The authority under which benefit terms are established or may be changed, the types of benefit provided and the classes of plan members covered. A brief description of the benefits and the description of automatic postemployment benefit changes and the sharing of benefit-related costs with inactive plan members.
  - A brief description of contribution requirements, including (a) identification of the authority under which contribution requirements of employers, nonemployer contributing entities, and plan members are established or may be amended; (b) the contribution rates of the employer, nonemployer contributing entities, and plan members; and (c) legal or contractual maximum contribution rates. If the OPEB plan of the entity that administers the OPEB plan has the authority to establish or amend contribution requirements, disclose the basis for determining contributions.
- **Plan Investments:**
  - A description of investment policies, including procedures for making and amending investment decisions; policies for asset allocation; and description of any significant changes in investment policy occurring during the reporting period.
  - Identification of investments that represent 5% or more of the fiduciary net position.
  - The annual money-weighted rate of return on the OPEB plan investments.
- **Receivables:**
  - The terms of any long-term contracts for contributions to the OPEB plan and the outstanding balance on any such long-term contracts.
- **Allocated insurance contracts excluded from OPEB plan assets**
- **Reserves:**
  - A description of the policy related to reserves;
  - The authority for the reserve policy;
  - The conditions under which the reserves can be used; and
  - The balances of the reserves.

**In addition, Single-Employer and Cost-Sharing OPEB plans should disclose the following information in notes to financial statements:**

- The components of the net OPEB liability:
  - The total OPEB liability;
  - The fiduciary net position;
  - The net OPEB liability; and
  - The OPEB plan's fiduciary net position as a percentage of the total OPEB liability.
- Significant assumptions and other inputs used to measure the total OPEB liability:
  - Significant assumptions include inflation, healthcare cost trend rates, salary changes, ad hoc postemployment benefit changes, and the sharing of benefit-related costs with inactive plan members.
  - If applicable, the patterns of practice relied upon for projecting the sharing of benefit-related costs with inactive plan members.
  - The source of the assumptions for mortality.
  - The dates of experience studies on which assumption are based.
- Measure of the net OPEB liability using +/- 1% on the healthcare trend rate.
- On the discount rate:
  - The discount rate used and the change in the discount rate since the prior fiscal year-end.
  - Assumptions about projected cash flows.
  - The long-term expected rate of return on OPEB investments and a description of how it was determined.
  - The municipal bond rate used and the source of that rate.
  - The periods of projected benefit payments to which the long-term expected rate of return are used.
  - The assumed asset allocation of the portfolio and the long-term expected real rate of return for each major asset class, and whether the returns are arithmetic or geometric.
  - Measure of the net OPEB liability using +/- 1% on the discount rate.
- The date of the valuation and, if applicable, the fact that update procedures were used to roll forward the total OPEB liability.

## **Required Supplementary Information**

For Single-Employer and Cost-Sharing OPEB Plans, GASB Statement No. 74 requires a 10-year fiscal history of:

- Sources of changes in the net OPEB liability;
- Information about the components of the net OPEB liability and related ratios, including the OPEB plan's fiduciary net position as a percentage of the total OPEB liability, and the net OPEB liability as a percent of covered-employee payroll;
- Comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy along with the significant methods and assumptions used in calculating the actuarially determined contributions; and
- The annual money-weighted rate of return on OPEB plan investments for each year.

Notes to the required schedules should include factors that significantly affect trends in the amounts reported (for example, changes of benefit terms, changes in the size or composition of the population covered, or the use of different assumptions). Information about investment-related factors that significantly affect trends in the amounts reported should be limited to those factors over which the OPEB plan or the participating governments have influence.

## **Measurement of the Net OPEB Liability**

The net OPEB liability is to be measured as the total OPEB liability, less the amount of the OPEB plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement). The net OPEB liability should be measured as of the OPEB plan's most recent fiscal year end.

## **Frequency and Timing of the Actuarial Valuation**

An actuarial valuation to determine the total OPEB liability is required to be performed at least every two years. If the actuarial valuation is not calculated as of the plan's fiscal year end, the total OPEB liability is required to be rolled forward from the actuarial valuation date to the OPEB plan's fiscal year end. If update procedures are used to roll forward the total OPEB liability, the date of the actuarial valuation must be no more than 24 months earlier than the OPEB plan's most recent fiscal year-end.

The actuarial valuation was performed as of June 30, 2017. Update procedures were used to roll forward the total OPEB liability to June 30, 2018.

## **Single Discount Rate**

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on OPEB plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) 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 (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on OPEB plan investments is 4.00%; the municipal bond rate is 3.62% (based on the daily rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index"); and the resulting Single Discount Rate is 3.62%.

The accounting policy for this plan is to set the Single Discount Rate equal to the prevailing municipal bond rate. Due to the plan's investment and funding policies, the difference between a blended discount rate and the municipal bond rate would be less than several basis points (several hundredths of one percent).

## Actuarial Assumptions

The actuarial assumptions used to value the liabilities are outlined in detail in Section H. The assumptions include details on the healthcare trend assumption, the aging factors, as well as the cost method used to develop the OPEB expense. The demographic assumptions were based on the experience study covering the five year period ending June 30, 2015, as conducted for the South Carolina Retirement Systems. The assumptions which are specific to the OPEB valuation are monitored during each valuation and updated annually, if required.

## 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; and
- Participant behavior differing from expected, e.g.,
  - Elections at retirement;
  - One-person versus two-person coverage elections; and
  - Time of retirement or termination.

## Benefits Valued

The benefit provisions that were valued are described in Section E. 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 actuaries IMMEDIATELY, so they can both be sure the proper provisions are valued.

## Effective Date and Transition

GASB Statement No. 74 is effective for an OPEB plan's fiscal years beginning after June 15, 2016.

**SECTION B**

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**FINANCIAL STATEMENTS**

## Statement of Fiduciary Net Position as of June 30, 2018

	<b>2018</b>
<b>Assets</b>	
Cash and cash equivalents	\$ 9,414,568
Receivables	
Due from State Agencies	\$ 67,069,361
Accrued Interest	7,195,024
Invested Securities Lending Collateral	7,385,657
Accounts Receivable - Other	0
<b>Total Receivables</b>	<b>\$ 81,650,041</b>
Investments	
Fixed Income	\$ 1,133,009,656
<b>Total Assets</b>	<b>\$ 1,224,074,265</b>
<b>Liabilities</b>	
Payables	
Accounts Payable	\$ 0
Collateral for Loaned Securities	7,544,203
Due to PEBA	0
<b>Total Liabilities</b>	<b>\$ 7,544,203</b>
<b>Net Position Restricted for OPEB</b>	<b>\$ 1,216,530,062</b>

## Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2018

	<b>2018</b>
<b>Additions</b>	
Contributions	
Employer	\$ 460,477,569
Nonemployer contributing entities	106,948,694
Total Contributions	\$ 567,426,263
Investment Income	
Investment Income	\$ 467,297
Securities lending activities income	48,310
Net Investment Income	\$ 515,607
<b>Total Additions</b>	<b>\$ 567,941,870</b>
 <b>Deductions</b>	
Benefit Payments	\$ 466,121,568
Administrative Expense	65,000
<b>Total Deductions</b>	<b>\$ 466,186,568</b>
<b>Net Increase in Net Position</b>	<b>\$ 101,755,302</b>
 <b>Net position restricted for postemployment benefits other than pensions</b>	
Beginning of Year	\$ 1,114,774,760
End of Year	\$ 1,216,530,062

## SECTION C

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### REQUIRED SUPPLEMENTARY INFORMATION

# Schedule of Changes in Net OPEB Liability and Related Ratios Multiyear

## Last 10 Fiscal Years (which may be built prospectively)

Fiscal year ending June 30,	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
<b>Total OPEB liability</b>										
Service cost	\$ 521,172,493	\$ 610,843,077								
Interest on the total OPEB liability	522,862,057	455,295,633								
Changes of benefit terms	0	0								
Difference between expected and actual experience	246,504,202	(6,819,786)								
Changes of assumptions	(96,913,144)	(1,478,557,636)								
Benefit payments	(466,121,568)	(416,089,964)								
<b>Net change in total OPEB liability</b>	727,504,040	(835,328,676)								
<b>Total OPEB liability - beginning</b>	14,659,610,970	15,494,939,646								
<b>Total OPEB liability - ending (a)</b>	<u>\$ 15,387,115,010</u>	<u>\$ 14,659,610,970</u>								
<b>Plan fiduciary net position</b>										
Employer contributions	\$ 460,477,569	\$ 411,799,086								
Nonemployer contributing entities	106,948,694	79,306,737								
OPEB plan net investment income	515,607	13,460,171								
Benefit payments	(466,121,568)	(416,089,964)								
OPEB plan administrative expense	(65,000)	(10,000)								
Other	0	0								
<b>Net change in plan fiduciary net position</b>	101,755,302	88,466,030								
<b>Plan fiduciary net position - beginning</b>	1,114,774,760	1,026,308,730								
<b>Plan fiduciary net position - ending (b)</b>	<u>\$ 1,216,530,062</u>	<u>\$ 1,114,774,760</u>								
<b>Net OPEB liability - ending (a) - (b)</b>	<u>\$ 14,170,584,948</u>	<u>\$ 13,544,836,210</u>								
<b>Plan fiduciary net position as a percentage of total OPEB liability</b>	7.91 %	7.60 %								
<b>Covered-employee payroll</b>	\$ 8,614,421,372	\$ 8,437,059,071								
<b>Net OPEB liability as a percentage of covered-employee payroll</b>	164.50 %	160.54 %								

**Notes to Schedule:**

The discount rate changed from 3.56% as of June 30, 2017 to 3.62% as of June 30, 2018.

The discount rate changed from 2.92% as of June 30, 2016 to 3.56% as of June 30, 2017.

## Schedule of the Net OPEB Liability Multiyear

FY Ending June 30,	Total OPEB Liability	Plan Net Position	Net OPEB Liability	Plan Net Position as a % of Total OPEB Liability	Covered Payroll	Net OPEB Liability as a % of Covered Payroll
2016	15,494,939,646	1,026,308,730	14,468,630,916	6.62 %	8,137,661,670	177.80 %
2017	14,659,610,970	1,114,774,760	13,544,836,210	7.60 %	8,437,059,071	160.54 %
2018	15,387,115,010	1,216,530,062	14,170,584,948	7.91 %	8,614,421,372	164.50 %

The discount rate changed from 3.56% as of June 30, 2017 to 3.62% as of June 30, 2018.  
 The discount rate changed from 2.92% as of June 30, 2016 to 3.56% as of June 30, 2017.

## Schedule of Investment Returns Multiyear

### Last 10 Fiscal Years (which may be built prospectively)

<u>FY Ending June 30,</u>	<u>Annual Return<sup>1</sup></u>
2017	1.36 %
2018	0.27 %

<sup>1</sup> Annual money-weighted rate of return, net of investment expenses.

**SECTION D**

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**NOTES TO FINANCIAL STATEMENTS**

## Net OPEB Liability as of June 30, 2018

	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability
<b>Beginning balance</b>	<u>\$14,659,610,970</u>	<u>\$ 1,114,774,760</u>	<u>\$ 13,544,836,210</u>
Service cost	521,172,493		521,172,493
Interest on the total OPEB liability	522,862,057		522,862,057
Changes of benefit terms	0		0
Difference between expected and actual experience	246,504,202		246,504,202
Changes of assumptions	(96,913,144)		(96,913,144)
Employer contributions		460,477,569	(460,477,569)
Nonemployer contributing entities		106,948,694	(106,948,694)
Net investment income		515,607	(515,607)
Benefit payments	(466,121,568)	(466,121,568)	0
Administrative expense		(65,000)	65,000
Other		0	0
<b>Net changes</b>	<u>727,504,040</u>	<u>101,755,302</u>	<u>625,748,738</u>
<b>Ending balance</b>	<u>\$15,387,115,010</u>	<u>\$ 1,216,530,062</u>	<u>\$ 14,170,584,948</u>

Only the components of the ending Net OPEB Liability are required disclosures.

### Single Discount Rate

A Single Discount Rate of 3.62% was used to measure the total OPEB liability.

The accounting policy for this plan is to set the Single Discount Rate equal to the prevailing municipal bond rate. Due to the plan's investment and funding policies, the difference between a blended discount rate and the municipal bond rate would be less than several basis points (several hundredths of one percent).

### Asset Allocation

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return	Allocation-Weighted Long-Term Expected Real Rate of Return
U.S. Domestic Fixed Income	80.00 %	2.09 %	1.67 %
Cash	20.00 %	0.84 %	0.17 %
<b>Total</b>	<u>100.00 %</u>		<u>1.84 %</u>
Expected Inflation			<u>2.25 %</u>
<b>Total Return</b>			<u>4.09 %</u>
<b>Investment Return Assumption</b>			4.00 %

## Summary of Membership Information

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

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	88,201
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	1,150
Active Plan Members	<u>182,850</u>
Total Plan Members	272,201

## Roll Forward Disclosure

The actuarial valuation was performed as of June 30, 2017. Update procedures were used to roll forward the total OPEB liability to June 30, 2018

## Sensitivity of Net OPEB Liability

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

### Sensitivity of Net OPEB Liability to the Single Discount Rate Assumption

<b>1% Decrease</b>	<b>Current Single Discount</b>	<b>1% Increase</b>
<b>2.62%</b>	<b>Rate Assumption</b>	<b>4.62%</b>
<b>3.62%</b>		
<u>\$ 16,694,310,371</u>	<u>\$ 14,170,584,948</u>	<u>\$ 12,136,262,451</u>

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

### Sensitivity of Net OPEB Liability to the Healthcare Cost Trend Rate Assumption

<b>1% Decrease</b>	<b>Current Healthcare Cost</b>	<b>1% Increase</b>
	<b>Trend Rate Assumption</b>	
<u>\$ 11,660,103,553</u>	<u>\$ 14,170,584,948</u>	<u>\$ 17,416,172,438</u>

## Actuarial Assumptions and Methods

**Valuation Date:** June 30, 2017

### Methods and Assumptions

Actuarial Cost Method	Entry Age Normal
Inflation	2.25%
Investment Rate of Return	4.00%, net of OPEB plan investment expense, including inflation
Single Discount Rate	3.62% as of June 30, 2018
Demographic Assumptions	Based on the experience study performed for the South Carolina Retirement Systems for the 5-year period ending June 30, 2015
Health Care Trend Rates	Initial trend starting at 6.75% and gradually decreasing to an ultimate trend rate of 4.15% over a period of 14 years
Aging factors	Based on plan specific experience
Participation Assumption	79% for retirees that are eligible for Funded Premiums 59% for retirees that are eligible for Partial Funded Premiums 20% for retirees that are eligible for Non-Funded Premiums

### Other Information:

Notes The discount rate changed from 3.56% as of June 30, 2017 to 3.62% as of June 30, 2018. There was also a small change to the tables used to develop the age-adjusted retiree claims.

**SECTION E**

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**SUMMARY OF BENEFIT PROVISIONS**

## Obligations of the State of South Carolina

The State of South Carolina has basically two levels of OPEB provided through the Employee Insurance Program (EIP). In the following pages and common usage, these are called the *Implicit Rate Subsidy* and the *State-Funded Subsidy*.

### *Implicit Rate Subsidy*

The *Implicit Rate Subsidy* inures to the benefit of the retirees and their dependents by reason of not having to pay the true age-adjusted cost of coverage. The blended group premiums paid are developed each year by the EIP for the various plans and tiers of coverage and, generally, called the “Non-Funded Premiums”. These are derived by blending the expected cost of coverage among both active and retired employees. Generally speaking, the blended group premium is lower than the true cost for Non-Medicare retirees and higher than the true cost for active employees and Medicare retirees. By applying those blended group premiums to active employees and their dependents, the State is thereby financing a part of the total retiree cost. So, the *Implicit Rate Subsidy* is financed on a pay-as-you-go basis by loading the monthly rates charged by EIP for coverage (employer plus employee rates), sufficient to make up the difference between the true cost of retirees’ coverage and these published monthly rates. All eligible Non-Medicare retirees of the State enjoy this *Implicit Rate Subsidy*.

### *State-Funded Subsidy*

The *State-Funded Subsidy* is an additional benefit to certain retirees because it allows them to pay the same portion of the total blended group premium that active employees are required to pay. So the retirees pay only the “employee portion” rather than the total blended group premium. This is, generally, called the “Funded Premium”. This benefit to retirees is also financed on a pay-as-you-go basis. But rather than building this subsidy into the blended group premiums, it is financed each year by charging the employers a given percent of the current year’s active employee payroll (a “surcharge”) sufficient to cover the current years expected *State-Funded Subsidy*. Almost all eligible employees and retirees enjoy this *State-Funded Subsidy*.

To illustrate these two levels of OPEBs (*Implicit Rate Subsidy* and *State-Funded Subsidy*), consider a 62-year-old male State retiree and his 62-year-old spouse in the Standard Plan offered by the EIP. Such a retiree may elect either single coverage or retiree plus spouse coverage.

	Single Retiree	Retiree & Spouse
(1) Current Estimated True Monthly Cost of Coverage	\$812.64	\$1,590.11
(2) Current Total Published Monthly Premium Collected	460.66	972.34
(2a) Portion Paid by Employer/State	362.98	718.98
(2b) Portion Paid by Employee/Retiree	97.68	253.36
(3) Current Monthly <b>Implicit Rate Subsidy</b> : (1)-(2)	351.98	617.77
(4) Current Monthly <b>State-Funded Subsidy</b> : (2)-(2b)=(2a)	362.98	718.98

Based on Calendar Year 2017 rates and expected claims

The example above is for 62-year old retirees. The implicit subsidy varies by age and Medicare status.

## Substantive Plan

The pages that follow summarize the Substantive Plan provisions for OPEB benefits provided to members whose employers participate in EIP. This is just a summary. Other documents adopted or approved by EIP and/or the Public Employee Benefit Authority (PEBA) constitute the authoritative sources. In any conflict that might arise between such documents and this summary, such other documents govern.

For the purpose of this summary, “Earned Service” means creditable service as defined and used by the respective State-administered retirement systems for pension benefit eligibility, with respect to which the employee worked for a covered entity (which participates in the State-administered Employee Insurance Program) and with respect to which the last five (5) years are consecutive and in a full-time permanent position.

## State OPEBs Subject to GASB Statement No. 74

Certain OPEBs available to eligible State and School District employees and retirees must be reflected in the Trust’s financial statements pursuant to GASB Statement No. 75. These benefits include subsidized medical/prescription benefits, dental benefits, and long term disability benefits. Other post-employment benefits provided through EIP that do not require any actuarial valuation under GASB Statement No. 74 and 75 include dental plus, vision, optional life insurance and supplemental long term disability benefits. These require no special calculations or recognition because they are fully paid by the employees and retirees, without any funding by the State (implicitly or otherwise).

Employees and retirees of other Local Jurisdictions may benefit from OPEBs as well. However, the obligation associated with those OPEBs are not the Trust's obligations. They are the obligations of the Local Jurisdictions, which would expense and disclose their own respective obligations in their own respective financial statements.

#### *Medical/Prescription Coverage*

Certain State and School District retirees and their dependents and survivors are eligible to continue coverage under the various State-sponsored medical/prescription plans by paying a subsidized rate. Retirees may elect coverage for medical/prescription benefits without coverage for dental benefits.

#### *Dental Coverage*

Certain State and School District retirees and their dependents and survivors are eligible to continue coverage under the State-sponsored basic dental plan by paying a subsidized rate. Retirees may elect coverage for dental benefits without medical/prescription benefits.

#### *Basic Long Term Disability*

Certain State employees who become disabled may apply for Basic Long term Disability (BLTD) benefits. This benefit is provided without cost to the employee. The BLTD coverage is an employer-financed self-insured program and, thus, subject to reporting under GASB Statement No.74. The liabilities associated with the Long Term Disability plan are provided in a separate report.

### **Eligibility for Medical/Prescription and Dental Benefits**

A two-tier eligibility standard is required for the State of South Carolina to be obligated to provide medical/prescription and dental OPEBs.

First, State and School District employees must be eligible for monthly retirement benefits under the *Vesting, Disability, and Early or Normal Retirement* provisions of any one of the four respective State-administered defined benefit retirement systems. Furthermore, if participating in the Optional Retirement Plan (ORP), employees must satisfy the same eligibility requirements for Vesting, Disability, Early or Normal Retirement under SCRS. The various benefit eligibility requirements for the State-administered Retirement Systems are described in detail in the July 1, 2017 annual actuarial valuations performed by Gabriel, Roeder, Smith and Company.

EIP enforces other eligibility requirements before retired State and School District employees may be considered eligible to benefit from State-obligated OPEBs. Almost all employees receiving pension benefits from one of the State-administered retirement systems are eligible to benefit from the *Implicit Rate Subsidy*, and most are eligible to benefit from the *State-Funded Subsidy*.

Those retirees that pay the Non-Funded Premium enjoy the benefit of the *Implicit Rate Subsidy*, as explained previously, and those that qualify for paying the Funded Premium enjoy the benefit of both the *Implicit Rate Subsidy* and the *State-Funded Subsidy*, as explained previously.

### *Vesting Retirement*

Certain employees who terminate employment with the right to a vested deferred pension benefit are permitted to elect medical/prescription and dental coverage under the plan, commencing at age 60.

If such a former employee does not have at least 20 years of Earned Service at the time of termination, no retiree insurance coverage is available. However, if such a former employee does have at least 20 years of Earned Service at the time of termination, the premium required to be paid is only the Funded Premium for the plan and dependent option elected.

### *Disability Retirement*

Certain employees who qualify for disability pensions or who qualify for the Basic LTD benefits are permitted to elect continued medical/prescription and dental coverage under the plan, commencing when either type of monthly disability benefits is approved.

If such a disabled employee does not have at least five (5) years of Earned Service, no retiree coverage is available. If such disabled employee does have at least five (5) years but does not have at least 10 years of Earned Service at the time of disability approval, the premium required to be paid is the Non-Funded Premium for the plan and dependent option elected. However, if such disabled employee has at least 10 years of Earned Service at the time of disability approval, the premium required to be paid is only the Funded Premium for the plan and dependent option elected.

### *Death*

Surviving dependents of deceased active employees are permitted to continue coverage by paying a required monthly premium, provided both the employee and the surviving dependents were covered under medical/prescription and dental at the time of death. Eligibility for survivor coverage for dependents of active employees does not require eligibility for survivor death benefits under the retirement systems (unlike vesting, disability and early or normal retirement) and no service requirement is necessary for dependents to continue coverage. The required health premium for the first year of coverage following the death of such employee is waived. Surviving spouses may continue coverage for life or until remarriage. Surviving children may continue coverage until limiting ages the same as children of active employees.

In the event that the death of the active employee occurred in the line of duty, the required premium after the first year is only the Funded Premium for the plan and dependent option elected. In the

event that the death of the active employee did not occur in the line of duty, the required premium after the first year is the Non-Funded Premium for the plan and dependent option elected.

Surviving dependents of deceased retirees are permitted to continue coverage by paying a required monthly premium, provided both the retiree and the surviving dependents were covered under medical/prescription and dental at the time of death. Surviving spouses may continue coverage for life or until remarriage. Surviving children may continue coverage until limiting ages the same as children of active employees.

If the deceased retiree had at least 10 years of Earned Service at the time of retirement (and, thus, had been paying only the Funded Premium), the required health premium for the first year of coverage following death is waived. Thereafter, the surviving dependents pay the Non-Funded Premium for the plan and dependent option elected. If the deceased retiree had at least five (5) but not 10 years of Earned Service, there is no waiver of premium for the surviving dependents for the first year and the required premium is the Non-Funded Premium for the plan and dependent option elected.

### *Early Retirement*

Any employee retiring with at least five (5) years of Earned Service who qualifies for a retirement pension under any Early Retirement provision of SCRS (“Early Retiree”), but not the Normal Retirement provision, is permitted to elect continued medical/prescription and dental coverage under the plan commencing when the Early Retirement pension commences. PORS, GARS and JSRS do not have any specific Early Retirement provision.

To continue coverage, such an Early Retiree is required to pay the Non-Funded Premium for the plan and dependent option elected until the State-Funded Date which is the earlier of age 60 or the date the person would have had 30 years’ of Earned Service assuming continued employment (28 for employees retiring Early on or after January 1, 2001). If such Early Retiree had less than 10 years of Earned Service at the time of retirement, then the Non-Funded Premium will continue to be charged for life, with no State-Funded Date applicable.

After the applicable State-Funded date, any such Early Retiree is required to pay only the Funded Premium for the plan and dependent option elected, provided the Early Retiree had at least 10 years of Earned Service.

### *Normal Retirement*

Any employee retiring with at least five (5) years of Earned Service who qualifies for a retirement pension under any Normal Retirement provision (“Normal Retiree”), but not the Early Retirement provision, is permitted to elect continued medical/prescription and dental coverage. Any Normal retiree with less than five (5) years of Earned Service may not continue medical/prescription or dental coverage.

To continue coverage, a Normal Retiree with at least five (5) but less than 10 years of Earned Service is required to pay the Non-Funded Premium for the plan and dependent option elected.

A Normal Retiree with at least 10 years of Earned Service is required to pay only the Funded Premium for the plan and dependent option elected.

### *Other Circumstances*

In addition to the previous rules regarding eligibility based on Earned Service, a member of the General Assembly who leaves office (whether by Vested Termination, Disability, Death or Retirement) with at least eight (8) years of creditable service for retirement system purposes is required to pay the Non-Funded Premium for the plan and dependent option elected.

### *New Members hired as of May 2, 2008*

Members hired as of May 2, 2008 have a tiered eligibility formula to determine the retiree paid Premium during retirement:

Service at Retirement	Premium for Coverage
< 15 years	Non-Funded Premium
15-24 Years	Partial Funded Premium
>= 25 Years	Funded Premium

The Partial Funded Premium is the average between the Funded and the Non-Funded Premium. The Trust will continue to have additional liability for all retirees for any Implicit Subsidy provided through the premium structure.

## Retiree Contributions for Health-related Benefits

In order to begin and maintain medical/prescription and dental coverage for retirees, dependent and survivors, premiums may be required. The amount of premium required depends on the plan and dependent option elected and depends on several other factors described above. The level of premium required was described in terms of Funded Premiums and Non-Funded Premiums. Generally speaking, Non-Funded Premiums are equivalent to the total blended group premiums determined by the State each year for the plan and dependent options offered. Whereas, Funded Premium generally refers to the employee-paid Funded Premiums for the plan and dependent options offered (as paid by active employees from payroll deductions).

The Funded and Non-Funded Premiums for the year beginning January 1, 2018 are found in the chart at the end of this Section entitled, "Required Premiums for Continued Coverage".

## Termination and Amendment

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

**Required Premiums for Continued Coverage  
Effective January 1, 2018**

	Savings <sup>2</sup>	Standard	Supplemental <sup>3</sup>	Dental
<b><u>Non-Funded Premiums (monthly)<sup>1</sup></u></b>				
For Non-Medicare Retiree	\$384.66	\$472.64	NA	\$13.48
For Non-Medicare Spouse	\$435.46	\$523.44	\$523.44	\$7.64
For Medicare Retiree	NA	\$454.64	\$472.64	\$13.48
For Medicare Spouse	\$435.46	\$505.44	\$523.44	\$7.64
For Non-Medicare Surviving Spouse	\$384.66	\$472.64	NA	\$13.48
For Medicare Surviving Spouse	NA	\$454.64	\$472.64	\$13.48
<b><u>Funded Premiums (monthly)<sup>1</sup></u></b>				
For Non-Medicare Retiree	\$9.70	\$97.68	NA	\$0.00
For Non-Medicare Spouse	\$67.70	\$155.68	\$155.68	\$7.64
For Medicare Retiree	NA	\$79.68	\$97.68	\$0.00
For Medicare Spouse	\$67.70	\$137.68	\$155.68	\$7.64
For Non-Medicare Surviving Spouse	\$9.70	\$97.68	NA	\$0.00
For Medicare Surviving Spouse	NA	\$79.68	\$97.68	\$0.00

<sup>1</sup> Other Dependents (besides Spouses) are eligible under the terms of the post-employment benefit plan. However, for actuarial purposes, only premiums for retirees, spouses and surviving spouses are presented in this table.

<sup>2</sup> Savings plan is not available to retirees eligible for Medicare. The Spouse may be eligible for Medicare.

<sup>3</sup> Supplemental Plan is generally only for Medicare members. However, a split contract in which one is Medicare-eligible and the other is not, is available. The coverage and premium for the Non-Medicare party is based on the Standard Plan.

Premiums shown above do not include the Tobacco Surcharge. The Tobacco Surcharge is \$40/month for subscriber only coverage and an additional \$20/month for dependent coverage.

**SECTION F**

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**DEVELOPMENT OF BASELINE CLAIMS COSTS**

# Development of Baseline Costs

## Data Sources

The Employee Insurance Program (EIP) maintains a substantial amount of data for all its covered members for many years of coverage. Substantial data maintained by the Retirement Systems was also provided for the purpose of this OPEB Valuation. Claims and exposures for the three-year period ending December 31, 2016 were used for the development of the Baseline Costs. These were compared to industry data for reasonableness. The actual claims and exposures were available by age, sex, status, member type, plan coverage, years since retirement, etc. The actual claims and exposure data were reliable and credible for the development of reasonable Baseline Costs.

## Baseline Costs

An OPEB Valuation is a projection of long term benefit costs. So as a starting point, initial, current year costs must be developed. Projections of future costs, many years ahead, are based upon these initial current year costs. Care must be taken to ensure that reasonable Baseline Costs are developed for each relevant Costing Variable.

Baseline Costs for this OPEB Valuation take the form of tables of current costs of benefits for retirees (and their dependents and survivors), separately by:

- Age (20 through 110),
- Sex (M and F),
- Benefit type (medical, prescription drug and dental),
- Health status (disabled and non-disabled),

Following are charts that present the Baseline Costs used in this OPEB Valuation. These represent the expected monthly cost of providing the benefits promised for the calendar year ending December 31, 2017 for a sample of ages:

Baseline Costs for Non-Disabled Retirees and Spouses (Expected Monthly Per Capita Costs for Calendar Year 2017)						
Age	Medical Coverage		Prescription Drug Coverage		Dental Coverage	
	Male	Female	Male	Female	Male	Female
50	\$337.30	\$372.01	\$176.53	\$202.10	\$16.22	\$16.22
55	\$406.81	\$422.93	\$212.23	\$225.34	\$16.22	\$16.22
60	\$489.93	\$482.12	\$260.40	\$257.75	\$16.22	\$16.22
65	\$141.41	\$125.60	\$176.63	\$169.36	\$16.22	\$16.22
70	\$153.60	\$131.94	\$188.51	\$179.32	\$16.22	\$16.22
75	\$161.08	\$137.07	\$191.89	\$184.54	\$16.22	\$16.22
80	\$163.79	\$141.00	\$191.89	\$185.40	\$16.22	\$16.22

Baseline Costs for Disabled Retirees (Expected Monthly Per Capita Costs for Calendar Year 2017)						
Age	Medical Coverage		Prescription Drug Coverage		Dental Coverage	
	Male	Female	Male	Female	Male	Female
Under 65	\$512.35	\$512.35	\$615.89	\$615.89	\$16.22	\$16.22
65	\$141.41	\$125.60	\$176.63	\$169.36	\$16.22	\$16.22
70	\$153.60	\$131.94	\$188.51	\$179.32	\$16.22	\$16.22
75	\$161.08	\$137.07	\$191.89	\$184.54	\$16.22	\$16.22
80	\$163.79	\$141.00	\$191.89	\$185.40	\$16.22	\$16.22

## Costing Variables

Baseline Costs vary depending on many different factors or characteristics of each member. For example, age is possibly the most obvious variable that affects the cost of medical coverage. Age has little or no effect on the cost of full dental coverage.

No significant difference was found in the Baseline Costs of retirees and spouses. Such membership status, therefore, was deemed not to be a necessary Costing Variable and the data for them were combined.

The following plans are available to retirees:

- The Savings Plan (Non Medicare Eligible Only)
- The Standard Plan
- The Supplemental Plan (Only if eligible for Medicare)
- Dental

No significant difference was found in the Baseline Costs of members age 65 and over electing the Standard Plan and the members electing the Supplemental Plan. Furthermore, there were very few members electing the other Plan Options compared to those electing the Standard Plan and the Supplemental Plan, at all ages. Therefore, all claims and exposures for all Plan Options were combined to develop a single set of Baseline Costs for each other relevant Costing Variable.

Likewise, a single set of current retiree premiums were developed by weighting the current retiree premium structure by the current enrollment.

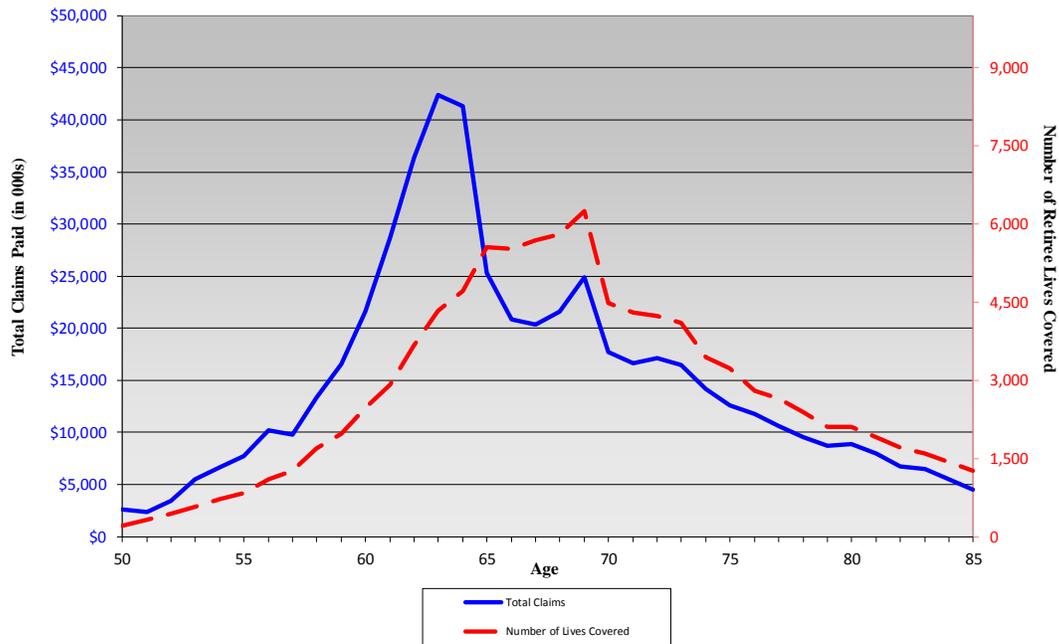
As expected, disabled retirees demonstrated substantially different Baseline Costs, as compared to non-disabled retirees. Additionally, the pattern of costs by age differs significantly, as compared to non-disabled retirees.

## Methodology

### Gather Data

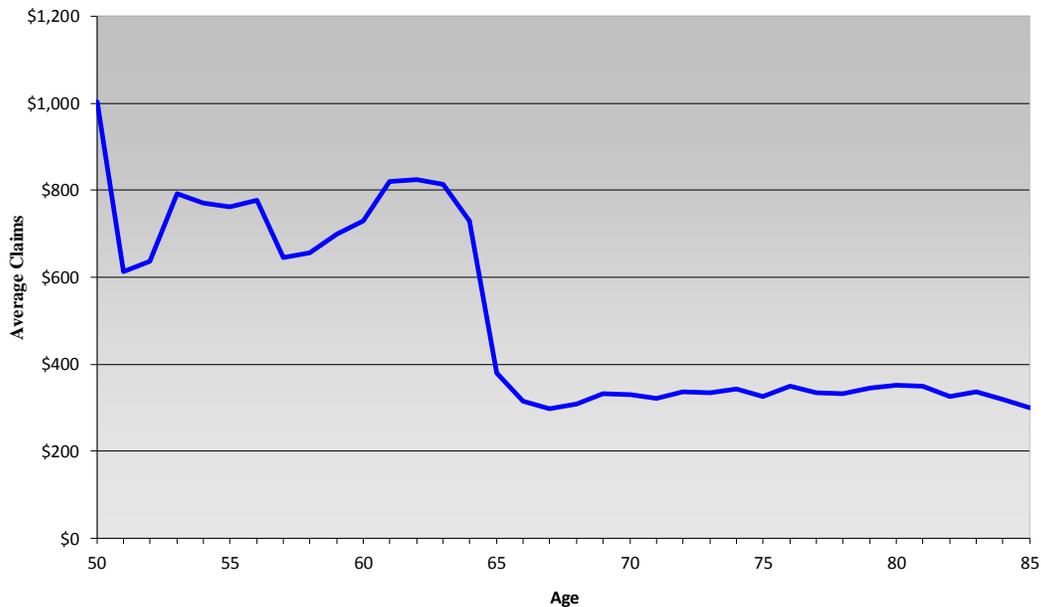
The first step in determining the expected claims for the population was to gather claims data. Paid claims data for medical and pharmacy were analyzed by age and sex. The following graph shows the total paid claims for the period January 1, 2016 through December 31, 2016 by age, along with the number of lives covered over the same period.

2016 Total Claims Paid Compared to Number of Retiree Lives Covered, by Age  
(\$ in '000s)



The total claims before age 65 are increasing considerably faster than the number of lives is increasing. For example, the average claim per member is higher for a member age 63 than a member age 57. The following graph shows the average monthly claim costs per member.

2016 Actual Monthly Claims Per Retired Member

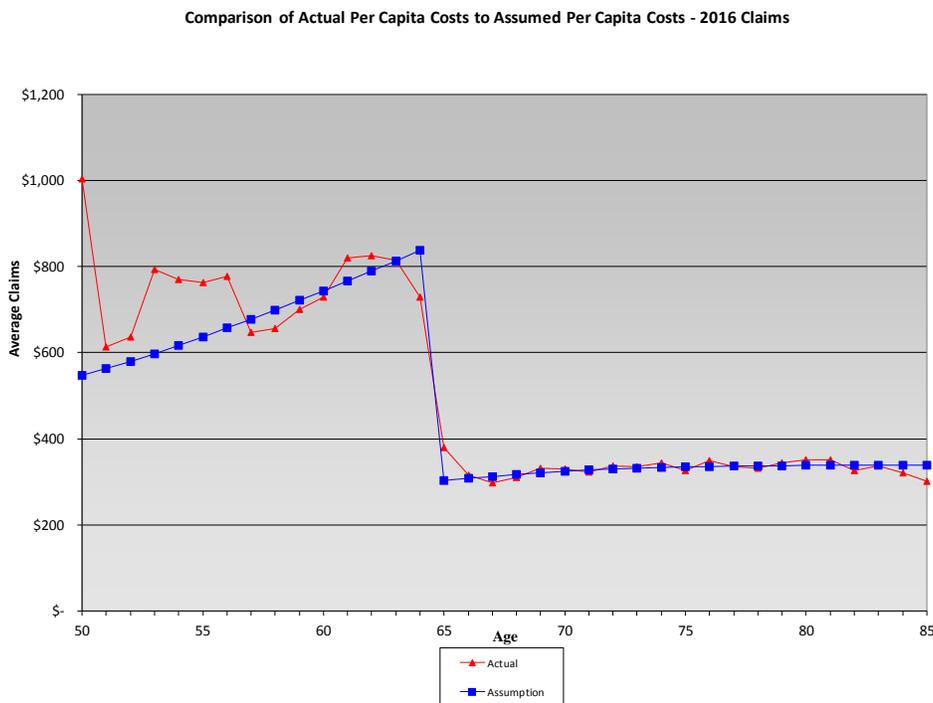


These two graphs show a need to model the increasing claim costs by age in the valuation, especially for ages below 65. This is consistent with other health care experience. This assumption is referred to as the aging factor table.

Develop Aging Table

The second step in determining the expected claims for the population was to develop the aging factor table. In preparing the 2009 valuation, we developed an aging table based on the claims history of EIP for calendar years 2005-2009. The average increases at each age were developed and smoothed based on the actual experience. Separate aging factor tables were developed for medical and pharmacy, as well as by sex and health status. The reasonableness of the aging table was revisited for this valuation, and as the graph below shows, the current aging factors continue to model the actual claims data well.

The following graph compares the total claims paid to the expected claims paid. It shows how the assumed claims will approximate the actual claims that were paid, but will take out the variation from age to age and produce smoothed results.



The claim costs developed by the preceding process are appropriate for the unique age and sex distribution currently existing. Over the future years covered by this valuation, the age and sex distribution will most likely change. Therefore, the actuarial process “distributes” the average premium over all age/sex combinations and assigns a unique premium for each combination. This process more accurately reflects health care costs in the retired population over the projection period.

### Adjust from Paid to Incurred

The next step is to make a slight adjustment to convert from paid to incurred. The incurred but not paid as a percentage of claims was 13% for medical, 3% for pharmacy, and 10% for Dental. The expected per capita costs need to be adjusted to recognize the trend increase in the incurred but not paid at the end of the year in comparison to the claims paid in the first part of the year that were incurred in the last part of the year before.

Using the percentages above, the per capita costs were loaded by 1.2% for medical, 0.6% for pharmacy, and 0.6% for Dental.

### EGWP-Wrap Rx Participation and Savings:

Effective January 1, 2014, Medicare eligible members have the option to participate in an Employer Group Waiver Plan (EGWP) with a “Wrap” feature. The EGWP design is based on a federally approved drug formulary and plan design. A sponsor may provide additional benefits through a supplementary “Wrap” plan that ensures members will receive benefits that are relatively equal to those of the traditional plan that the sponsor currently offers. In most instances, the current plan benefit design can be replicated through the combination of an EGWP-Wrap plan at reduced costs. The key components which are expected to reduce costs include:

1. Fifty percent discount on brand name drugs while member is in the “donut hole” coverage gap. (Under a standard or model Medicare Part D program, a member is responsible for 100 percent of the prescription costs from the initial coverage limit to the catastrophic coverage limit. This coverage gap is also known as the “donut hole.”) The discount is also applied to the member’s true out of pocket costs which allows federal catastrophic coverage to be reached sooner.
2. The “donut hole” coverage gap will diminish and be completely eliminated by 2020.
3. As the coverage gap diminishes, the sponsor’s “Wrap” supplemental benefits within the “donut hole” decreases.
4. Federal prescription drug subsidies must be used to reduce the cost of providing benefits to Medicare eligible members, resulting in lower premium rates. This feature allows the sponsor to reflect certain EGWP-Wrap savings in the GASB Statement No. 74 valuation.

100% of current and future Medicare retirees are assumed to participate in the EGWP – Wrap plan. The EGWP-Wrap reimbursements were expected to reduce the aggregate prescription costs for Medicare eligible members by approximately 40% in 2017. However, it is not clear how brand name discounts and federal subsidies will impact the effective trend rates and overall costs in the future. For GASB Statement No. 74 valuation purposes, we have assumed that the EGWP – Wrap reimbursements will continue in future years.

### Disabled Members

The per capita assumptions for disabled members were developed in the same way as the healthy members, except that no age/sex-rating factors were used. The claims data showed insufficient differences by age/sex for the disabled members.

**SECTION G**

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**SUMMARY OF PARTICIPANT DATA**

# Summary of Participant Data

## A. Members Currently in Retired Status

1. Counts by Retirement Plan and Coverage Type
2. Average By Pan and Coverage Type
3. Expected Payments by Counts and Coverage Type
4. Distribution of Current Retirees by Health Plan, Coverage Type, and Subscriber Type

The members in the schedules referenced above include only those retirees who have elected to receive health care coverage through the State of Carolina health care plan.

## B. Members Currently in Active Status

1. Age and Service Distribution for State Employees
2. Age and Service Distribution for School District Employees
3. Counts by Retirement Plan

## Members Currently in Retired Status - Counts by Retirement Plan and Coverage Type

	Medical/Rx		Dental		Combined		Eligible for State Funded Premium	
	Male	Female	Male	Female	Male	Female	Male	Female
<b>General State Employees</b>								
<b>1 Person Cvg</b>	7,315	15,697	8,379	17,570	8,557	18,026	8,047	15,813
<b>2 Person Cvg</b>	4,566	4,666	4,698	4,687	4,803	4,745	4,758	4,720
<b>School Districts</b>								
<b>1 Person Cvg</b>	5,387	25,116	6,099	27,767	6,278	28,133	5,554	27,087
<b>2 Person Cvg</b>	2,201	10,804	2,258	10,790	2,307	10,919	2,286	10,892
<b>Police Officers</b>								
<b>1 Person Cvg</b>	1,552	820	1,997	921	2,035	931	1,947	889
<b>2 Person Cvg</b>	1,042	142	1,081	142	1,105	145	1,098	145
<b>National Guard</b>								
<b>1 Person Cvg</b>	-	-	13	-	13	-	2	-
<b>2 Person Cvg</b>	1	-	1	-	1	-	-	-
<b>Judges</b>								
<b>1 Person Cvg</b>	28	5	34	5	34	5	34	5
<b>2 Person Cvg</b>	52	5	52	5	53	5	53	5
<b>General Assembly</b>								
<b>1 Person Cvg</b>	36	9	42	9	42	9	38	9
<b>2 Person Cvg</b>	52	3	50	3	52	3	51	2
<b>Total</b>								
<b>1 Person Cvg</b>	14,318	41,647	16,564	46,272	16,959	47,104	15,622	43,803
<b>2 Person Cvg</b>	7,914	15,620	8,140	15,627	8,321	15,817	8,246	15,764
	22,232	57,267	24,704	61,899	25,280	62,921	23,868	59,567
<b>Male &amp; Female</b>		79,499		86,603		88,201		83,435

## Members Currently in Retired Status - Average Age by Plan and Coverage Type

	Medical		Dental		Combined		Eligible for State Funded Premium	
	Male	Female	Male	Female	Male	Female	Male	Female
<b>General State Employees</b>								
<b>1 Person Cvg</b>	70.4	71.2	70.8	71.4	70.7	71.5	70.8	70.8
<b>2 Person Cvg</b>	71.6	67.9	72.1	68.1	72.1	68.1	72.1	68.1
<b>School Districts</b>								
<b>1 Person Cvg</b>	71.0	72.3	71.0	71.9	71.0	71.9	70.7	71.8
<b>2 Person Cvg</b>	71.2	68.4	71.2	68.2	71.2	68.2	71.2	68.2
<b>Police Officers</b>								
<b>1 Person Cvg</b>	63.5	64.1	65.0	64.2	65.0	64.2	65.0	64.3
<b>2 Person Cvg</b>	65.0	64.2	65.8	64.3	65.8	64.3	65.8	64.3
<b>National Guard</b>								
<b>1 Person Cvg</b>	-	-	74.2	-	74.2	-	68.0	-
<b>2 Person Cvg</b>	-	-	60.1	-	60.1	-	-	-
<b>Judges</b>								
<b>1 Person Cvg</b>	72.9	64.1	72.5	64.1	72.5	64.1	72.5	64.1
<b>2 Person Cvg</b>	73.5	64.3	73.9	64.3	73.6	64.3	73.6	64.3
<b>General Assembly</b>								
<b>1 Person Cvg</b>	75.6	72.6	75.6	72.6	75.6	72.6	75.7	72.6
<b>2 Person Cvg</b>	75.3	75.8	75.4	75.8	75.3	75.8	75.3	74.0
<b>Total</b>								
<b>1 Person Cvg</b>	69.9	71.7	70.2	71.6	70.1	71.6	70.1	71.3
<b>2 Person Cvg</b>	70.7	68.2	71.0	68.1	71.0	68.1	71.0	68.1
	70.2	70.8	70.5	70.7	70.4	70.7	70.4	70.5
<b>Male &amp; Female</b>		70.6		70.6		70.6		70.4

**Members Currently in Retired Status -  
Expected Payments by Counts and Coverage Type (\$ in thousands)**

	Claims						Retiree Premiums Collected		State Funded Premium	
	Medical		Rx		Dental		Male	Female	Male	Female
	Male	Female	Male	Female	Male	Female				
<b>General State Employees</b>										
<b>1 Person Cvg</b>	21,593	44,165	19,760	42,002	1,650	3,458	9,958	24,615	32,540	66,522
<b>2 Person Cvg</b>	25,805	28,168	23,304	24,335	1,852	1,846	14,771	14,907	40,503	41,538
<b>School Districts</b>										
<b>1 Person Cvg</b>	15,645	67,152	14,435	65,656	1,201	5,469	8,332	32,297	22,924	113,446
<b>2 Person Cvg</b>	13,079	63,064	11,418	55,840	890	4,252	7,076	34,379	19,575	96,339
<b>Police Officers</b>										
<b>1 Person Cvg</b>	6,244	3,218	4,893	2,661	393	181	1,975	1,051	7,086	3,707
<b>2 Person Cvg</b>	7,870	1,047	5,945	788	426	56	3,347	452	9,285	1,268
<b>National Guard</b>										
<b>1 Person Cvg</b>	-	-	-	-	3	-	2	-	0	-
<b>2 Person Cvg</b>	11	-	6	-	0	-	12	-	-	-
<b>Judges</b>										
<b>1 Person Cvg</b>	70	22	68	14	7	1	33	6	130	23
<b>2 Person Cvg</b>	243	42	250	28	20	2	165	16	464	45
<b>General Assembly</b>										
<b>1 Person Cvg</b>	82	15	87	20	8	2	61	11	148	41
<b>2 Person Cvg</b>	250	20	252	16	20	1	173	18	455	18
<b>Total</b>										
<b>1 Person Cvg</b>	43,634	114,573	39,243	110,353	3,262	9,110	20,362	57,981	62,828	183,739
<b>2 Person Cvg</b>	47,259	92,340	41,174	81,006	3,208	6,158	25,544	49,772	70,282	139,208
	90,893	206,913	80,417	191,359	6,470	15,268	45,906	107,752	133,110	322,947
<b>Male &amp; Female</b>		297,806		271,777		21,738		153,658		456,058

## Distribution of Current Retirees by Health Plan, Coverage Type, and Subscriber Type

HEALTH PLAN	Under 65	At Least 65	Total
Standard Plan	15,215	3,251	18,466
Medicare Supplement	6,997	53,761	60,758
Savings Plan	213	-	213
Other	62	-	62
Dental Only	1,220	7,482	8,702
<b>Total</b>	<b>23,707</b>	<b>64,494</b>	<b>88,201</b>

COVERAGE TYPE	Under 65	At Least 65	Total
Single	14,762	47,008	61,770
Sub/Spouse	5,831	16,545	22,376
Sub/Child(ren)	1,657	520	2,177
Full Family	1,346	416	1,762
Child(ren) Only	111	5	116
<b>Total</b>	<b>23,707</b>	<b>64,494</b>	<b>88,201</b>

SUBSCRIBER TYPE	Under 65	At Least 65	Total
< 10 Years Service	382	944	1,326
At Least 25 and 55	47	-	47
Full Funded Retiree	22,747	60,629	83,376
Survivors of Active Death	12	-	12
Survivors of Funded Retirees	517	2,919	3,436
Other	2	2	4
<b>Total</b>	<b>23,707</b>	<b>64,494</b>	<b>88,201</b>

## Distribution of Active Members By Age and Service State Employees

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
<b>Under 25</b>	1,564	636	204	79	23	7	0	0	0	0	0	0	2,513
<b>25-29</b>	2,304	1,831	1,430	856	571	593	9	1	0	0	0	0	7,595
<b>30-34</b>	1,558	1,381	1,196	980	856	2,428	626	3	0	0	0	0	9,028
<b>35-39</b>	1,134	971	863	726	631	2,468	1,970	431	6	0	0	0	9,200
<b>40-44</b>	861	757	638	527	479	2,072	1,800	1,529	357	14	0	1	9,035
<b>45-49</b>	775	730	585	477	457	1,841	1,803	1,698	1,486	561	12	3	10,428
<b>50-54</b>	672	603	515	416	392	1,529	1,573	1,582	1,245	1,786	254	17	10,584
<b>55-59</b>	531	431	433	381	318	1,432	1,456	1,507	1,160	1,924	629	106	10,308
<b>60-64</b>	248	251	238	272	231	1,100	1,120	1,166	959	1,377	464	230	7,656
<b>65 &amp; Over</b>	139	130	119	104	117	616	705	669	446	598	270	222	4,135
<b>Total</b>	9,786	7,721	6,221	4,818	4,075	14,086	11,062	8,586	5,659	6,260	1,629	579	80,482

## Distribution of Active Members By Age and Service School District Employees

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
<b>Under 25</b>	1,041	964	322	33	16	12	0	0	0	0	0	0	2,388
<b>25-29</b>	1,116	1,727	1,795	1,636	1,246	1,613	12	0	0	0	0	0	9,145
<b>30-34</b>	877	1,014	864	845	833	4,348	1,557	3	0	0	0	0	10,341
<b>35-39</b>	818	908	831	729	643	2,559	4,108	1,089	8	0	0	0	11,693
<b>40-44</b>	750	871	762	711	581	2,315	2,463	3,551	969	5	0	0	12,978
<b>45-49</b>	790	873	769	670	649	2,446	2,537	2,494	3,099	762	1	0	15,090
<b>50-54</b>	630	700	581	543	455	2,040	2,312	2,043	1,648	2,422	260	7	13,641
<b>55-59</b>	607	571	477	440	399	1,630	1,951	2,076	1,585	2,593	684	66	13,079
<b>60-64</b>	332	371	334	287	288	1,254	1,300	1,408	1,238	1,850	418	135	9,215
<b>65 &amp; Over</b>	217	264	162	137	153	885	808	552	447	745	321	107	4,798
<b>Total</b>	7,178	8,263	6,897	6,031	5,263	19,102	17,048	13,216	8,994	8,377	1,684	315	102,368

## Distribution of Active Members By Retirement Plan

	State Employees	School District Employees	Grand Total
1. SCRS Active Members - Count	52,029	86,215	138,244
2. SCRS TERI Members - Count	3,247	3,363	6,610
3. ORP Members - Count	15,135	10,304	25,439
4. Return to Work Members	802	2,486	3,288
5. PORS Members - Count	9,050		9,050
6. GARS Members - Count	89		89
7. JSRS Members - Count	130		130
8. Total	80,482	102,368	182,850

## **SECTION H**

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### **VALUATION METHODS AND ACTUARIAL ASSUMPTIONS**

## Summary of Actuarial Assumptions and Methods

The actuarial assumptions used in the valuation are shown in this Section. Assumptions that are specific to certain groups (i.e. State Employees, School District Employees, PORS, GARS, and JSRS) are discussed under the first subsection that follows. Assumptions that are common to all types of members and unique to this valuation are then shown on the following pages.

### Demographic and Certain Economic Assumptions

This Actuarial Valuation of the State's OPEBs is similar to the Actuarial Valuations performed for the State's Retirement Systems, except that the OPEB Valuation is more complex. With the exception of the retirement rates, all of the demographic assumptions and most of the economic assumptions used in this OPEB Valuation were identical to those used in the July 1, 2017 retirement system valuations. The retirement rates used in the OPEB Valuation do not include the 50% rate used in the pension valuations at first eligibility for concurrent benefit commencement and continued employment. Because members who return to work often remain on the active health plan, the 50% retirement rate was not used in the OPEB valuation.

The long-term inflation assumption utilized in the OPEB valuation is the same as the 2.25% inflation assumption used by the retirement systems.

The assumptions are described in detail in the July 1, 2017 retirement system valuations performed by Gabriel, Roeder, Smith and Company.

## Healthcare and Other Economic Assumptions

**The Investment Return Assumption** for the retiree healthcare trust is 4.00% per year, net of investment expenses.

**The Discount Rate Assumption** was 3.62% as of the reporting date.

### Health Cost and Premium Increases:

Year	Medical Trend Rates			Premium Trend Rates	
	Medical	Rx	Dental	Non-Funded	State-Funded
<b>2018</b>	6.75%	6.75%	2.50%	6.75%	3.21%
<b>2019</b>	6.50%	6.50%	2.50%	6.50%	6.50%
<b>2020</b>	6.25%	6.25%	2.50%	6.25%	6.25%
<b>2021</b>	6.00%	6.00%	2.50%	6.00%	6.00%
<b>2022</b>	6.00%	6.00%	2.50%	6.00%	6.00%
<b>2023</b>	5.80%	5.80%	2.50%	5.80%	5.80%
<b>2024</b>	5.60%	5.60%	2.50%	5.60%	5.60%
<b>2025</b>	5.40%	5.40%	2.50%	5.40%	5.40%
<b>2026</b>	5.20%	5.20%	2.50%	5.20%	5.20%
<b>2027</b>	5.00%	5.00%	2.50%	5.00%	5.00%
<b>2028</b>	4.80%	4.80%	2.50%	4.80%	4.80%
<b>2029</b>	4.60%	4.60%	2.50%	4.60%	4.60%
<b>2030</b>	4.40%	4.40%	2.50%	4.40%	4.40%
<b>2031</b>	4.20%	4.20%	2.50%	4.20%	4.20%
<b>2032 &amp; Beyond</b>	4.15%	4.15%	2.50%	4.15%	4.15%

*Medical and Premium Trend is assumed to occur 1/1 of each year beginning 1/1/2018.*

*The non-funded premiums are assumed to increase at the weighted average increase of claims over the long term.*

**Election percentage:** For retirees who are eligible for the Funded Premium, it was assumed that 53% would elect one-person coverage, if eligible, while 26% were assumed to elect two-person coverage. The election rates described above are reduced by 25% for members who are eligible for the Partial Funded Premium and reduced by 75% for members who are eligible for the Non-Funded Premium. For those that elect two-person coverage, it was assumed that 5% of spouses would continue coverage upon death of the retiree, if eligible. 30% of inactive deferred participants were assumed to elect health coverage at their earliest eligible age. It was further assumed that participants who are responsible for the entire Non-Funded Premium would lapse coverage when they become eligible for Medicare.

**Aging Factors:** In any given year, the cost of medical and pharmacy benefits vary by age. As the ages of employees and retirees in the covered population increase so does the cost of benefits. Morbidity tables are employed to develop Per Capita Costs at every relevant age. The following table represents the percent by which the cost of benefits for non-disabled lives at one age is higher than the cost for the previous age. For example, according to the following table, the cost of benefits for a male age 55 is 3.12% higher than for one age 54. As discussed previously, disabled lives exhibited minimal variation by age and sex. These percentages below are separate from the annual Medical Trend, which operates to increase costs independent of and in addition to the Aging Factors shown below. These factors were developed based on actual experience data gathered from EIP.

Sample Ages	Cost Increase by Age			
	Medical		Rx	
	Male	Female	Male	Female
45	5.83%	2.20%	0.00%	0.00%
50	6.22%	3.16%	0.00%	0.00%
55	3.12%	2.58%	5.07%	3.16%
60	4.60%	2.74%	3.05%	2.15%
65	1.97%	1.09%	1.73%	1.40%
70	1.22%	0.85%	0.72%	0.79%
75	0.57%	0.64%	0.00%	0.26%
80	0.00%	0.45%	0.00%	0.00%
85	0.00%	0.28%	0.00%	0.00%
90	0.00%	0.11%	0.00%	0.00%

## Actuarial Methods

*The individual entry age actuarial cost method of valuation* was used in determining liabilities and normal cost.

## Miscellaneous and Technical Assumptions

Marriage Assumption:	79% of males and females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses. For PORS, male are assumed to be 4 years older than female spouses.
Pay Increase Timing:	Beginning of (fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	Decrements of all types are assumed to occur mid-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 Operation:	Disability and mortality decrements are added to the termination decrements during the first 5 years. Disability is added to the retirement decrement during retirement eligibility.
Rx Rebates/Subsidies	The age-rated claims shown in Section F are net of pharmaceutical manufacturer rebates and EGWP reimbursements.
Administrative Expenses:	Expenses were assumed to be 4.75% of expected claims. The administrative expenses associated with processing claims are included in the age-adjusted claims.
Excise Tax and Health Care Reform	<p>The ultimate trend rate assumption includes a 0.15% adjustment to reflect the additional liabilities associated with the excise tax on high-cost employer health plans effective January 1, 2020. 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 legislated thresholds. The thresholds in 2018 are \$10,200 for single coverage and \$27,500 for family coverage.</p> <p>The administrative expense assumption includes an allowance for additional fees associated with the Affordable Care Act (ACA).</p>

## Assumption/Method Changes

1. The single discount rate changed from 3.56% as of June 30, 2017 to 3.62% as of June 30, 2018. This change lowered the total OPEB liability by \$136 million.
2. There was a minor change to the tables used to develop the age-adjusted retiree claims. The “central age” when male and female retiree claims are assumed to be the same was adjusted. This change increased the total OPEB liability by \$39 million.

## **SECTION I**

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### **GLOSSARY OF TERMS**

# Glossary of Terms

<b>Accrued Service</b>	Service credited under the system that was rendered before the date of the actuarial valuation.
<b>Actuarial Accrued Liability (AAL)</b>	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."
<b>Actuarial Assumptions</b>	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.
<b>Actuarial Cost Method</b>	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.
<b>Actuarial Equivalent</b>	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.
<b>Actuarial Gain (Loss)</b>	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.
<b>Actuarial Present Value (APV)</b>	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.
<b>Actuarial Valuation</b>	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.
<b>Actuarial Valuation Date</b>	The date as of which an actuarial valuation is performed.

# Glossary of Terms

<b>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</b>	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.
<b>Amortization Method</b>	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).
<b>Amortization Payment</b>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<b>Cost-of-Living Adjustments</b>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<b>Cost-Sharing Multiple-Employer Defined Benefit OPEB Plan (cost-sharing OPEB plan)</b>	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.
<b>Covered-Employee Payroll</b>	The payroll of employees that are provided with benefits through the OPEB plan.
<b>Deferred Inflows and Outflows</b>	The deferred inflows and outflows of OPEB resources are amounts used under GASB Statement No. 74 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.
<b>Discount Rate</b>	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: <ol style="list-style-type: none"><li>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</li><li>2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.</li></ol>

# 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

<b>Normal Cost</b>	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.
<b>Other Postemployment Benefits (OPEB)</b>	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.
<b>Real Rate of Return</b>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<b>Service Cost</b>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<b>Total OPEB Expense</b>	The total OPEB expense is the sum of the following items that are recognized at the end of the employer's fiscal year: <ol style="list-style-type: none"><li>1. Service Cost</li><li>2. Interest on the Total OPEB Liability</li><li>3. Current-Period Benefit Changes</li><li>4. Employee Contributions (made negative for addition here)</li><li>5. Projected Earnings on Plan Investments (made negative for addition here)</li><li>6. OPEB Plan Administrative Expense</li><li>7. Other Changes in Plan Fiduciary Net Position</li><li>8. Recognition of Outflow (Inflow) of Resources due to Liabilities</li><li>9. Recognition of Outflow (Inflow) of Resources due to Assets</li></ol>
<b>Total OPEB Liability (TOL)</b>	The TOL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<b>Unfunded Actuarial Accrued Liability (UAAL)</b>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<b>Valuation Assets</b>	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.