Rhode Island State Employees' and Electing Teachers OPEB

Actuarial Valuation Report

June 30, 2019

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June 3, 2020

Mr. Thomas Mullaney
State Budget Officer
Department of Administration Building
One Capitol Hill
Providence, Rhode Island 02908

Re: Rhode Island State Employees' and Electing Teachers OPEB Actuarial Valuation as of June 30, 2019

Dear Mr. Mullaney:

The results of the June 30, 2019 Annual Actuarial Valuation of the Rhode Island State Employees' and Electing Teachers OPEB are presented in this report.

This report was prepared at the request of the Board and is intended for use by the Board and those designated or approved by the Board. This report may be provided to parties other than the Board only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The purposes of the valuation are to measure the System's funding progress and to determine the employer contribution rate for the fiscal year ending June 30, 2022. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different. This report does not satisfy GASB Statements No. 74 and No. 75. Please see the report dated January 17, 2020 for information related to GASB Statement No. 74 reporting. A separate report that incorporates GASB Statement No. 75 will be issued at a later date.

The computed contribution rates and amounts in this report are determined using the actuarial assumptions and methods disclosed in Section E of this report. This report includes risk metrics on pages A-8 and A-9 but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The computed contribution rates and amounts shown on page 3 may be considered as minimum contributions that comply with State statute. Users of this report should be aware that contributions made at these rates do not guarantee benefit security. Given the importance of benefit security to any OPEB system, we suggest that contributions to the OPEB System in excess of those presented in this report be considered.

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The findings in this report are based on data and other information through June 30, 2019. The valuation was based upon information furnished by the State of Rhode Island concerning OPEB benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the State.

This report was prepared using assumptions adopted by the Board. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. Additional information about the actuarial assumptions is included in the section of this report entitled Actuarial Cost Method and Actuarial Assumptions.

This report has 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 presents the actuarial position of the Rhode Island State Employees' and Electing Teachers OPEB as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Jeffrey T. Tebeau, Abra D. Hill and Kevin T. Noelke are Members of the American Academy of Actuaries (MAAA). These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Gabriel, Roeder, Smith & Company will be pleased to review this valuation and report with the Board of Trustees and to answer any questions pertaining to the valuation.

Respectfully submitted,

Jeffrey T. Tebeau, FSA, EA, MAAA

Abra D. Hill, ASA, FCA, MAAA

Kevin T. Noelke, ASA, MAAA

JTT/ADH:bd

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EXECUTIVE SUMMARY

Executive Summary

Introduction

This is the June 30, 2019 actuarial valuation of the Rhode Island State Employees' and Electing Teachers OPEB which covers State Employees, State Police, Judges, Legislators, Teachers and the Board of Education. This report describes the current actuarial condition of the plan, determines the recommended employer contribution rates, and analyzes the changes in principal values.

The contribution rates are determined actuarially based on the plan provisions in effect as of the valuation date, the actuarial assumptions adopted by the OPEB Board, and the methodology set forth in the statutes. The OPEB Board's current policy is that the contribution rates determined by a given actuarial valuation become effective two years after the valuation date. For example, the rates determined by this June 30, 2019 valuation will be applicable for the year July 1, 2021 through June 30, 2022.

This valuation incorporates census data, healthcare premium rates, claims, and asset information as of June 30, 2019.

Plan Experience

Overall plan experience for the Plan was favorable resulting in an actuarial gain. Results varied among the groups, with gains for all groups except for the Board of Education.

Investment experience was favorable in fiscal year 2019, resulting in a decrease in unfunded liabilities relative to expectations.

Demographic experience, which includes experience related to member activities (e.g., retirement, mortality, coverage election, etc.) was also favorable overall for the Plan, with only the Board of Education showing a small loss.

Health care experience for the pre-65 plans was favorable overall, resulting in modest gains primarily for State Employees and State Police. Post-65 experience on the Medicare Advantage HMO and Plan 65 was unfavorable. However, this experience only affects the Board of Education. The HRA amount for State retirees increased less than expected, resulting in a large gain for the State Employees.

The health case trend assumption is reviewed each valuation as part of premium rate development process. Based on recent experience and national trends, the trend assumption has been reset to 8.25% in 2020 grading down to 3.50% by 2032. Based on the trend assumption used for the June 30, 2018 valuation, the first-year trend for this valuation would have been 7.75%. Therefore, the resetting of the trend increased liabilities slightly.

Additional information on gains and losses can be found on page A-4.

Executive Summary

Financing Objectives

The actuarial cost method and the maximum amortization periods are set by statute. Contribution rates and liabilities are computed using the Entry Age Normal actuarial cost method. The employer contribution rate is the sum of two pieces: the normal cost rate and the amortization rate. The normal cost rate is determined as a percent of pay. The amortization rate is determined as a level percent of pay for Judges, Legislators, State Employees, State Police and the Board of Education, and as a level dollar for Teachers. It is the amount required to amortize the Unfunded Actuarial Accrued Liability over a closed period (30 years as of June 30, 2006, 17 years remaining as of June 30, 2019). Separate employer contribution rates are determined for State Employees, State Police, Judges, Legislators, Teachers and the Board of Education. The amortization period for Teachers is based on the statutory contribution, subject to statutory restriction. Due to the current funding status of the Judges and Legislators plans, the amortization period is set to 30-year open.

A summary of principal valuation results is shown on the following page.

Executive Summary

(All Dollars in Thousands)

	Judges	Legislature	State Employees	Teachers	State Police	Board of Education
Valuation Date	June 30, 2019	June 30, 2019	June 30, 2019	June 30, 2019	June 30, 2019	June 30, 2019
ADEC for Fiscal Year Ending	June 30, 2022	June 30, 2022	June 30, 2022	June 30, 2022	June 30, 2022	June 30, 2022
Actuarially Determined Employer Contributions (ADEC)						
Annual Amount (Total for all groups)	$ -	$ -	$ 43,393	$ -	$ 6,088	$ 4,994
Percentage of Projected Covered Payroll	0.00%	0.00%	5.33%	N/A	23.27%	3.50%
Employer Contribution*	**0.00%**	**0.00%**	**5.28%**	**-**	**23.27%**	**3.50%**
Membership (as of June 30, 2019)						
Number of						
Active Members	61	113	11,184	-	261	1,869
Retirees and Beneficiaries	33	15	6,698	99	163	857
Inactive, Nonretired Members	-	-	-	-	-	-
Total	94	128	17,882	99	424	2,726
Covered Payroll	$ 11,297	$ 1,814	$ 745,039	N/A	$ 23,943	$ 130,569
Assets						
Actuarial Value	$ 4,210	$ 3,092	$ 208,666	$ 13,106	$ 53,508	$ 37,478
Actuarial Information						
Employer Normal Cost	0.11%	2.05%	2.09%	N/A	16.85%	1.43%
Actuarial Accrued Liability (AAL)	$ 337	$ 1,194	$ 610,529	$ 10,328	$ 79,885	$ 78,879
Unfunded Actuarial Accrued Liability (UAAL)	(3,873)	(1,898)	401,863	(2,778)	26,377	41,401
Funded Ratio	1,249%	259%	34%	127%	67%	48%
UAAL as % of Covered Payroll	(34.3)%	(104.6)%	53.9%	N/A	110.2%	31.7%
Equivalent Single Amortization Period	30 years	30 years	17 years	N/A	17 years	17 years

* *For the 2022 fiscal year, the employer contribution for State Employees is the ADEC net of a credit for the health windows contributions.*

Executive Summary

Contribution Rates

The total Actuarially Determined Employer Contribution (ADEC) for the fiscal year beginning July 1, 2021 was determined to be $54,474,575. The contribution rates as a percent of payroll changed from 5.55% in the prior fiscal year to 5.33% for State Employees, 23.31% to 23.27% for State Police, remained at 0.00% for Judges, remained at 0.00% for Legislators, and 2.93% to 3.50% for the Board of Education. Contributions as a dollar amount are $0 for Teachers.

For additional details, please see Sections A and D of the report.

Benefit Provisions

There were no reported material changes in benefit provisions since the prior valuation. A description of the Plan provisions used in this valuation is in Section D of this report.

The Excise Tax load on pre-65 liabilities was removed as result of the "Further Consolidated Appropriations Act of 2020" (H.R. 1865), which repealed the tax.

On May 28, 2020, the OPEB Board approved updated valuation results as of June 30, 2018, which reflected the repeal of the Excise Tax. Removing the liabilities associated with the Excise Tax reduced the actuarial liabilities of the plan and the ADEC for fiscal year 2021 (for those group with a non-zero contribution). For additional details, please see the supplemental valuation report dated March 27, 2020.

Actuarial Assumptions

Changes in actuarial assumptions include the updated healthcare trend assumption. The effect of this change is included in the "premium rate setting" line item throughout this report.

Actuarial Methods

There were no changes in actuarial methods.

Data

The State supplied data for retired and active members as of June 30, 2019. We did not audit this data, but we did apply a number of validation tests to the data.

SECTION A

VALUATION RESULTS

Valuation Results
Development of the Actuarially Determined Employer Contributions as of July 1, 2021

Contributions for	Development of the Actuarially Determined Employer Contributions for the July 1, 2021 - June 30, 2022 Fiscal Year					
	Judges	**Legislature**	**State Employees**	**Teachers**	**State Police**	**Board of Education**
Total Normal Cost	$ 13,578	$ 40,637	$ 17,015,203	$ 0	$ 4,408,433	$ 3,324,346
Active Member Contribution	0	0	0	0	0	1,284,082
Employer Normal Cost	$ 13,578	$ 40,637	$ 17,015,203	$ 0	$ 4,408,433	$ 2,040,264
Percentage of Projected Payroll	*0.11%*	*2.05%*	*2.09%*	*N/A*	*16.85%*	*1.43%*
Amortization of Unfunded Actuarial Accrued Liabilities	(13,578)	(40,637)	26,377,635	0	1,679,652	2,953,388
Percentage of Projected Payroll	*(0.11)%*	*(2.05)%*	*3.24%*	*N/A*	*6.42%*	*2.07%*
Amortization Period	30 Years Level Percent	30 Years Level Percent	17 Years Level Percent	N/A Level Dollar	17 Years Level Percent	17 Years Level Percent
Actuarially Determined Employer Contribution (ADEC)	**$ 0**	**$ 0**	**$ 43,392,838**	**$ 0**	**$ 6,088,085**	**$ 4,993,652**
Percentage of Projected Payroll	***0.00%***	***0.00%***	***5.33%***	***N/A***	***23.27%***	***3.50%***
Total Projected Health Windows Revenue			416,815			
Percentage of Projected Payroll			*0.05%*			
Net Employer Contribution*			42,976,023			
Percentage of Projected Payroll			*5.28%*			
Projected Payroll for the Fiscal Year Beginning July 1, 2021	$12,344,303	$1,982,260	$814,124,547	N/A	$26,162,805	$142,675,741

* *For the 2022 fiscal year, the employer contribution for State Employees is the ADEC net of a credit for the health windows contributions.*

Contribution notes apply to the fiscal years ending June 30, 2022. The assumptions used to calculate the results shown above include a 5.00% investment return rate.

The Unfunded Actuarial Accrued Liabilities were amortized as a level percent of active member payroll for State Employees, State Police, and the Board of Education, and as a level dollar amount for Judges, Legislature and Teachers over the periods shown. For the fiscal year ending June 30, 2022, the amortization factors used are 22.4628 for the 30-year level percent of pay amortization (Judges and Legislators) and 14.2892 for the 17-year level percent of pay amortization (State Employees, State Police, and Board of Education).

Valuation Results
Determination of Unfunded Actuarial Accrued Liability
as of June 30, 2019

	Judges	Legislature	State Employees	Teachers	State Police	Board of Education
A. Present Value of Future Benefits						
1. Retirees and Beneficiaries	$ 256,885	$ 907,157	$286,948,533	$10,327,734	$ 41,476,991	$ 33,666,430
2. Vested Terminated Members	0	0	0	0	0	0
3. Active Members	135,206	579,908	490,916,464	0	88,725,869	75,325,708
Total Present Value of Future Benefits	$ 392,091	$ 1,487,065	$777,864,997	$10,327,734	$130,202,860	$108,992,138
B. Present Value of Future Total Normal Costs	55,531	293,453	167,335,942	0	50,318,301	30,113,119
C. Actuarial Accrued Liability (A.-B.)	$ 336,560	$ 1,193,612	$ 610,529,055	$ 10,327,734	$ 79,884,559	$ 78,879,019
D. Actuarial Value of Assets	4,210,225	3,091,937	208,665,967	13,105,625	53,508,263	37,477,951
E. Unfunded Actuarial Accrued Liability (C.-D.)	$ (3,873,665)	$ (1,898,325)	$401,863,088	(2,777,891)	$ 26,376,296	$ 41,401,068
F. Funded Ratio (D./C.)	1,251%	259%	34%	127%	67%	48%

The Funded Ratios on the basis of the market value of assets are 1,322%, 274%, 36%, 134%, 71% and 50% for the groups in the order shown above.

Development of Actuarial Value of Assets

Year Ended June 30:	2017	2018	2019	2020	2021	2022
A. Actuarial Value Beginning of Year						
A1. Preliminary Actuarial Value Beginning of Year	$ 177,156,873	$ 219,187,070	$ 265,312,934			
A2. Adjustment	-	-	244,989			
A3. Final Actuarial Value Beginning of Year	177,156,873	219,187,070	265,557,923			
B. Market Value End of Year	228,418,053	278,170,257	338,244,433			
C. Market Value Beginning of Year						
C1. Preliminary Market Value Beginning of Year	180,126,735	228,418,053	278,170,257			
C2. Adjustment	-	-	244,989			
C3. Final Market Value Beginning of Year	180,126,735	228,418,053	278,415,246			
D. Non-Investment Net Cash Flow	26,822,223	28,993,547	31,546,550			
E. Investment Income						
E1. Market Total: B - C3 - D	21,469,095	20,758,657	28,282,637			
E2. Amount for Immediate Recognition (5%)	9,528,399	11,684,192	14,066,560			
E3. Amount for Phased-In Recognition: E1-E2	11,940,696	9,074,465	14,216,077			
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.25 x E3	2,985,174	2,268,616	3,554,019			
F2. First Prior Year	81,125	2,985,174	2,268,616	$ 3,554,019		
F3. Second Prior Year	113,209	81,125	2,985,174	2,268,616	$ 3,554,019	
F4. Fourth Prior Year	2,500,067	113,210	81,126	2,985,174	2,268,617	$3,554,020
F5. Total Recognized Investment Gain	5,679,575	5,448,125	8,888,935	8,807,809	5,822,636	3,554,020
G. Preliminary Actuarial Value End of Year: A3 + D + E2 + F5	219,187,070	265,312,934	320,059,968			
H. 80% of Market Value End of Year: 80% x B	182,734,442	222,536,206	270,595,546			
I. 120% of Market Value End of Year: 120% x B	274,101,664	333,804,308	405,893,320			
J. Additional Recognized G/L due to Corridor	-	-	-			
K. Final Actuarial Value after 20% Corridor	219,187,070	265,312,934	320,059,968			
L. Difference between Market & Actuarial Value: B-K	9,230,983	12,857,323	18,184,465			
M. Recognized Rate of Return	7.98%	7.33%	8.17%			
N. Market Rate of Return	11.09%	8.55%	9.61%			
O. Ratio of Actuarial Value to Market Value: K / B	96%	95%	95%			

The Funding Value of Assets recognizes assumed investment income (line E2) fully each year. Differences between actual and assumed investment income (line E3) are phased-in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than Market Value. The Funding Value of Assets is unbiased with respect to Market Value. At any time, it may be either greater or less than Market Value. If assumed rates are exactly realized for four consecutive years, it will become equal to Market Value.

Valuation Results
Gain/Loss Analysis
as of June 30, 2019

	Judges	Legislature	State Employees	Teachers	State Police	Board of Education
(1) UAAL* at prior valuation date	$ (2,687,005)	$ (1,702,094)	$ 439,177,598	$ 368,428	$ 32,208,042	$ 39,554,580
(2) Employer normal cost from last valuation	7,981	34,106	15,642,804	-	3,546,588	1,524,645
(3) Employer contributions	-	14,680	43,857,850	2,277,327	8,256,965	5,599,588
(4) Interest accrual: [(1)+1/2 [(2)-(3)]] x .05	(134,151)	(84,619)	21,253,504	(38,512)	1,492,643	1,875,855
(5) Expected UAAL end of year: (1)+(2)-(3)+(4)	$ (2,813,175)	$ (1,767,287)	$ 432,216,056	$ (1,947,411)	$ 28,990,308	$ 37,355,492
(6) Impact of Plan Changes	-	-	-	-	-	-
(7) Impact of Method/Assumption Changes	-	-	-	-	-	-
(8) Expected UAAL after changes: Sum (5) through (7)	$ (2,813,175)	$ (1,767,287)	$ 432,216,056	$ (1,947,411)	$ 28,990,308	$ 37,355,492
(9) Actual UAAL at end of year	$ (3,873,665)	$ (1,898,325)	$ 401,863,088	$ (2,777,891)	$ 26,376,296	$ 41,401,068
(10) Gain/(loss) as of the valuation date (9)-(8)	1,060,490	131,038	30,352,968	830,480	2,614,012	(4,045,576)
(11) Gain/(loss) as percent of actuarial accrued liabilities at prior valuation date	85.8 %	10.9 %	5.0 %	7.1 %	3.4 %	(5.8)%
Gain/(loss) by Source						
Investment Experience^	$ 116,929	$ 85,871	$ 5,795,221	$ 363,979	$ 1,486,070	$ 1,040,865
Demographic Experience	887,871	193,899	8,292,716	741,090	(490,633)	(1,607,269)
Premium Rate Setting - Pre-65	57,670	(150,961)	1,688,547	(76,549)	1,618,575	(420,181)
Premium Rate Setting - Post-65	(1,980)	2,229	14,576,484	(198,040)	-	(3,058,991)
Total	$ 1,060,490	$ 131,038	$ 30,352,968	$ 830,480	$ 2,614,012	$ (4,045,576)

** Unfunded Actuarial Accrued Liabilities – All groups valued at 5.0% interest.*
^ Based on the Actuarial Value of Assets and allocated to each group based on the market value as of the valuation date.

Comments

Comment A: Legislation 2008-H7204 requires a 30-year amortization period beginning June 30, 2006 with 17 years remaining as of June 30, 2019. In an underfunded plan, shorter amortization periods would result in higher ADECs. The contribution rates shown include amortization of the unfunded actuarial accrued liability over 30 years for Judges and Legislators, 1 year for Teachers and 17 years for the other groups. The Judges and Legislators plans are currently over 100% funded. We recommend amortizing the funding surplus using a 30-year open percent of pay factor and applying the credit as an offset to the normal cost contribution for those groups. The amortization period for Teachers is based on the statutory contribution, provided by the State, and is subject to statutory restriction. The State Employees, Police, and Board of Education remain open plans and are therefore amortized as a level percent of payroll.

For the Teachers, we understand that the State generally allocates a fixed dollar contribution. The Teachers plan has reached full funding as of June 30, 2019. Therefore, we have shown the anticipated fiscal year 2021 contribution as $0 in this report. Contributions received after this date may provide a provision against adverse deviation.

Comment B: A summary of the changes and their impact on the ADEC is shown below. Note that the prior ADEC is based on the June 30, 2018 valuation. All percentages shown are percents of payroll. The rates for State Employees are prior to any adjustment for the Health Windows contribution.

	Judges	Legislature	State Employees	Teachers	State Police	Board of Education
Prior ADEC	0.00%	0.00%	5.55%	$ -	23.31%	2.93%
Impact of plan experience	0.00%	0.00%	(0.05)%	N/A	0.36%	0.13%
Impact of premium rate setting	0.00%	0.00%	(0.17)%	N/A	(0.40)%	0.44%
ADEC determined by this valuation	0.00%	0.00%	5.33%	$ -	23.27%	3.50%

Overall, the plan has had favorable experience since the last valuation. However, experience varied between groups. The plan recognized gains for all groups due to favorable investment experience. The rate of return on the actuarial value of assets was 8.17% for 2019 (market value return was 9.61%) compared to the assumed rate of 5.0%. This resulted in a gain of $8.9M on the unfunded liabilities for the plan in total.

Demographic experience (i.e., experience related to member activities) was favorable overall for the plan. The State Police and Board of Education groups experienced small losses. The Judges and State Employees both had sizeable gains relative to their total experience. It is important to note that the demographic experience accounts for two years' worth of experience because the census data is collected biennially.

The largest driver of premium-related gains was due to experience for the HRA amounts provided to State retirees. HRA amounts increased less than expected (3.4% actual vs. 8.25% assumed). The Pre-65 per capita health care premiums saw increases that were less than expected, resulting in a gain for State Employees and State Police. This was not the case for all groups, as the effect on other groups varied due to differing benefit structures and demographic makeup. The Post-65 per capita health care costs saw increases that were above the assumption, which mainly affected the Board of Education.

Comments

Comment C: On December 20, 2019, the "Further Consolidated Appropriations Act of 2020," H.R. 1865, was signed into law. The Act repeals the "Cadillac tax" which was a tax provision from the Affordable Care Act (ACA). As a result, any liability/provision analysis included as part of the prior funding valuation is no longer required. In addition, no further adjustments associated with the "Cadillac tax" are required. On May 28, 2020, the OPEB Board approved updated valuation results as of June 30, 2018, which reflected the repeal of the "Cadillac tax". Removing the liabilities associated with the "Cadillac tax" reduced the actuarial liabilities of the plan and the ADEC for fiscal year 2021 (for those group with a non-zero contribution).

For purposes of this valuation, the repeal of the "Cadillac tax" was reflected as of June 30, 2018 (the previous actuarial valuation). For additional details, please see the supplemental valuation report dated March 27, 2020.

Comment D: The health care trend assumption is 8.25% the first-year trending down to 3.5% over 13 years. The short-term trend of 8.25% is a reasonable expectation of current health care inflation. The transition from short-term to long-term trend is supported by the Society of Actuaries' Getzen model which results in a macroeconomic estimate that health care expenditures will increase from 20% of Gross Domestic Product (GDP) in 2029 to 25% of GDP in 2050 assuming 4.0% annual GDP growth.

Comment E: Effective September 30, 2008, the Tier II subsidy was eliminated. Subsequent to that date, a separate Early Retiree premium was introduced to reflect the full cost of Pre-65 retiree health care with the retirees and the State sharing in the cost of the full premium. In practice, the Early Retiree premium has not always increased as rapidly as the aggregate health care cost on a per capita basis.

In effect, material differences between the increases in aggregate costs and the illustrative premiums can create an implicit subsidy. It is important to note that if future premiums are not accurately adjusted to reflect experience, the valuation must reflect future expected implicit subsidies which could result in substantially higher employer costs.

Comment F: The State received contributions in the amount of $416,815 in fiscal year 2019 for employees who retired under an early retirement incentive program. The cost of retiree health benefits for these individuals is charged as an annual operating cost to the department or agency from which they were employed immediately prior to retirement. The employer contribution rate for the affected groups is adjusted down from the ADEC on page A-1 to reflect this procedure (referred to as the Health Windows contributions).

Comment G: The last Assumption Review study was performed in August of 2017. It is our understanding that the Employees' Retirement System of Rhode Island (ERSRI) is conducting an experience study in 2020. Many of the assumptions used in this valuation are consistent with the assumptions used in the ERSRI valuation. As such, we recommend reviewing any newly adopted assumptions based on the experience study to determine their appropriateness for the OPEB plan. This could be done independently or in conjunction with an OPEB-specific Assumption Review study similar to the 2017 study.

Comment H: The June 30, 2018 valuation was the first valuation performed in an even year and began the cycle of annual valuations (rather than the previous biennial valuation schedule). However, census data will continue to be collected on a biennial basis (for the odd-year valuations). Therefore, liabilities for the 2020 valuation will be calculated as of the most recent census data date (June 30, 2019) and rolled forward to the valuation date. Premium, claims, and asset information will be updated each valuation.

Other Observations

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected System Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 5.0% on the actuarial value of assets), it is expected that:

(1) The employer normal cost as a percentage of pay will be sufficient to finance benefits accruing each year.
(2) The Unfunded Actuarial Accrued Liabilities (UAAL) will be fully amortized after 17 years (June 30, 2038) for State Employees, State Police, and Board of Education, and less than 1 year (June 30, 2019) for Teachers.
(3) The funded status of the plan will increase gradually towards a 100% funded ratio (Judges and Legislature will remain 100% funded).

The above statements assume that the full Actuarially Determined Employer Contribution (ADEC) is contributed each year.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

(1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, for example: transferring the liability to an unrelated third party in a market value type transaction.
(2) The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy (funding policy), affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. Even if the funded status measurement in this report was 100%, it would not be synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).
(3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

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 due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the System's funded status); 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.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. **Investment risk** – actual investment returns may differ from the expected returns;
2. **Asset/Liability mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. **Contribution risk** – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. **Healthcare-related risk** – actual medical inflation trend rates and/or changes in healthcare plan designs may differ from expected resulting in actual future accrued liability and contributions differing from expected;
5. **Longevity risk** – members may live longer or shorter than expected and receive benefits for a period of time other than assumed; and
6. **Other Demographic risks** – members may elect coverage, terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The computed contributions shown on page A-1 may be considered as a minimum contribution rate that complies with the Board's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

Risk Measures – All Groups Combined

($ in millions)

Actuarial Valuation Date (9/30)	(1) Market Value of Assets (MVA)	(2) Actuarial Value of Assets (AVA)	(3) Actuarial Accrued Liability (AAL)	(4) Unfunded AAL (UAAL) (3) - (2)	(5) Payroll	(6) Funded Ratio (2) / (3)	(7) Market Value Funded Ratio (1) / (3)	(8) Retiree Liabilities (RetLiab)	(9) RetLiab / AAL (8)/(3)	(10) AAL / Payroll (3) / (5)	(11) Assets / Payroll (2) / (5)	(12) UAAL / Payroll (4) / (5)	(13) Non-Invest. Cash Flow (NICF)	(14) NICF / Assets (13)/(1)	(15) Market Rate of Return	(16) 5-year Trailing Average
2015	$ 147.4	$ 141.6	$ 785.9	$ 644.3	$ 827.1	18.0%	18.8%	$ 387.6	49.3%	95.0%	17.1%	77.9%	$ 31.4	21.3%	5.0%	N/A
2017	228.4	219.2	844.5	625.3	867.7	26.0%	27.0%	401.4	47.5%	97.3%	25.3%	72.1%	26.8	11.7%	11.1%	9.3%
2018	278.2	265.3	772.2	506.9	867.7	34.4%	36.0%	358.3	46.4%	89.0%	30.6%	63.7%	29.0	10.4%	8.5%	9.3%
2019	338.2	320.1	781.2	461.1	912.7	41.0%	43.3%	373.6	47.8%	85.6%	35.1%	50.5%	31.5	9.3%	9.6%	7.8%

(6) and (7). The funded ratio is the most widely known measure of a plan's financial strength, but the trend in the funded ratio is much more important than the absolute ratio. The funded ratio should trend to 100%. As it approaches 100%, it is important to re-evaluate the level of investment risk in the portfolio and potentially to re-evaluate the assumed rate of return.

(8) and (9). The ratio of retiree liabilities to total accrued liabilities gives an indication of the maturity of the System. As the ratio increases, cash flow needs increase, and the liquidity needs of the portfolio change. A ratio on the order of 50% indicates a maturing System.

(10) and (11). The ratio of liabilities and assets to payroll gives an indication of both maturity and volatility. Many Systems have ratios between 500% and 700%. Ratios significantly above that range may indicate difficulty in supporting the benefit level as a level % of payroll.

(12). The ratio of unfunded liability to payroll gives an indication of the plan sponsor's ability to actually pay off the unfunded liability. A ratio above approximately 300% or 400% may indicate difficulty in discharging the unfunded liability within a reasonable time frame.

(13) and (14). The ratio of Non-Investment Cash Flow to assets is an important measure of sustainability. Negative ratios are common and expected for a maturing system. In the longer term, this ratio should be on the order of approximately (4)%. A ratio that is significantly more negative than that for an extended period could be a leading indicator of potential exhaustion of assets.

(15) and (16). Investment return is probably the largest single risk that most Systems face. The year-by-year return and the five-year geometric average both give an indication of the reasonableness of the System’s assumed return. Of course, past performance is not a guarantee of future results. Market rate shown is based on an actuarial estimation method and will differ modestly from figures reported by the investment consultant.

SECTION B

FUNDING PROJECTIONS

Funding Projections as of June 30, 2019

Judges

Actuarial Valuation Date	Actuarial Value of Assets (in Millions $) (a)	Actuarial Accrued Liability (AAL) (in Millions $) (b)	Unfunded AAL (UAAL) (in Millions $) (b-a)	Actuarial Funded Ratio (a / b)	Actuarially Determined Contribution (ADC)* (in Millions $)	Market Value of Assets (in Millions $) (d)	Funded Ratio at Market Value (d / b)
6/30/2019	$ 4.21	$ 0.34	$ (3.87)	1250.96%		$ 4.45	1322.03%
6/30/2020	4.50	0.32	(4.18)	1398.58%	$ -	4.63	1436.88%
6/30/2021	4.76	0.30	(4.46)	1573.72%	-	4.81	1589.16%
6/30/2022	5.00	0.28	(4.72)	1784.33%	-	5.00	1784.33%
6/30/2023	5.21	0.27	(4.94)	1936.11%	-	5.21	1936.11%
6/30/2024	5.44	0.27	(5.17)	2041.05%	-	5.44	2041.05%
6/30/2025	5.69	0.27	(5.42)	2094.17%	-	5.69	2094.17%
6/30/2026	5.95	0.28	(5.67)	2159.64%	-	5.95	2159.64%
6/30/2027	6.22	0.28	(5.94)	2241.72%	-	6.22	2241.72%
6/30/2028	6.50	0.28	(6.22)	2314.75%	-	6.50	2314.75%
6/30/2029	6.80	0.29	(6.51)	2374.65%	-	6.80	2374.65%
6/30/2030	7.11	0.29	(6.82)	2436.90%	-	7.11	2436.90%
6/30/2031	7.44	0.30	(7.14)	2503.20%	-	7.44	2503.20%
6/30/2032	7.78	0.30	(7.48)	2587.12%	-	7.78	2587.12%
6/30/2033	8.15	0.31	(7.84)	2617.26%	-	8.15	2617.26%
6/30/2034	8.54	0.33	(8.21)	2571.81%	-	8.54	2571.81%
6/30/2035	8.95	0.36	(8.60)	2513.61%	-	8.95	2513.61%
6/30/2036	9.39	0.39	(9.01)	2433.60%	-	9.39	2433.60%
6/30/2037	9.86	0.42	(9.44)	2352.82%	-	9.86	2352.82%
6/30/2038	10.34	0.45	(9.89)	2277.09%	-	10.34	2277.09%
6/30/2039	10.85	0.49	(10.36)	2205.54%	-	10.85	2205.54%
6/30/2040	11.38	0.53	(10.85)	2142.83%	-	11.38	2142.83%
6/30/2041	11.94	0.57	(11.37)	2077.40%	-	11.94	2077.40%
6/30/2042	12.54	0.62	(11.91)	2009.12%	-	12.54	2009.12%

** For the year ending on the actuarial valuation date.*

A projection is not a prediction. These projections assume that all actuarial assumptions used in the valuation are met exactly in every future year including the assumption that all groups have open, stable active populations and that the employer makes all required contributions on a timely basis. In any given future year, actual experience will almost certainly differ from assumed, possibly significantly, causing future valuation results to differ from these projections. These projections should not be relied on for any purposes other than to illustrate the functioning of the valuation model over time under the current assumptions and methods. If projections are required for a different purpose, please contact GRS.

Funding Projections as of June 30, 2019

Legislature

Actuarial Valuation Date	Actuarial Value of Assets (in Millions $) (a)	Actuarial Accrued Liability (AAL) (in Millions $) (b)	Unfunded AAL (UAAL) (in Millions $) (b-a)	Actuarial Funded Ratio (a / b)	Actuarially Determined Contribution (ADC)* (in Millions $)	Market Value of Assets (in Millions $) (d)	Funded Ratio at Market Value (d / b)
6/30/2019	$ 3.09	$ 1.19	$ (1.90)	259.04%		$ 3.27	273.76%
6/30/2020	3.28	1.23	(2.05)	266.69%	$ -	3.37	274.06%
6/30/2021	3.42	1.25	(2.17)	273.68%	-	3.45	276.43%
6/30/2022	3.53	1.26	(2.27)	281.15%	-	3.53	281.15%
6/30/2023	3.61	1.26	(2.34)	285.86%	-	3.61	285.86%
6/30/2024	3.68	1.26	(2.42)	291.62%	-	3.68	291.62%
6/30/2025	3.74	1.25	(2.49)	300.18%	-	3.74	300.18%
6/30/2026	3.79	1.22	(2.57)	310.68%	-	3.79	310.68%
6/30/2027	3.84	1.19	(2.65)	322.52%	-	3.84	322.52%
6/30/2028	3.90	1.16	(2.73)	335.15%	-	3.90	335.15%
6/30/2029	3.95	1.14	(2.82)	348.33%	-	3.95	348.33%
6/30/2030	4.02	1.11	(2.91)	361.31%	-	4.02	361.31%
6/30/2031	4.10	1.10	(3.00)	372.22%	-	4.10	372.22%
6/30/2032	4.18	1.09	(3.09)	383.08%	-	4.18	383.08%
6/30/2033	4.31	1.12	(3.19)	384.22%	-	4.31	384.22%
6/30/2034	4.47	1.18	(3.29)	379.12%	-	4.47	379.12%
6/30/2035	4.64	1.25	(3.39)	371.98%	-	4.64	371.98%
6/30/2036	4.82	1.32	(3.50)	365.74%	-	4.82	365.74%
6/30/2037	5.01	1.40	(3.61)	358.34%	-	5.01	358.34%
6/30/2038	5.22	1.49	(3.72)	349.33%	-	5.22	349.33%
6/30/2039	5.43	1.59	(3.84)	341.78%	-	5.43	341.78%
6/30/2040	5.65	1.69	(3.96)	334.38%	-	5.65	334.38%
6/30/2041	5.89	1.80	(4.09)	326.80%	-	5.89	326.80%
6/30/2042	6.13	1.91	(4.22)	320.66%	-	6.13	320.66%

** For the year ending on the actuarial valuation date.*

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Funding Projections as of June 30, 2019

State Employees

Actuarial Valuation Date	Actuarial Value of Assets (in Millions $) (a)	Actuarial Accrued Liability (AAL) (in Millions $) (b)	Unfunded AAL (UAAL) (in Millions $) (b-a)	Actuarial Funded Ratio (a / b)	Actuarially Determined Contribution (ADC)* (in Millions $)	Market Value of Assets (in Millions $) (d)	Funded Ratio at Market Value (d / b)
6/30/2019	$ 208.67	$ 610.53	$ 401.86	34.18%		$ 220.52	36.12%
6/30/2020	248.53	627.81	379.28	39.59%	$ 51.49	254.64	40.56%
6/30/2021	279.22	645.33	366.11	43.27%	43.87	281.54	43.63%
6/30/2022	308.50	663.45	354.95	46.50%	43.39	308.50	46.50%
6/30/2023	337.11	682.11	344.99	49.42%	44.55	337.11	49.42%
6/30/2024	367.18	701.05	333.86	52.38%	45.74	367.18	52.38%
6/30/2025	398.63	720.10	321.47	55.36%	46.97	398.63	55.36%
6/30/2026	431.32	739.05	307.73	58.36%	48.23	431.32	58.36%
6/30/2027	465.07	757.63	292.56	61.38%	49.54	465.07	61.38%
6/30/2028	500.17	776.03	275.87	64.45%	50.88	500.17	64.45%
6/30/2029	537.06	794.61	257.54	67.59%	52.26	537.06	67.59%
6/30/2030	576.26	813.75	237.49	70.82%	53.68	576.26	70.82%
6/30/2031	618.35	833.94	215.59	74.15%	55.15	618.35	74.15%
6/30/2032	663.72	855.46	191.74	77.59%	56.66	663.72	77.59%
6/30/2033	712.70	878.50	165.80	81.13%	58.21	712.70	81.13%
6/30/2034	765.67	903.32	137.64	84.76%	59.81	765.67	84.76%
6/30/2035	822.85	929.99	107.14	88.48%	61.46	822.85	88.48%
6/30/2036	884.07	958.20	74.13	92.26%	63.16	884.07	92.26%
6/30/2037	949.66	988.13	38.47	96.11%	64.91	949.66	96.11%
6/30/2038	1,019.81	1,019.81	-	100.00%	66.72	1,019.81	100.00%
6/30/2039	1,053.00	1,053.00	-	100.00%	28.12	1,053.00	100.00%
6/30/2040	1,087.65	1,087.65	-	100.00%	28.97	1,087.65	100.00%
6/30/2041	1,124.07	1,124.07	-	100.00%	29.84	1,124.07	100.00%
6/30/2042	1,162.74	1,162.74	-	100.00%	30.73	1,162.74	100.00%

** For the year ending on the actuarial valuation date.*

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Funding Projections as of June 30, 2019

Teachers

Actuarial Valuation Date	Actuarial Value of Assets (in Millions $) (a)	Actuarial Accrued Liability (AAL) (in Millions $) (b)	Unfunded AAL (UAAL) (in Millions $) (b-a)	Actuarial Funded Ratio (a / b)	Actuarially Determined Contribution (ADC)* (in Millions $)	Market Value of Assets (in Millions $) (d)	Funded Ratio at Market Value (d / b)
6/30/2019	$ 13.11	$ 10.33	$ (2.78)	126.90%		$ 13.85	134.11%
6/30/2020	13.30	9.98	(3.31)	133.20%	$ -	13.68	137.05%
6/30/2021	13.43	9.69	(3.74)	138.57%	-	13.58	140.07%
6/30/2022	13.47	9.39	(4.08)	143.40%	-	13.47	143.40%
6/30/2023	13.34	9.06	(4.28)	147.24%	-	13.34	147.24%
6/30/2024	13.18	8.69	(4.50)	151.75%	-	13.18	151.75%
6/30/2025	13.02	8.30	(4.72)	156.86%	-	13.02	156.86%
6/30/2026	12.85	7.89	(4.96)	162.80%	-	12.85	162.80%
6/30/2027	12.69	7.48	(5.20)	169.56%	-	12.69	169.56%
6/30/2028	12.52	7.06	(5.46)	177.44%	-	12.52	177.44%
6/30/2029	12.37	6.63	(5.74)	186.48%	-	12.37	186.48%
6/30/2030	12.23	6.20	(6.02)	197.12%	-	12.23	197.12%
6/30/2031	12.09	5.77	(6.33)	209.68%	-	12.09	209.68%
6/30/2032	11.97	5.33	(6.64)	224.60%	-	11.97	224.60%
6/30/2033	11.87	4.90	(6.97)	242.38%	-	11.87	242.38%
6/30/2034	11.80	4.48	(7.32)	263.61%	-	11.80	263.61%
6/30/2035	11.76	4.07	(7.69)	289.11%	-	11.76	289.11%
6/30/2036	11.75	3.67	(8.07)	319.87%	-	11.75	319.87%
6/30/2037	11.77	3.30	(8.48)	357.16%	-	11.77	357.16%
6/30/2038	11.84	2.94	(8.90)	402.54%	-	11.84	402.54%
6/30/2039	11.96	2.61	(9.35)	458.02%	-	11.96	458.02%
6/30/2040	12.12	2.30	(9.81)	526.02%	-	12.12	526.02%
6/30/2041	12.33	2.02	(10.30)	609.22%	-	12.33	609.22%
6/30/2042	12.59	1.77	(10.82)	710.48%	-	12.59	710.48%

** For the year ending on the actuarial valuation date.*

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Funding Projections as of June 30, 2019

State Police

Actuarial Valuation Date	Actuarial Value of Assets (in Millions $) (a)	Actuarial Accrued Liability (AAL) (in Millions $) (b)	Unfunded AAL (UAAL) (in Millions $) (b-a)	Actuarial Funded Ratio (a / b)	Actuarially Determined Contribution (ADC)* (in Millions $)	Market Value of Assets (in Millions $) (d)	Funded Ratio at Market Value (d / b)
6/30/2019	$ 53.51	$ 79.88	$ 26.38	66.98%		$ 56.55	70.79%
6/30/2020	60.91	83.75	22.84	72.73%	$ 7.31	62.48	74.61%
6/30/2021	66.15	87.39	21.24	75.69%	5.92	66.75	76.37%
6/30/2022	70.85	90.81	19.96	78.02%	6.09	70.85	78.02%
6/30/2023	74.70	93.92	19.22	79.53%	6.23	74.70	79.53%
6/30/2024	78.45	96.88	18.43	80.97%	6.38	78.45	80.97%
6/30/2025	82.01	99.60	17.59	82.34%	6.54	82.01	82.34%
6/30/2026	85.42	102.11	16.69	83.65%	6.70	85.42	83.65%
6/30/2027	88.81	104.54	15.73	84.95%	6.86	88.81	84.95%
6/30/2028	92.65	107.36	14.70	86.30%	7.03	92.65	86.30%
6/30/2029	96.88	110.49	13.61	87.68%	7.21	96.88	87.68%
6/30/2030	101.55	113.99	12.45	89.08%	7.38	101.55	89.08%
6/30/2031	106.84	118.05	11.20	90.51%	7.57	106.84	90.51%
6/30/2032	113.21	123.10	9.88	91.97%	7.76	113.21	91.97%
6/30/2033	120.53	129.01	8.48	93.43%	7.96	120.53	93.43%
6/30/2034	128.54	135.52	6.98	94.85%	8.16	128.54	94.85%
6/30/2035	137.13	142.52	5.39	96.22%	8.37	137.13	96.22%
6/30/2036	146.81	150.51	3.70	97.54%	8.58	146.81	97.54%
6/30/2037	157.03	158.93	1.91	98.80%	8.80	157.03	98.80%
6/30/2038	167.86	167.86	-	100.00%	9.03	167.86	100.00%
6/30/2039	177.10	177.10	-	100.00%	7.29	177.10	100.00%
6/30/2040	186.28	186.28	-	100.00%	7.51	186.28	100.00%
6/30/2041	195.59	195.59	-	100.00%	7.73	195.59	100.00%
6/30/2042	204.94	204.94	-	100.00%	7.96	204.94	100.00%

** For the year ending on the actuarial valuation date.*

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Funding Projections as of June 30, 2019

Board of Education

Actuarial Valuation Date	Actuarial Value of Assets (in Millions $) (a)	Actuarial Accrued Liability (AAL) (in Millions $) (b)	Unfunded AAL (UAAL) (in Millions $) (b-a)	Actuarial Funded Ratio (a / b)	Actuarially Determined Contribution (ADC)* (in Millions $)	Market Value of Assets (in Millions $) (d)	Funded Ratio at Market Value (d / b)
6/30/2019	$ 37.48	$ 78.88	$ 41.40	47.51%		$ 39.61	50.21%
6/30/2020	45.07	83.75	38.68	53.82%	$ 5.49	46.17	55.13%
6/30/2021	50.85	88.60	37.75	57.39%	4.06	51.27	57.86%
6/30/2022	57.28	93.45	36.17	61.29%	4.99	57.28	61.29%
6/30/2023	63.40	98.31	34.92	64.48%	5.09	63.40	64.48%
6/30/2024	69.63	103.19	33.56	67.48%	5.19	69.63	67.48%
6/30/2025	76.01	108.12	32.10	70.31%	5.29	76.01	70.31%
6/30/2026	82.57	113.10	30.53	73.01%	5.40	82.57	73.01%
6/30/2027	89.32	118.16	28.84	75.59%	5.51	89.32	75.59%
6/30/2028	96.28	123.30	27.02	78.09%	5.62	96.28	78.09%
6/30/2029	103.49	128.56	25.07	80.50%	5.73	103.49	80.50%
6/30/2030	110.98	133.95	22.97	82.85%	5.85	110.98	82.85%
6/30/2031	118.78	139.51	20.73	85.14%	5.97	118.78	85.14%
6/30/2032	126.93	145.26	18.33	87.38%	6.10	126.93	87.38%
6/30/2033	135.49	151.24	15.75	89.58%	6.23	135.49	89.58%
6/30/2034	144.48	157.49	13.00	91.74%	6.36	144.48	91.74%
6/30/2035	153.95	164.02	10.06	93.86%	6.50	153.95	93.86%
6/30/2036	163.91	170.84	6.92	95.95%	6.64	163.91	95.95%
6/30/2037	174.38	177.95	3.57	97.99%	6.79	174.38	97.99%
6/30/2038	185.41	185.41	-	100.00%	6.94	185.41	100.00%
6/30/2039	193.24	193.24	-	100.00%	3.37	193.24	100.00%
6/30/2040	201.44	201.44	-	100.00%	3.47	201.44	100.00%
6/30/2041	210.03	210.03	-	100.00%	3.58	210.03	100.00%
6/30/2042	219.09	219.09	-	100.00%	3.68	219.09	100.00%

** For the year ending on the actuarial valuation date.*

A projection is not a prediction. These projections assume that all actuarial assumptions used in the valuation are met exactly in every future year including the assumption that all groups have open, stable active populations and that the employer makes all required contributions on a timely basis. In any given future year, actual experience will almost certainly differ from assumed, possibly significantly, causing future valuation results to differ from these projections. These projections should not be relied on for any purposes other than to illustrate the functioning of the valuation model over time under the current assumptions and methods. If projections are required for a different purpose, please contact GRS.

SECTION C

RETIREE PREMIUM RATE DEVELOPMENT

Retiree Premium Rate Development

Rhode Island has self-insured health plans administered by United Healthcare (UHC) which are offered to Medicare and Non-Medicare retirees. In addition, a fully-insured Medicare Advantage HMO is also available to Medicare retirees. Non-Medicare retirees have both medical and drug benefits. Post-65 retirees receive only medical coverage through the State's health plan (with the exception of retirees who can remain on their active plan, who have both medical and drug coverage after age 65).

For the fully-insured Medicare Advantage HMO, initial premium rates were developed based on the rates as of January 1, 2019. These rates were used without adjustment since they reflect the demographics of the group.

For the self-insured United Healthcare Plan 65, the initial premiums are calculated based on Rhode Island's own experience. Historical claim experience for the period from July 2016 to June 2019 was projected to the valuation period (i.e., July 1, 2019 to June 30, 2020) on an incurred claim basis and adjusted for trend, claim fluctuation and loaded for administrative expenses. A per member weighted average cost based on the projected experience was developed to be used as the initial premiums in the valuation. The starting per capita costs are the same for each group since experience is fairly uniform across each group.

To develop Medicare initial premium rates used for current retirees, we blended the United Healthcare Plan 65 rates and Medicare Advantage HMO rates based on the current plan elections.

For the self-insured Early Retiree and Value plans, the initial premiums are calculated based on the experience for Non-Medicare retirees. We developed one rate for all Non-Medicare retirees. Historical claim experience for the period from July 2016 to June 2019 was projected to the valuation period (i.e., July 1, 2019 to June 30, 2020) on an incurred claim basis and adjusted for trend, claim fluctuation and loaded for administrative expenses. A per member weighted average cost based on the projected experience was developed to be used as the initial premiums in the valuation.

For future retirees, we developed rates based on the assumed election percentages found in the Miscellaneous Technical Assumptions section of that report.

Age graded and sex distinct premiums are utilized in this valuation. The premium developed by the preceding process is 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, our process "distributes" the average premium over all age/sex combinations and assigns a unique premium for each combination. The age/gender specific premiums more accurately reflect the health care costs and utilization at that age.

Retiree Premium Rate Development

The following are monthly illustrative premiums for self-insured medical and prescription drug benefits:

Illustrative Rates Effective January 1, 2020		
	Single	Family
Non-Medicare Eligible		
Anchor Plan	$ 1,051.97	$ 2,926.93
Anchor Plus Plan	$ 1,125.64	$ 3,131.89
"Value" Plan/Active Plan	$ 640.63	$ 1,796.00
Illustrative Rates Effective January 1, 2019		
Medicare Eligible		
United Plan 65	$ 190.50	
United Medicare Complete/ Secure Horizons HMO	$ 260.32	

The following are monthly one-person premiums for self-insured medical and prescription drug benefits at select ages:

Pre-65 Participants		
Age	Male	Female
45	$606.33	$836.82
50	789.52	972.61
55	1,038.91	1,134.34
60	1,341.81	1,321.23

The following are monthly one-person premiums for self-insured and fully-insured medical and prescription drug benefits at select ages:

Medicare Advantage HMO Medicare-Eligible			United Healthcare Plan 65 Medicare-Eligible		
Age	Male	Female	Age	Male	Female
65	$242.58	$228.80	65	$200.20	$188.83
70	264.26	255.71	70	218.09	211.04
75	283.82	276.94	75	234.23	228.56

These rates are used in determining the actuarial cost of the plan. The rates that are charged to the retirees are set separately by the State.

James E. Pranschke is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to certify the per capita retiree health care rates shown on the previous page.

James E. Pranschke

James E. Pranschke, FSA, FCA, MAAA

SECTION D

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

This is a brief summary of the Rhode Island State Employees' and Electing Teachers OPEB provisions in effect as of June 30, 2019. In the event that any description contained herein differs from the actual eligibility or benefit, the appropriate Plan Sponsor Statute and/or employee contract will prevail.

Summary of Plan Provisions as of June 30, 2019
Retiree Health Care Benefits Plan

Plan Participants

Members of the Employees' Retirement System of Rhode Island (ERSRI), including State Employees, Legislators, and Certified Public School Teachers, with the exception of municipal employees are eligible to receive some form of State sponsored retiree health care benefits, provided the member began receiving a pension upon termination of State employment and meets the benefit eligibility requirements set forth below. In addition, State Judges and Legislators may purchase the active employee health care benefits at the early retiree rate or the Medicare supplemental plans for their lifetime. State Police Officers receive the active health care benefits at the same co-share they were paying as of their retirement date up to age 65.

The State provides two types of health care benefits. The Tier I subsidy provides that the State will pay the portion of the cost of post-retirement health care for the retiree and any dependents above the active group rate. The retiree pays a portion of the active monthly rate, and the State pays the difference between the active group rate and the early retiree rate. This subsidy is not based upon years of service and ends at age 65. In addition to the Tier I benefits, the state pays a portion of the cost of post-retirement health care above the Tier I costs for the retiree based upon the age and service of the retiree, which is referred to as the Tier II benefits.

Benefits Prior to 2008-H7204 Article 4

Benefit Eligibility – Service Retirement

Members of ERSRI are eligible to receive a portion of their post-retirement health insurance costs paid by the State if they retire with 10 or more years of contributing service. Eligibility conditions for retirement are:

State Police:	Members hired before 7/1/07 are eligible for retirement after completion of 20 years of service. (The Superintendent of State Police may retire on or after age 60 if he has credit for 10 years of service.) Members hired after 7/1/07 are eligible to retire after 25 years of service.
Employee Retirement System:	Age 60 with 10 years of service or any age with 28 years of service for those employees with ten or more years of contributing service prior to 7/1/05 and eligible to retire as of 9/30/09. If vested (10 years of contributing service as of 7/1/05), but ineligible to retire as of 9/30/09, must be age 62. For those employees with less than 10 years of service prior to 7/1/05, the employee must be age 59 with at least 29 years of service, age 65 with ten years of service, or age 62 with 29 years of service depending on vesting schedule and hire date.

Additional eligibility conditions apply to the following groups:

RN members:	Age 50 with 25 years of service if eligible to retire as of 9/30/09 Age 55 with 25 years of service if eligible on or after 10/1/09
Correctional Officers:	Age 50 with 20 years of service if eligible to retire as of 9/30/09 Age 55 with 25 years of service if eligible on or after 10/1/09
Legislators:	Age 55 with 8 years of service or any age with 20 years of service

Summary of Plan Provisions as of June 30, 2019
Retiree Health Care Benefits Plan (Continued)

Benefits Prior to 2008-H7204 Article 4

Benefit Amount – Service Retirement

The State will pay for a portion of the post-retirement health care as follows:

Judiciary Member:	May purchase active employee package for life. Member and spouse pay entire active premium for the plan.
Legislators:	May purchase active employee package for life. Member and spouse pay entire active premium for the plan. Note: Former legislators who retire as state employees are entitled to continue with the active medical plan, dental, and vision riders and they receive the state subsidy on their individual medical insurance (active plan or other retiree plan) for life.
State Police:	Member, Spouse, and Dependents are eligible for active package. State pays entire cost for member, spouse, and dependents up to age 65. At age 65, active coverage ceases if member has worked 40 quarters while participating in Medicare. If member is not Medicare eligible, the State pays for member and spousal coverage for active package. Member may purchase Post-65 coverage through the state if member is Medicare eligible. There is no state subsidy if the member is Medicare-eligible.
Teachers:	State pays for the portion of the cost of post-retirement health care for the retiree and any dependents above the active group rate, which is referred to as the **Tier 1 Benefits**. All Tier 1 benefits end at age 65 provided that the teacher is Medicare Eligible. Teachers under age 65 – The teacher and spouse may purchase early retiree package (individual or family) at the rate the active employees pay. Teachers 65 or older and Medicare-eligible – The teacher and spouse may only purchase a Post-65 benefit plan. The teacher and spouse pay the full cost. Teachers 65 or older and NOT Medicare eligible – The teacher and spouse may continue to purchase the early retiree package for the same rates as under 65.
All Other Members Retiring prior to 7/1/89:	State pays for the portion of the cost of post-retirement health care for the retiree and any dependents above the active group rate (Tier 1 Benefits). All Tier 1 benefits end at age 65. In addition, from January 1, 1986 to July 1, 1989, there were several early retirement incentive windows that granted additional health care benefits to those that retired within these periods.

Summary of Plan Provisions as of June 30, 2019
Retiree Health Care Benefits Plan (Continued)

Benefits Prior to 2008-H7204 Article 4

Benefit Amount – Service Retirement - Continued

All Other Members Retiring after 7/1/89: In addition to the Tier 1 benefits, the State pays a portion of the cost of post-retirement health care above the Tier 1 costs for the retiree based on the age and service of the retiree (see chart below). This additional benefit is referred to as the Tier 2 Benefit. Spouses are not eligible for the Tier 2 benefit. All Tier 1 benefits end at age 65, however, Tier 2 benefits continue for retirees only at age 65.

Note: Although Article 7 Chapter 117 of the Public Laws of 2005 amended the retirement system statute to institute a minimum retirement age for all non-vested employees, these changes were not reflected in RIGL Section 36-12-4, which relates to post employment health benefits. Because this is a potential liability, the chart below has not been modified.

Retiree Age Below Age 60	
Service	**Amount of Cost Paid by State**
Under 28	0%
28-34	90%
35+	100%

Retiree Age from Age 60 to Age 65	
Service	**Amount of Cost Paid by State**
0 – 10	0%
10 – 15	50%
16 – 22	70%
23 – 27	80%
28+	100%

Retiree Age Greater than Age 65	
Service	**Amount of Cost Paid by State**
10 – 15	50%
16 – 19	70%
20 – 27	90%
28+	100%

Summary of Plan Provisions as of June 30, 2019
Retiree Health Care Benefits Plan (Continued)

Benefits Prior to 2008-H7204 Article 4

Deferred Retirement

Members who terminate active employment with the State may be entitled to deferred coverage for post-retirement health care benefits if they have 10 years of service at the time of their termination and they leave their pension contributions on deposit with ERSRI.

The benefit commencement is coincident with the normal retirement eligibility conditions described above. The amount of the benefit is based on age and service as described above.

Effective June 30, 2008, deferred coverage is not available for current and future members who terminate active employment but are not eligible to retire immediately. Employee must immediately retire for eligibility for retiree health care through the State.

Disabled Retirement

All members (other than Teachers and State Police) who retire with a disability benefit are eligible to purchase the individual or family active package (at full active cost) prior to age 60. Upon reaching age 60 (with 10 years of contributing service), they may continue with the active package, and will also get the Tier 2 benefit (subsidy based on age and years of service).

Teachers who retire on a disability pension are not entitled to the active package, dental coverage, or vision coverage. Teachers qualify only for the Early Retiree Plan and are not eligible for Tier 2 benefits.

State Police troopers continue to pay the same percent co-share they paid while employed toward the Active package (health, dental, and vision) until becoming eligible for Medicare. If a trooper never becomes eligible for Medicare then the trooper continues with the Active package at the same subsidy level. Upon being eligible for Medicare, they revert to a Post-65 health plan through the retirement system and pay the entire cost.

Survivors Benefits

All Members except State Police: Survivors of retirees or active members who die in service are entitled to post-retirement health care benefits if and only if they are entitled to survivor pension benefits from ERSRI. The amount paid by the State is the amount above the group rate for an active member. Pre-65 beneficiaries receive a Tier 1 benefit, while Post-65 beneficiaries pay the entire premium.

State Police: Survivors of retirees or active members continue active coverage. State continues to pay same subsidy for active health care benefits until survivor becomes Medicare eligible. Upon eligibility for Medicare, survivor may purchase Post-65 health care coverage through the State.

Summary of Plan Provisions as of June 30, 2019
Retiree Health Care Benefits Plan (Continued)

Benefits Prior to 2008-H7204 Article 4

<u>**Medicare – Eligible**</u>

Disabled:	Members may continue with the active package, but the State pays only a certain percentage of the MediGap amount based on years of service and vesting.
Non-Disabled:	Tier 1 benefits are not paid by the State. For retired members, other than Teachers and State Police, State pays a percentage of a Post-65 health plan depending on member service. Dependents pay 100% of health care benefits.
State Police:	If the retiree and/or spouse are Medicare eligible, they pay the entire amount of the Post-65 plan. There is no state subsidy for retirees that are Medicare eligible. If the retiree is not Medicare eligible, the retiree pays the same percent co-share for the active plan benefit as they paid while employed. (Note: The majority of State Police are Medicare eligible).

This is a brief summary of the Rhode Island State Employees' and Electing Teachers OPEB provisions in effect as of June 30, 2019. In the event that any description contained herein differs from the actual eligibility or benefit, the appropriate Plan Sponsor Ordinance and/or employee contract will prevail.

Summary of Plan Provisions as of June 30, 2019
Retiree Health Care Benefits Plan (Continued)

State Employees (2008-H7204 Article 4)

Early Retirees

- The State offers a self-insured health plan administered by United Healthcare to early retirees (under age 65) and their spouses with both medical and drug benefits.

- For all employees retiring after Sept. 30, 2008, the Tier 1 subsidy ends. All costs and cost sharing is based on the actual cost of the plan, not the lower active employee rate. The State will also offer an alternate plan with reduced benefits at the same rate paid by active employees.

- Employees retiring after Sept. 30, 2008 are required to have at least 20 years of service and be age 59 to be eligible for a State subsidy. All eligible would pay a 20% cost share on the actual cost of the plan.

Creditable Service	Age	State-Paid	Retiree-Paid
<20 years	any	0%	100%
20+	<59	0%	100%
20+	59+	80%	20%

- Those retiring with less than 20 years of service have to pay the full price of the plan chosen. Those retiring before age 59 with at least 20 years of service receive the 80% subsidy at age 59.

- As of May 1, 2008, Article 4 amends the Tier 2 subsidy table to read "age at retirement" to clarify that the State subsidy for those with 28 to 35 years of service does not increase from 90% to 100% when the retiree turns 60. This applies to all current retirees and those retiring before October 1, 2008.

- At age 65, State retirees must purchase Medicare Part B (deducted from their Social Security checks) and enroll in a Medicare Supplemental plan with Medicare Exchange.

- There is no post-65 Tier 1 subsidy. Retiree share is based on actual plan cost.

Summary of Plan Provisions as Amended Effective June 30, 2008
Retiree Health Care Benefits Plan (Continued)

Teachers (2008-H7204 Article 4)

- Most retired teachers receive health benefits from their municipality.

- For those that do not, the State offers its self-insured health plan administered by United Healthcare to early retirees and their spouses with both medical and drug benefits. Post-65 retirees may enroll in a Medicare Supplemental plan in the Medicare Exchanged.

- For all teachers retiring after Sept. 30, 2008, Tier 1 subsidy ends. All costs will be based on the actual cost of the plan not the lower active employee rate. There is no other cost sharing by the State. The State will also offer an alternate plan with reduced benefits at the same rate paid by active employees.

- There is no post-65 Tier 1 subsidy. Retiree share is based on actual plan cost.

Disabled (2008-H7204 Article 4)

- All State employee members who retire with a disability benefit may purchase the active employee plan at the active rate until age 59. From ages 59 to 65, they are only eligible to purchase the early retiree plan at its actual cost or a Medicare Supplemental plan, both with State cost-sharing if they meet eligibility requirements.
- Current disability retirees not 65 as of September 30, 2008 and future retirees must transition to a State sponsored Medicare supplement plan at age 65 if eligible to do so.
- All cost sharing language for disability retirees now appears separately from the statutes for regular retirees. This includes provisions to "grandfather" certain current retirees into former cost sharing terms.
- Those who retired prior to September 30, 2008 and are at least 60 as of that date are subject to the former cost sharing provisions, which are restated in a new section of law, until they reach age 65. The cost sharing and the plan to which it applies depends on age as follows:
    - From ages 60 to 65, the retiree may get the active plan at the active rate, and State cost sharing on that rate is as follows.

Years of Service	*State's Share*	*Employee's Share*
10-15	50%	50%
16-22	70%	30%
23-27	80%	20%
28+	100%	0%

    - Upon turning age 65 on or after October 1, 2008, State retirees must purchase Medicare Part B (deducted from their Social Security checks) and enroll in a Medicare Supplemental plan with Medicare Exchange.
    - Those at least age 65 as of Sept. 30, 2008 are "grandfathered" into the former terms. This means they may keep the active plan at the active rate, but the State cost sharing is based on the cost of the Medicare plan. The employee pays a share of that plan's cost, shown in the table below, and any excess cost if she/he remains on the active employee plan.

Years of Service	*State's Share*	*Employee's Share*
10-15	50%	50%
16-19	70%	30%
20-27	90%	10%
28+	100%	0%

- Future retirees and those who have not turned 60 as of September 30, 2008 would be subject to cost sharing and plans more in line with other Article 4 changes. The percentages apply to the early retiree plan at its actual cost for those age 59-65 and the Medicare Supplemental plans after that.

Years of Service	*State's Share*	*Employee's Share*
0-10	0%	100%
10-20	50%	50%
20+	80%	20%

Summary of Plan Provisions as Amended Effective June 30, 2008
Retiree Health Care Benefits Plan (Concluded)

State Police (2008-H7204 Article 4)

- *No governing statutes – provided through collective bargaining agreement eff. May 2006 through April 2009.*
- Article 4 has no impact other than to require that the benefits be funded on an actuarial basis rather than pay-as-you-go.

Judges (2008-H7204 Article 4)

- *No governing statutes – provided as a matter of past practice.*
- Article 4 has no impact on this population. The retired employees' payments for this coverage and the state's expenses will be handled through the OPEB trust fund.

Legislators (2008-H7204 Article 4)

- Article 4 has no impact on this population. The retired employees' payments for this coverage and the state's expenses will be handled through the OPEB trust fund.

2011 Legislative Changes

- Retired Judges and Legislators are required to enroll in Medicare Part A and Part B upon eligibility and may only purchase Medicare supplemental plans at that time.
- State Police Officers must pay a portion of the Early Retiree rate based on the same active co-share they were paying at retirement.

2013 Legislative Changes

- Effective December 31, 2013, all currently Medicare eligible Judges and Legislators are required to enroll in Medicare.
- Medicare-eligible State retirees are required to participate in the Medicare Exchange effective October 1, 2014. The State will establish health reimbursement accounts (HRA) for eligible retirees and make contributions to the HRA on a monthly basis, which the retiree can then use to purchase insurance in the Exchange. The maximum State contribution will vary by age and is based on the lowest-cost Medicare supplemental plan that is filed with the State. The State will pay to each retiree a percent share of the maximum contribution based on the existing cost share schedules.
- Changes to the Active and Early Retiree plans have been made effective July 1, 2014 and January 1, 2015.

This is a brief summary of the Rhode Island State Employees' and Electing Teachers OPEB provisions in effect as of June 30, 2019. In the event that any description contained herein differs from the actual eligibility or benefit, the appropriate Plan Sponsor Statute and/or employee contract will prevail.

Summary of Plan Provisions as of June 30, 2019
Alternate Retirement Plan Employees
Board of Education

For the fiscal year beginning July 1, 2008, the pre-65 retiree health care coverage will be eliminated. In addition, the post-65 retiree health insurance contributions will increase in accordance with the following schedule.

Post-65 Retiree Health Insurance Premium Contributions	
1/1/2008	0.50% of base salary
7/1/2008	0.75% of base salary
7/1/2009	0.90% of base salary

Non-union, non-classified employees who currently participate in the retiree health insurance program will be offered a one-time option to either remain in or withdraw from the retiree health insurance option prior to June 30, 2008.

AAUP members are no longer eligible to participate in the retiree health care program.

Summary of Plan Provisions as of June 30, 2019
Alternate Retirement Plan Employees
Board of Education

Summary

The Board of Education (BOE) has established health care insurance coverage for employees participating in the BOE Alternate Retirement Plan (ARP) upon retirement. All current and future covered employees will be subject to a mandatory payroll deduction of 0.90% of salary. Contributions of members who are not vested are not refunded upon termination. This began upon ratification of the plan by the individual unions.

Eligibility

This health benefit applies to all employees who either currently participate in or will be eligible to participate in the BOE ARP as defined in RIGL 16-17.1-1 and 2, with the exception of URI AAUP members. This includes employees with a primary retirement plan funded through TIAA-CREF, MetLife, or AIG/VALIC.

Benefit Eligibility

Members become eligible for retiree medical benefits at age 65 or older with 10 or more years of service, per the chart on the following page.

Benefit Amount

The BOE pays a portion of the cost of post-retirement health care above the Tier I costs for the retiree based upon the age and service of the retiree. This is a lifetime benefit.

Summary of Plan Provisions as of June 30, 2019
Alternate Retirement Plan Employees
Board of Education

Benefit Amount

Eligible employees retiring ***on or after July 1, 2008***, from active service with the BOE shall receive a cost sharing formula as follows:

Post-65 Medicare Supplemental Coverage

Years of Service	Employer's Share	Employee's Share
10-15	50%	50%
16-19	70%	30%
20-27	90%	10%
28+	100%	0%

Eligible employees retiring ***before July 1, 2008***, from active service with the BOE shall receive a Tier 1 benefit and a cost sharing formula applicable to the active rate and post-65 rate as follows:

Pre-65 Medicare Coverage

Years of Service	Age	Employer's Share	Employee's Share
10-15	60	50%	50%
16-22	60	70%	30%
23-27	60	80%	20%
28+	Any	90%	10%
28+	60	100%	0%
35+	Any	100%	0%

Post-65 Medicare Supplemental Coverage

Years of Service	Employer's Share	Employee's Share
10-15	50%	50%
16-19	70%	30%
20-27	90%	10%
28+	100%	0%

Summary of Plan Provisions as of June 30, 2019
Alternate Retirement Plan Employees
Board of Education

Deferred Retirement

Members who retire from active employment with the State may be entitled to deferred coverage for post-retirement health care benefits if they have 10 years of service at the time of their retirement.

The benefit commencement is coincident with the normal retirement eligibility conditions described on the previous page. The amount of the benefit is based on age and service as described on the previous page.

Disabled Retirement

All members who retire with a disability benefit are eligible to purchase the individual or family active package (at full active cost) prior to age 65. Upon reaching age 65 (with 10 years of service), they may continue with the active package, with a subsidy based on age and years of service. Retirees must enroll in Medicare when eligible.

Survivors Benefits

Survivors of retirees are entitled to post-retirement health care benefits.

Medicare – Eligible Retirees

Disabled: Members may continue with the active package.

Non-Disabled: The BOE pays a percentage of supplemental Medicare costs depending on member service. Dependents pay 100% of health care benefits.

This is a brief summary of the State of Rhode Island Board of Education Other Postemployment Benefits provisions. In the event that any description contained herein differs from the actual eligibility or benefit, the appropriate Plan Sponsor Ordinance and/or employee contract will prevail.

Summary of Key Medical and Prescription Drug Benefits for Pre-65 Retirees

Pre-65 Retirees Option #1: Anchor Plan

Benefit	In-Network	Out-of-Network
Individual Deductible	$1,000 Individual $2,000 Family	$2,000 Individual $4,000 Family
Out-of-Pocket Maximum	$2,000 Individual $4,000 Family	$6,000 per person/year; $12,000 per family/year
Preventive Services	No charge	30% coinsurance
Doctor's Charges (Office) **Specialist** **Primary**	 $25 copay $15 copay	 30% coinsurance 30% coinsurance
Emergency Care	$150 copay/visit	$150 copay/visit
Hospital Services	10% coinsurance	30% coinsurance
Diagnostic X-Ray and Laboratory	No Charge	30% coinsurance
Emergency Medical Transportation	No charge	No charge
Imaging (CT/PET scans, MRIs)	10% coinsurance	30% coinsurance
Outpatient surgery	10% coinsurance	30% coinsurance
Urgent Care Services	$50 copay	30% coinsurance
Prescription Drugs: Deductible Out-of-Pocket Maximum Retail (4 tier) Mail Order (3 tier)	 None Combined $10/$35/$60/$100 copay $20/$70/$120 copay	 None None $10/$35/$60/$100 copay Not Covered

Summary of Key Medical and Prescription Drug Benefits for Pre-65 Retirees

Pre-65 Retirees Option #2: Anchor Plus Plan

Benefit	In-Network	Out-of-Network
Individual Deductible	$500 Individual $1,000 Family	$1,000 Individual $2,000 Family
Out-of-Pocket Maximum	$1,000 Individual $2,000 Family	$5,000 per person/year; $10,000 per family/year
Preventive Services	No charge	30% coinsurance
Doctor's Charges (Office) **Specialist** **Primary**	 $25 copay $15 copay	 30% coinsurance 30% coinsurance
Emergency Care	$125 copay/visit	$125 copay/visit
Hospital Services	10% coinsurance	30% coinsurance
Diagnostic X-Ray and Laboratory	No Charge	30% coinsurance
Emergency Medical Transportation	No charge	No charge
Imaging (CT/PET scans, MRIs)	10% coinsurance	30% coinsurance
Outpatient surgery	10% coinsurance	30% coinsurance
Urgent Care Services	$50 copay	30% coinsurance
Prescription Drugs: Deductible Out-of-Pocket Maximum Retail (4 tier) Mail Order (3 tier)	 None Combined $10/$35/$60/$100 copay $20/$70/$120 copay	 None None $10/$35/$60/$100 copay Not Covered

Summary of Key Medical and Prescription Drug Benefits for Pre-65 Retirees

Pre-65 Retirees Option #3: Value Plan

Benefit	In-Network	Out-of-Network
Individual Deductible	$2,000 Individual, $4,000 Family	$5,000 Individual, $10,000 Family
Out-of-Pocket Maximum	$4,000 individual $8,000 family	$10,000 individual $20,000 family
Preventive Services	No charge	50% coinsurance
Doctor's Charges (Office) **Primary or Specialist**	30% coinsurance	50% coinsurance
Emergency Care	30% coinsurance	10% coinsurance
Hospital Services	30% coinsurance	50% coinsurance
Diagnostic X-Ray and Laboratory	30% coinsurance	50% coinsurance
Emergency Medical Transportation	30% coinsurance	10% coinsurance
Imaging (CT/PET scans, MRIs)	30% coinsurance	50% coinsurance
Outpatient surgery	30% coinsurance	50% coinsurance
Urgent Care Services	30% coinsurance	50% coinsurance
Prescription Drugs: Deductible Out-of-Pocket Maximum Retail (4 tier) Mail Order (3 tier)	 Combined Combined $10/$35/$60/$100 copay after deductible $20/$70/$120 copay after deductible	 Combined Combined 50% coinsurance Not Covered

Summary of Key Medical and Prescription Drug Benefits for Post-65 Retirees Option 1

Post-65 Retirees Option #1: Plan 65 (Medicare Primary Plan)

Benefit	Coverage
Individual Deductible	No Annual Deductible
Out-of-Pocket Maximum	None
Preventive Services	Medicare Standard
Doctor's Charges (Office)	Covered in Full
Hospital Services	Days 1-60: Covered in Full Days 61-90 Covered in Full 60 lifetime reserve days Covered in Full 365 additional days: 10% co-pay after lifetime reserve days exhausted
Skilled Nursing Facility	Days 1-20: Covered in Full Days 21-100: Covered in Full Days 101 + Retiree pays 100%
Home Health Care	Covered in Full
Diagnostic X-Ray and Laboratory	Covered in Full
Ambulance (emergency only) Durable Medical Equipment	Covered in Full
Prescription Drugs	No Coverage
Blood	First 3 Pints Covered in Full
Emergency Room Care	Covered in Full
Eye Examinations	No Coverage
Non-Routine Vision Care	Covered in Full
Hospice Care	Limited co-pay for outpatient drugs and respite care

Chiropractic services – Co-pay is $0 for "manual manipulation of the spine for a subluxation" only. The plan does not cover routine care.

Summary of Key Medical and Prescription Drug Benefits for Post-65 Retirees Option 2

Post-65 Retirees Option #2: Medicare Complete

Benefit	Coverage
Individual Deductible	No Annual Deductible
Out-of-Pocket Maximum	$400
Annual Physical	$10 Co-pay (1 per year)
Doctor's Charges (Office)	$10 General/ $20 Specialist
Hospital Services	$100 Co-pay per day for days 1-3
Skilled Nursing Facility	$50 Co-pay per day for days 1 -10
Home Health Care	Covered in Full
Diagnostic X-Ray and Laboratory	Covered in Full
Durable Medical Equipment	Covered in Full
Chiropractic & Podiatry Services	$20 Co-pay
Ambulance	$50 Co-pay
Emergency Care/Urgent Care	$35 Co-pay/$20 Co-pay
Prescription Drugs: Part D Plan	
No initial Rx Deductible; Standard Part D Retail	
Retail: 30-day Supply:	
Generic Formulary Drugs Tier 1	
Name-Brand Formulary Drugs Tier 2	$ 3 Co-pay
Non-Formulary Drugs Tier 3	$28 Co-pay
Specialty Tier	$58 Co-pay
90-day Supply:	25% Co-pay
Tier 1	
Tier 2	$6 Co-pay
Tier 3	$56 Co-pay
Specialty Tier	$116 Co-pay
	25% Co-pay
Mail Order: Limited to a 90-day Supply:	
Tier 1	$6 Co-pay
Tier 2	$56 Co-pay
Tier 3	$116 Co-pay
Specialty Tier	25% Co-pay

Out of network copayment: in addition to paying the copayments listed in the chart, the retiree is required to pay the difference between what the insurer would pay for a prescription filled at in-network pharmacy and what the out-of-network pharmacy charges for the prescription.

Active Judges Members as of June 30, 2019
by Attained Age and Years of Service

Nearest Age	Years of Service to Valuation Date							Total No.
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
20-24								
25-29								
30-34								
35-39	1	1						2
40-44								
45-49				1	1			2
50-54	4		3		2			9
55-59	3	3	3		2		1	12
60-64	2	1		2	2		4	11
65 & Over			2	3	5	6	9	25
Totals	**10**	**5**	**8**	**6**	**12**	**6**	**14**	**61**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age:	61.6	years
Service:	19.4	years
Annual Pay:	$185,193	

Active Legislature Members as of June 30, 2019
by Attained Age and Years of Service

Nearest Age	Years of Service to Valuation Date 0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Total No.
20-24								
25-29	2	1						3
30-34	6	1						7
35-39	6	1	1					8
40-44	2	1	2					5
45-49	3	2	2					7
50-54	9	7		2				18
55-59	10	7	2		1	1	2	23
60-64	2	5	4	1	3	3		18
65 & Over	8	5	5	1	2	2	1	24
Totals	**48**	**30**	**16**	**4**	**6**	**6**	**3**	**113**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age:	54.6	years
Service:	8.5	years
Annual Pay:	$16,054	

Active State Employee Members as of June 30, 2019
by Attained Age and Years of Service

Nearest Age	Years of Service to Valuation Date							Total No.
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
15-19	1							1
20-24	128							128
25-29	512	123	1					636
30-34	484	305	111	3				903
35-39	345	295	258	85	5			988
40-44	243	209	233	213	74	1		973
45-49	245	210	210	272	221	69	10	1,237
50-54	239	262	252	230	243	290	254	1,770
55-59	209	252	265	260	215	245	610	2,056
60-64	107	199	227	208	202	226	435	1,604
65 & Over	48	98	152	155	132	98	205	888
Totals	**2,561**	**1,953**	**1,709**	**1,426**	**1,092**	**929**	**1,514**	**11,184**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age:	49.5	years
Service:	14.6	years
Annual Pay:	$66,617	

Active Teachers Members as of June 30, 2019
by Attained Age and Years of Service

Active Teachers were excluded from the valuation. The State no longer provides the Tier 1 subsidy to future retirees. Certain school districts did not participate in Medicare prior to 1986. Teachers hired in those districts prior to that date may generate a post-65 implicit subsidy for the State, however many of those Teachers may get Medicare coverage from working 40 quarters in another covered position or through a covered spouse.

Active State Police Members as of June 30, 2019
by Attained Age and Years of Service

Nearest Age	Years of Service to Valuation Date: 0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Total No.
20-24	13							13
25-29	33	17	1					51
30-34	11	26	9					46
35-39	2	16	14	8				40
40-44		2	5	14	2			23
45-49				19	12	3		34
50-54				7	18	17		42
55-59					3	5		8
60-64				2	1	1		4
Totals	**59**	**61**	**29**	**50**	**36**	**26**		**261**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age:	38.8	years
Service:	11.8	years
Annual Pay:	$91,734	

Active Board of Education Members as of June 30, 2019
by Attained Age and Years of Service

Nearest Age	Years of Service to Valuation Date 0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	Total No.
20-24	6							6
25-29	49	3						52
30-34	99	45	2					146
35-39	86	68	34	5				193
40-44	67	54	53	35	3			212
45-49	56	39	54	33	20	1		203
50-54	57	54	53	38	36	12	1	251
55-59	47	55	42	43	45	16	29	277
60-64	21	30	50	48	37	31	51	268
65 & Over	9	8	32	32	23	41	116	261
Totals	**497**	**356**	**320**	**234**	**164**	**101**	**197**	**1,869**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age:	51.0	years
Service:	13.3	years
Annual Pay:	$69,860	

Retired and Deferred Members as of June 30, 2019
by Attained Age

Retired Members*

Attained Age	Number of Retirees and Beneficiaries						
	Judges	Legislature	State Employees	Teachers	State Police	BOE	Total
Under 50	0	1	2	2	5	0	10
50-54	0	4	3	0	46	0	53
55-59	1	2	118	4	47	0	172
60-64	3	2	962	27	41	0	1,035
65 & Over	29	6	5,613	66	24	857	6,595
Totals	**33**	**15**	**6,698**	**99**	**163**	**857**	**7,865**

* *Includes both retirees and beneficiaries participating in the retiree health care plan.*

Deferred Members

Terminated employees are not included in the valuation.

SECTION E

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Valuation Method

Actuarial Cost Method. Normal cost and the allocation of benefit values between service rendered before and after the valuation date was determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

(i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and

(ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains (losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Financing of Unfunded Actuarial Accrued Liabilities. Unfunded Actuarial Accrued Liabilities (UAAL) were amortized by a level (principal and interest combined) percent of payroll contribution for State Employees, State Police and Board of Education, and by a level dollar amount for Teachers. The asset surplus for Judges and Legislators was amortized by a level percent of payroll. The UAAL were determined using the funding value of assets and actuarial accrued liability calculated as of the valuation date. The UAAL amortization payment reflects payments expected to be made between the valuation date and the fiscal year for which the contributions in this report have been calculated.

By statute, the UAAL is being amortized over the remainder of a closed 30-year period (or shorter) from June 30, 2006. The UAAL amortization payment is the amount required to fully amortize the UAAL over a 17-year period as a level percent of payroll for all groups except Teachers in the fiscal year beginning two years after the valuation date. The Teachers amortization period is determined based on the statutory contribution. Amortizations reflect the projected funded status at the beginning of the applicable fiscal year.

For those groups with a projected asset surplus (assets exceeding liability), a 30-year level percent of payroll amortization is used.

For purposes of determining projected annual contributions as a percent of payroll, the size of the active group is assumed to remain level at the number of actives as of the actuarial valuation date.

Actuarial Assumptions

Actuarial Assumptions are established by the Board after consulting with the actuary. The rationale for these assumptions is contained in the OPEB Valuation Assumption Review issued August 28, 2017 and adopted by the Board September 15, 2017. All assumptions are based on future expectations, not market measures.

***Rates of Investment*. 5.00% per year,** compounded annually, net of investment expenses.

The rates of salary increase used for individual members are in accordance with the following table. This assumption is used to project a member's current salary to the salaries upon which future contributions will be based.

Salary Increase Assumptions for an Individual Member

Service at Beginning of Year	State Employees, BOE, Legislators			State Police		
	Merit & Longevity	Base (Economic)	Increase Next Year	Merit & Longevity	Base (Economic)	Increase Next Year
1	1.00 %	3.00 %	4.00 %	11.00 %	3.00 %	14.00 %
2	2.00	3.00	5.00	10.00	3.00	13.00
3	3.00	3.00	6.00	8.00	3.00	11.00
4	2.75	3.00	5.75	5.00	3.00	8.00
5	2.75	3.00	5.75	3.50	3.00	6.50
6	2.50	3.00	5.50	4.00	3.00	7.00
7	1.25	3.00	4.25	1.50	3.00	4.50
8	1.00	3.00	4.00	1.50	3.00	4.50
9	1.00	3.00	4.00	1.00	3.00	4.00
10	1.00	3.00	4.00	1.00	3.00	4.00
11	1.00	3.00	4.00	1.00	3.00	4.00
12	2.00	3.00	5.00	1.00	3.00	4.00
13	1.25	3.00	4.25	1.00	3.00	4.00
14	1.00	3.00	4.00	1.00	3.00	4.00
15	1.00	3.00	4.00	1.00	3.00	4.00
16	1.00	3.00	4.00	1.00	3.00	4.00
17	0.50	3.00	3.50	1.00	3.00	4.00
18	0.50	3.00	3.50	1.00	3.00	4.00
19	0.50	3.00	3.50	1.00	3.00	4.00
20	0.50	3.00	3.50	1.00	3.00	4.00
21	0.50	3.00	3.50	1.00	3.00	4.00
22	0.25	3.00	3.25	1.00	3.00	4.00
23	0.25	3.00	3.25	1.00	3.00	4.00
24	0.25	3.00	3.25	1.00	3.00	4.00
25 or more	0.00	3.00	3.00	1.00	3.00	4.00

Judges were assumed to have 3.00% salary increases. The number of active members is assumed to remain constant in the future. The payroll growth rate for amortizing the Unfunded Actuarial Accrued Liabilities was assumed to be 3.00%.

Actuarial Assumptions (Continued)

Post-Retirement Mortality Rates. The mortality tables used to project the post-termination mortality experience of plan members are described below.

Healthy Male Teachers, Judges, Legislators, and Board of Education: RP-2014 Combined Healthy for males with White Collar adjustment, projected with the MP-2016 ultimate rates.

Healthy Female Teachers, Judges, Legislators, and Board of Education: RP-2014 Combined Healthy for females with White Collar adjustment, projected with the MP-2016 ultimate rates.

Healthy Male State Employees and Police: RP-2014 Combined Healthy for males with Blue Collar adjustment, projected with the MP-2016 ultimate rates.

Healthy Female State Employees and Police: RP- Combined Healthy for females, projected with the MP 2016 ultimate rates.

Sample rates for Non-Disabled Members prior to the MP-2016 projection, as well as MP-2016 are shown below:

Sample Attained Ages	State Employees and State Police Healthy Males	State Employees and State Police Healthy Females	Teachers, Legislators, Judges, and Board of Education Healthy Males	Teachers, Legislators, Judges, and Board of Education Healthy Females	Ultimate Scale MP 2016 Males	Ultimate Scale MP 2016 Females
25	0.07 %	0.03 %	0.04 %	0.03 %	1.00 %	1.00 %
30	0.10	0.06	0.06	0.05	1.00	1.00
35	0.13	0.10	0.08	0.08	1.00	1.00
40	0.19	0.15	0.12	0.11	1.00	1.00
45	0.28	0.21	0.19	0.16	1.00	1.00
50	0.41	0.28	0.28	0.21	1.00	1.00
55	0.60	0.36	0.39	0.27	1.00	1.00
60	0.85	0.52	0.52	0.39	1.00	1.00
65	1.26	0.80	0.76	0.65	1.00	1.00
70	1.97	1.29	1.24	1.06	1.00	1.00
75	3.15	2.09	2.13	1.76	1.00	1.00
80	5.19	3.48	3.73	3.04	1.00	1.00

The assumption for future mortality improvements is fully generational mortality improvements using MP-2016 ultimate rates with a base year of 2014.

Actuarial Assumptions (Continued)

Disabled Males: RP-2014 Disabled Retiree Table for males, projected with the MP-2016 ultimate rates.

Disabled Females: RP-2014 Disabled Retiree Table for females, projected with the MP-2016 ultimate rates.

Sample rates for Disabled Members are shown below:

Sample Attained Ages	Disabled Males	Disabled Females
25	0.20 %	0.09 %
30	0.49	0.23
35	0.86	0.42
40	1.27	0.66
45	1.68	0.92
50	2.04	1.19
55	2.34	1.45
60	2.66	1.70
65	3.17	2.09
70	4.03	2.82
75	5.43	4.10
80	7.66	6.10

Pre-Retirement Mortality Rates. The mortality tables used to project the pre-termination mortality experience of plan members are the RP-2014 Employee tables for males and females as the base table, and then to apply a 75% multiplier for Teachers, Judges, Legislators, and Board of Education and a 100% multiplier for State Employees and State Police.

Pre-Retirement Mortality rates are static tables and do not reflect any future mortality improvements.

Actuarial Assumptions (Continued)

Rates of separation from active membership are used to estimate the number of employees at each age that are expected to terminate employment before qualifying for retirement benefits. The withdrawal rates do not apply to members eligible to retire, and do not include separation on account of death or disability. Sample rates of separation from active employment are shown below:

Service at Beginning of Year	State Employees, Legislature and Board of Education	
	Male	Female
0	16.00 %	16.00 %
1	10.12	10.12
2	8.08	8.08
3	6.88	6.88
4	6.04	6.04
5	5.38	5.38
6	4.84	4.84
7	4.39	4.39
8	4.00	4.00
9	3.65	3.65
10	3.34	3.34
11	3.06	3.06
12	2.81	2.81
13	2.57	2.57
14	2.35	2.35
15	2.15	2.15
16	1.96	1.96
17	1.78	1.78
18	1.61	1.61
19	1.45	1.45
20	1.30	1.30
21	1.16	1.16
22	1.02	1.02
23	0.89	0.89
24	0.77	0.77
25 or more	0.00	0.00

State Police employees were assumed not to separate from employment for causes other than retirement, death, or disability.

Judicial employees were assumed not to separate from employment for causes other than retirement or death.

Actuarial Assumptions (Continued)

The rates of retirement used to measure the probability of eligible members retiring during the next year, were as follows:

State Employee rates of retirement are based on pension eligibility.

State Employee Pension Eligibility:

I. Employees eligible to retire on or before June 30, 2012
    a. Grandfathered Schedule A members—age 60 with 10 years of service, or at any age with 28 years of service.
    b. Non-grandfathered Schedule A members—eligible at an individually determined age. This age is the result of interpolating between the retirement age under the rules applicable to grandfathered employees in (a) above and a minimum age of 62.
    c. Schedule B members—age 65 with 10 years of service. Age 59 with 29 years of service by September 30, 2009. Age 62 if they have credit for 29 years of service with the minimum age of 62 adjusted downward similarly to (b) above.

II. Employees first eligible to retire after June 30, 2012
    a. After July 1, 2012, members are eligible to retire upon the attainment of the member's SSNRA and 5 years of service.
    b. For members with 5 or more years of contributory service as of June 30, 2012, the retirement age will be adjusted downward in proportion to the amount of service the member has earned as of June 30, 2012. The adjusted retirement age is the result of interpolating between the retirement age as determined in (i)(b) or (i)(c) above and their SSNRA.

Nurses Pension Eligibility:

- Nurses who have reached age 50 with 25 years of service by September 30, 2009 are eligible to retire at age 50 with 25 years of service.
- Members who have not reached age 50 with 25 years of service by September 30, 2009 are able to retire when they reach age 55 with 25 years of service.
- For members in service as of October 1, 2009 who were not eligible to retire as of September 30, 2009 but who are eligible to retire on or prior to June 30, 2012, the minimum retirement age of 55 will be adjusted downward in proportion to the amount of service the member has earned as of September 30, 2009.

For State Employees (except Correctional Officers) and Board of Education: a flat 20% per year retirement probability for members eligible for unreduced retirement. A 35% retirement probability at first eligibility will be applied if the member has reached age 65 or with at least 25 years of service.

Actuarial Assumptions (Continued)

Retirement rates were also set for all Schedule B (state employee, male and female) members eligible for ERSRI reduced retirement and Board of Education, whether state employees or teachers, whether males or females, as follows:

Years from Normal Retirement Age	Retirement Rate
5	2 %
4	2
3	2
2	3
1	4

Actuarial Assumptions (Continued)

Correctional Officer rates of retirement are based on pension eligibility.

Correctional Officer Pension Eligibility:

- Correctional officers who have reached age 50 with 20 years of service as of September 30, 2009 are eligible to retire at age 50 with 20 years of service.
- Members who have not reached age 50 with 20 years of service by September 30, 2009 are eligible at age 55 with 25 years of service.
- For members in service as of October 1, 2009 who were not eligible to retire as of September 30, 2009 but who are eligible to retire on or prior to June 30, 2012, the minimum retirement age of 55 will be adjusted downward in proportion to the amount of service the member has earned as of September 30, 2009.
- After July 1, 2012, members are eligible to retire upon the attainment of the member's SSNRA and 5 years of service.

A set of unisex rates, indexed by service, as shown below. All members still active are assumed to retire at age 65 with 10 years of service. Because of the enactment of Article 7 in 2009 and the RIRSA in 2011, the retirement assumption was modified for members whose retirement ages were delayed. Members who would have been assumed to retire prior to the rules in effect before the enactment of the provision changes are assumed to retire when first eligible for an unreduced benefit. This demand is recognized by adding a 5% probability for every year the member has been deferred.

Corrections			
Service	**Ret. Rate**	**Service**	**Ret. Rate**
20-24	2.00%	34	10.00%
25-27	3.00%	35	30.00%
28	4.00%	36	25.00%
29	5.00%	37	25.00%
30	6.00%	38	25.00%
31	7.00%	39	25.00%
32	8.00%	40	100.00%
33	9.00%		

Actuarial Assumptions (Continued)

State Police rates of retirement are based on the age at first pension eligibility.

State Police Pension Eligibility:

- Employees eligible to retire on or before June 30, 2012:

  Members hired before July 1, 2007 are eligible for retirement at any age after completion of 20 years of service. Members hired on or after July 1, 2007 are eligible for retirement at any age after completion of 25 years of service.

- Employees first eligible to retire after June 30, 2012:

  Any member of the state police may retire at any time subsequent to the date the member's retirement allowance equals or exceeds 50% of average compensation.

State Police			
Hired before July 1, 2007		Hired on/after July 1, 2007	
Service	Ret. Rate	Service	Ret. Rate
20	12.00%	20	
21	10.00%	21	
22	10.00%	22	
23	10.00%	23	
24	12.00%	24	
25	14.00%	25	50.00%
26	16.00%	26	16.00%
27	18.00%	27	18.00%
28	20.00%	28	20.00%
29	20.00%	29	20.00%
30+	35.00%	30+	35.00%

100% of State Police members are assumed to retire at age 60 and completion of 20 years of service (25 years of service for members hired after July 1, 2007) if still active.

Judges are assumed to retire when eligible for an unreduced retirement benefit (age 65 with 20 years of service, or age 70 with 15 years of service). 33% of Judges are assumed to retire at age 65 with 10 years of service, or any age with 20 years of service. Judges who have not reached eligibility for an unreduced retirement benefit by age 75 are assumed to terminate at age 75.

Actuarial Assumptions (Continued)

Rates of disability among active members are used to estimate the incidence of member disability in future years.

	Percent Becoming Disabled within Next Year					
	State Employees, Legislature, and Board of Education				State Police	
Sample	Male		Female		Male & Female	
Ages	Ordinary	Accidental	Ordinary	Accidental	Ordinary	Accidental
20	0.021 %	0.009 %	0.024 %	0.007 %	0.02 %	0.12 %
25	0.032	0.014	0.036	0.011	0.03	0.17
30	0.039	0.017	0.044	0.013	0.03	0.22
35	0.053	0.023	0.060	0.018	0.04	0.29
40	0.077	0.033	0.088	0.026	0.07	0.44
45	0.126	0.054	0.144	0.043	0.11	0.72
50	0.214	0.092	0.244	0.073	0.18	1.21
55	0.354	0.152	0.404	0.121	0.18	1.21
60	0.494	0.212	0.564	0.169	0.18	1.21
65	0.809	0.347	0.924	0.277	0.18	1.21

Judges are not assumed to become disabled.

Actuarial Assumptions (Concluded)

Health care trend rates used in the valuation were as shown below:

	Medical and Prescription Drug Trend Rate Increases from Prior Year
Year	**Intermediate**
2020	8.25 %
2021	7.75
2022	7.25
2023	6.75
2024	6.25
2025	5.75
2026	5.25
2027	5.00
2028	4.75
2029	4.50
2030	4.25
2031	4.00
2032	3.75
2033 & Later	3.50

Dental and Vision rates were assumed to increase by 3.50% each year. The rates for Medicare Part B premiums are 5.5% for 2020 to 2026, and then trending down by 0.25% each year until the ultimate rate of 3.5%.

Aging factors are based on a recent study of health costs by the SOA titled "Health Care Costs – From Birth to Death".

Miscellaneous and Technical Assumptions

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.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.
Deferred Vested Members:	It is our understanding that the Deferred Vested Benefits have been eliminated for all groups except Board of Education. No terminations from the Board of Education were indicated to have coverage and, therefore, were excluded from the valuation.
Dental and Vision:	With the exception of State Police retirees, Dental and Visions Benefits were assumed to be fully paid by the retiree.
Census Data:	We received data from the State and United Health Care (via the State). The data was merged and adjusted for duplicates. Average characteristics of the group as a whole are used to fill in unknown data.
Marriage Assumption:	85% members 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 active member valuation purposes. No surviving spouse is assumed to re-marry and there will be no children's benefit.
Election Percentage:	It was assumed that 90% of State employees, 80% of Judges and Board of Education, 60% of Legislators and 100% of State Police active members will elect to receive retiree health care benefits through the State upon retirement. Of those assumed to elect coverage, 85% of Police employees, 62.5% of Judges and Legislators, and 25% of State employees and Board of Education were assumed to elect two-person coverage, if eligible. For those that elect two-person coverage, it was assumed that coverage would continue to the spouse 50% of the time upon death of Judges retirees, if eligible, and 100% of the time for all other retirees, if eligible. For active employees who have opted out of the State's active health care plan, it was assumed they would elect retiree health.

Miscellaneous and Technical Assumptions (Concluded)

Medicare Coverage:	Assumed to be available for all covered employees on attainment of age 65. Retirees were assumed to elect to participate in Medicare. Current Teacher retirees over the age of 65 participating in the Early Retiree/Anchor plans were assumed not to co-ordinate with Medicare.
Health Windows Revenue:	The State pays the cost of retiree health benefits of those who retired under an early retirement incentive program. The cost of retiree health benefits for these individuals is charged as an annual operating cost to the department or agency from which they were employed immediately prior to retirement. The ADEC for State Employees is reduced by the actual amount paid in the prior year to avoid double charging the State.
Covered Children:	A 20% load was applied to State Police liabilities for children's coverage.

SECTION F

SUPPLEMENTARY INFORMATION

GASB Statements No. 74 and No. 75 are the accounting standards which replaced GASB Statements No. 43 and 45. GASB Statement No. 75 was first effective for fiscal year 2017 and GASB Statement No. 75 was first effective for fiscal year 2018. A separate GASB Statements No. 74 and No. 75 report has been issued outside of this report. This section contains historical GASB Statements No. 43 and No. 45 reporting information for prior fiscal years and illustrative information for fiscal year 2017 and after.

Supplementary Information

Name of Plan	Rhode Island State Employees' and Electing Teachers OPEB
Type of Plan	Agent Multiple-Employer Plan
Valuation Date	June 30, 2019
Actuarial Cost Method	Individual Entry Age
Amortization Method	Level Dollar - Teachers
	Level Percent of Pay – All Others
Remaining Amortization Periods	Determined by Statutory Contribution – Teachers
	30 Years Open – Judges and Legislators
	17 Years Closed - All Other
Asset Valuation Method	Actuarial Value – 4-Year Smoothing
Actuarial Assumptions:	
Discount Rate	5.00% Per Year, net of investment expenses
Projected Salary Increases	3.0%-14.0%
Valuation Health Care Cost Trend Rate	
Intermediate	8.25% in 2020, grading to 3.5% in 2033

Supplementary Information

Schedule of Funding Progress
(Dollars in Thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ([b-a]/c)
Judges						
6/30/2009	$ -	$ 8,665	$ 8,665	0.0%	$ 9,395	92.2%
6/30/2011	841	2,610	1,769	32.2%	10,813	16.4%
6/30/2013	2,151	1,054	(1,097)	204.1%	13,447	(8.2)%
6/30/2015	2,826	756	(2,070)	373.8%	10,281	(20.1)%
6/30/2017	3,551	1,322	(2,229)	268.6%	10,746	(20.7)%
6/30/2018[a]	3,924	1,237	(2,687)	317.2%	10,746	(25.0)%
6/30/2019	4,210	337	(3,873)	1249.3%	11,297	(34.3)%
Legislators						
6/30/2009	$ -	$ 11,752	$ 11,752	0.0%	$ 1,612	729.0%
6/30/2011	1,442	1,443	1	99.9%	1,615	0.1%
6/30/2013	2,202	1,549	(653)	142.2%	1,695	(38.5)%
6/30/2015	2,469	1,317	(1,152)	187.5%	1,742	(66.1)%
6/30/2017	2,787	1,525	(1,262)	182.8%	1,719	(73.4)%
6/30/2018[a]	2,902	1,200	(1,702)	241.8%	1,719	(99.0)%
6/30/2019	3,092	1,194	(1,898)	259.0%	1,814	(104.6)%
State Employees						
6/30/2009	$ -	$ 673,640	$ 673,640	0.0%	$ 574,569	117.2%
6/30/2011	11,545	786,293	774,748	1.5%	600,273	129.1%
6/30/2013	39,527	637,059	597,532	6.2%	671,762	88.9%
6/30/2015	92,125	622,826	530,701	14.8%	682,965	77.7%
6/30/2017	143,704	669,200	525,496	21.5%	708,887	74.1%
6/30/2018[a]	172,930	612,107	439,177	28.3%	708,887	62.0%
6/30/2019	208,666	610,529	401,863	34.2%	745,039	53.9%
Teacher						
6/30/2009	$ -	$ 13,529	$ 13,529	0.0%	N/A	N/A
6/30/2011	2,040	11,512	9,472	17.7%	N/A	N/A
6/30/2013	3,230	12,569	9,339	25.7%	N/A	N/A
6/30/2015	6,648	13,050	6,402	50.9%	N/A	N/A
6/30/2017	9,382	12,832	3,450	73.1%	N/A	N/A
6/30/2018[a]	11,250	11,619	369	96.8%	N/A	N/A
6/30/2019	13,106	10,328	(2,778)	126.9%	N/A	N/A
State Police						
6/30/2009	$ -	$ 67,079	$ 67,079	0.0%	$ 16,725	401.1%
6/30/2011	1,488	81,759	80,271	1.8%	17,384	461.8%
6/30/2013	9,587	70,385	60,798	13.6%	17,748	342.6%
6/30/2015	22,920	78,857	55,937	29.1%	18,119	308.7%
6/30/2017	36,020	82,423	46,403	43.7%	21,334	217.5%
6/30/2018[a]	44,011	76,219	32,208	57.7%	21,334	151.0%
6/30/2019	53,508	79,885	26,377	67.0%	23,943	110.2%
Board of Education						
6/30/2009	$ -	$ 58,476	$ 58,476	0.0%	$ 106,665	54.8%
6/30/2011	3,189	53,751	50,562	5.9%	125,340	40.3%
6/30/2013	7,486	55,706	48,220	13.4%	113,375	42.5%
6/30/2015	14,608	69,106	54,498	21.1%	113,947	47.8%
6/30/2017	23,743	77,201	53,458	30.8%	124,967	42.8%
6/30/2018[a]	30,297	69,851	39,554	43.4%	124,967	31.7%
6/30/2019	37,478	78,879	41,401	47.5%	130,569	31.7%

[a] *Updated results after removal of liabilities associated with the ACA "Cadillac tax".*

Supplementary Information

Schedule of Employer Contributions
(Dollars in Thousands)

	Valuation Date	Fiscal Year Ending	Annual Required Contribution	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
Judges						
	6/30/2007	6/30/2010[a]	11.64%	$ 1,131	15.33%	$ 2,811
	6/30/2007	6/30/2011[b]	9.86%	1,013	97.32%	2,839
	6/30/2009	6/30/2012	7.19%	810	96.53%	2,867
	6/30/2009	6/30/2013	7.19%	802	97.01%	2,891
	6/30/2011	6/30/2014	0.12%	13	100.00%	-
	6/30/2011	6/30/2015	0.12%	13	100.00%	-
	6/30/2013	6/30/2016	0.00%	-	100.00%	-
	6/30/2013	6/30/2017	0.00%	-	100.00%	-
	6/30/2015	6/30/2018	0.00%	-	100.00%	-
	6/30/2015	6/30/2019	0.00%			
	6/30/2017	6/30/2020	0.00%			
	6/30/2018	6/30/2021[c]	0.00%			
	6/30/2019	6/30/2022	0.00%			
Legislators						
	6/30/2007	6/30/2010[a]	116.91%	$ 1,861	7.72%	$ 2,095
	6/30/2007	6/30/2011[b]	95.49%	1,541	98.62%	2,116
	6/30/2009	6/30/2012	46.35%	799	97.34%	-
	6/30/2009	6/30/2013	46.35%	-	N/A	-
	6/30/2011	6/30/2014	0.00%	-	N/A	-
	6/30/2011	6/30/2015	0.00%	-	N/A	-
	6/30/2013	6/30/2016	1.53%	27	100.00%	-
	6/30/2013	6/30/2017	1.53%	27	100.00%	-
	6/30/2015	6/30/2018	0.81%	14	100.00%	-
	6/30/2015	6/30/2019	0.81%			
	6/30/2017	6/30/2020	0.00%			
	6/30/2018	6/30/2021[c]	0.00%			
	6/30/2019	6/30/2022	0.00%			
State Employees						
	6/30/2007	6/30/2010[a]	7.91%	$ 45,852	73.07%	$ -
	6/30/2007	6/30/2011[b]	6.74%	41,120	100.00%	-
	6/30/2009	6/30/2012	6.86%	44,235	100.00%	-
	6/30/2009	6/30/2013	6.86%	45,800	100.00%	-
	6/30/2011	6/30/2014	7.80%	49,072	100.00%	-
	6/30/2011	6/30/2015	7.80%	47,769	100.00%	-
	6/30/2013	6/30/2016	6.07%	40,709	100.00%	-
	6/30/2013	6/30/2017	6.07%	42,732	100.00%	-
	6/30/2015	6/30/2018	6.05%	42,265	100.00%	-
	6/30/2015	6/30/2019	6.05%			
	6/30/2017	6/30/2020	6.71%			
	6/30/2018	6/30/2021[c]	5.55%			
	6/30/2019	6/30/2022	5.33%			

[a] *Based on a discount rate of 3.566%.*
[b] *Based on a discount rate of 5.00%.*
[c] *Updated results after removal of liabilities associated with the ACA "Cadillac tax".*

Supplementary Information

Schedule of Employer Contributions
(Dollars in Thousands)

Valuation Date	Fiscal Year Ending	Annual Required Contribution	Annual OPEB Cost	Percentage of Annual OPEB Cost Contributed	Net OPEB Obligation
Teachers					
6/30/2007	6/30/2010[a]	$ 2,345	$ 2,345	100.00%	$ -
6/30/2007	6/30/2011[b]	1,338	2,333	100.00%	-
6/30/2009	6/30/2012	2,601	2,321	100.00%	-
6/30/2009	6/30/2013	2,601	2,321	100.00%	-
6/30/2011	6/30/2014	1,370	2,799	100.00%	-
6/30/2011	6/30/2015	1,370	2,799	100.00%	-
6/30/2013	6/30/2016	2,321	2,321	100.00%	-
6/30/2013	6/30/2017	2,321	2,321	100.00%	-
6/30/2015	6/30/2018	2,321	2,321	100.00%	-
6/30/2015	6/30/2019	2,321			
6/30/2017	6/30/2020	-			
6/30/2018	6/30/2021[c]	-			
6/30/2019	6/30/2022	-			
State Police					
6/30/2007	6/30/2010[a]	29.83%	$ 4,640	48.88%	$ 8,222
6/30/2007	6/30/2011[b]	25.67%	4,295	98.13%	8,302
6/30/2009	6/30/2012	33.18%	5,920	98.66%	8,381
6/30/2009	6/30/2013	33.18%	6,287	98.91%	8,450
6/30/2011	6/30/2014	39.00%	7,874	99.56%	8,485
6/30/2011	6/30/2015	39.00%	8,170	99.57%	8,520
6/30/2013	6/30/2016	33.39%	6,806	99.57%	8,503
6/30/2013	6/30/2017	33.39%	7,685	99.58%	8,486
6/30/2015	6/30/2018	34.89%	7,919	100.00%	-
6/30/2015	6/30/2019	34.89%			
6/30/2017	6/30/2020	29.65%			
6/30/2018	6/30/2021[c]	23.31%			
6/30/2019	6/30/2022	23.27%			
Board of Education					
6/30/2007	6/30/2010[a]	4.15%	$ 1,665	53.20%	$ -
6/30/2007	6/30/2011[b]	3.61%	2,869	100.00%	-
6/30/2009	6/30/2012	3.61%	2,884	100.00%	-
6/30/2009	6/30/2013	3.61%	3,106	100.00%	-
6/30/2011	6/30/2014	2.65%	3,095	100.00%	-
6/30/2011	6/30/2015	2.65%	3,011	100.00%	-
6/30/2013	6/30/2016	3.11%	3,558	100.00%	-
6/30/2013	6/30/2017	3.11%	3,932	100.00%	-
6/30/2015	6/30/2018	4.36%	5,490	100.00%	-
6/30/2015	6/30/2019	4.36%			
6/30/2017	6/30/2020	4.08%			
6/30/2018	6/30/2021[c]	2.93%			
6/30/2019	6/30/2022	3.50%			

[a] *Based on a discount rate of 3.566%.*
[b] *Based on a discount rate of 5.00%.*
[c] *Updated results after removal of liabilities associated with the ACA "Cadillac tax".*

APPENDIX A

OPEB SPECIFIC ASSUMPTIONS

OPEB Specific Assumptions

In any long-term actuarial valuation (such as for pensions and OPEB), certain demographic, economic and behavioral assumptions must be made concerning the population, investment discount rates, and the benefits provided. These actuarial assumptions form the basis for the actuarial model which is used to project the future population, benefits to be provided, and contributions to be collected. The investment return rate assumption is used to discount the future benefits to a present value on the valuation date. While assumptions such as future rates of retirement and mortality are similar for both OPEB and pension plans, there are some additional assumptions required when projecting benefits for a health care plan.

Health Care Cost Trend Assumption

The health care cost trend rate is the rate of change in per capita health care claims over time as a result of factors such as medical inflation, utilization of health care services, plan design, and technological improvements. It is a crucial economic assumption that is required for measuring retiree health care benefit obligations.

Retiree health care valuations use a health care cost trend assumption (trend vector) that changes over the years. The trend vector used in this valuation begins with a near-term trend assumption and declines over a time to an ultimate trend rate. The near-term rates reflect the increases in the current cost of health care goods and services. The process of trending down to a lower ultimate trend relies on the theory that premiums will moderate over the long- term, otherwise the healthcare sector would eventually consume the entire GDP. It is on this basis that we project premium rate increases will continue to exceed wage inflation for the next thirteen years, but by less each year until leveling off at an ultimate rate, assumed to be 3.50% in this valuation.

While experience is often the best starting point for future costs, GRS does not rely on a group's experience in setting the near-term trend assumptions since trends vary significantly from year to year and are not credible for most groups. Therefore, professional judgment, trends from GRS' book of business and industry benchmarks (e.g., trend reports from various Pharmacy Benefit Management (PBM) organizations and national healthcare benefit consulting firms) are used in conjunction with a group's historical experience to establish the trend assumptions.

Health care trend rates used in this valuation lie within a range of reasonable assumptions, and are described on page E-11 of this report. The health care trend rate assumption has a major effect on the calculation of plan liabilities.

APPENDIX B

GLOSSARY

Glossary

Accrued Service - The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability - The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability".

Actuarial Assumptions - Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision 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 future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method".

Actuarial Equivalent - A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value - The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarially Determined Employer Contribution (ADEC) - The ADEC is the normal cost plus the portion of the unfunded actuarial accrued liability to be amortized in the current period. The ADEC is an amount that is actuarially determined in accordance with the requirements so that, if paid on an ongoing basis, it would be expected to provide sufficient resources to fund both the normal cost for each year and the amortized unfunded liability.

Amortization - Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Governmental Accounting Standards Board (GASB) - GASB is the private, nonpartisan, nonprofit organization that works to create and improve the rules U.S. state and local governments follow when accounting for their finances and reporting them to the public.

Implicit Rate Subsidy – It is a common practice for employers to allow retirees to continue in the employers group health insurance plan (which also covers active employees), often charging the retiree some portion of the premium charged for active employees. Under the theory that retirees have higher utilization of services, the difference between the true cost of providing retiree coverage and what the retiree is being charged is known as the implicit rate subsidy.

Glossary (Concluded)

Medical Trend Rate (Health Care Inflation) - The increase in the cost of providing health care benefits over time. Trend includes such elements as pure price inflation, changes in utilization, advances in medical technology, and cost shifting.

Normal Cost - The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost". Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Other Postemployment Employee Benefits (OPEB) - OPEB are postemployment benefits other than pensions. OPEB generally takes the form of health insurance and dental, vision, prescription drugs or other health care benefits.

Reserve Account - An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability - The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability".

Valuation Assets - The value of current plan assets recognized for valuation purposes.