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February 27, 2017

Ms. Peggy G. Boykin, CPA
Executive Director
South Carolina Public Employee Benefit Authority
202 Arbor Lake Drive
Columbia, SC 29223

Re: Analysis of Proposed Legislation Senate 394 (H. 3726) and its Financial Impact on SCRS and PORS (Funding Reform Legislation)

Dear Peggy:

We have reviewed and analyzed Senate 394 (H. 3726). If enacted, this proposed legislation will change future member and employer contribution rats as well as require that the unfunded liabilities of the system satisfy a certain funding period. Additionally, the legislation would decrease the assumed rate of return to 7.25% at July 1, 2021 and modify the process for establishing the assumed rate of return in future years.

The proposed legislation also makes several other changes and new requirements for PEBA and the investment commission, but we will limit our comments to the items that have a fiscal impact on the Retirement Systems. For completeness, the proposed legislation has a fiscal impact in the sense that it will increase the employer contribution rates, but does not have a fiscal cost in the sense that the proposed legislation does not modify the benefits provided to the members in SCRS and PORS.

Background

The PEBA Board has adopted a 0.50% of pay increase to the member and employer contribution rates (i.e. contribution rates for fiscal year 2016-2017 and 2017-2018) for SCRS and PORS when they adopted each of the last two actuarial valuations. These contribution rate increases are the maximum contribution increase currently permitted by State Code. Current State Code also requires that Board increase member and employer contribution rates in equal amounts and maintain those contribution rates until the plan attains a 90% funded ratio. Absent favorable investment or liability experience it is likely that GRS, as the actuaries to the PEBA, will recommend the Board to increase the member and employer contribution rates for the next several years to further improve the financial condition of the retirement system.

Summary of Cost Impact

This proposed legislation will require increased contributions from employers and limit the member contribution rate at 9.00% for members in SCRS and 9.75% for members in PORS. Since we cannot quantify with certainty the discretionary contribution rate increases the Board will enact in future years, we have modeled the fiscal impact of this legislation assuming, the Board would adopt future contribution rate increases only to the extent required by law, which is to maintain the required funding period. Stated another way, the fiscal impact shown below is the greatest potential fiscal impact of the proposed legislation, with the actual fiscal impact likely being less than this amount.

Exhibit 1.
10-Year Projection of Member and Employer Contributions for SCRS
Based on Current Law and Current 7.50% Return Assumption
and the Proposed Legislation with a 7.25% Return Assumption
($ in Millions)

Fiscal Year Ending June 30,	Scenario 1. Current Funding Law 7.50% Discount Rate				Scenario 2. Proposed Funding Law 7.25% Discount Rate			
	Member		Employer		Member		Employer	
	Rate	Amount	Rate	Amount	Rate	Amount	Rate	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2018	9.16%	$868	12.06%	$1,247	9.00%	$852	13.56%	$1,411
2019	9.16%	876	12.06%	1,266	9.00%	861	14.56%	1,545
2020	9.37%	917	12.27%	1,325	9.00%	881	15.56%	1,703
2021	9.66%	968	12.56%	1,397	9.00%	902	16.56%	1,871
2022	9.92%	1,018	12.82%	1,468	9.00%	923	17.56%	2,048
2023	9.99%	1,048	12.89%	1,518	9.00%	944	18.56%	2,231
2024	9.99%	1,071	12.89%	1,559	9.00%	965	18.56%	2,294
2025	9.99%	1,095	12.89%	1,602	9.00%	986	18.56%	2,359
2026	9.99%	1,119	12.89%	1,645	9.00%	1,008	18.56%	2,425
2027	9.99%	1,142	12.89%	1,689	9.00%	1,029	18.56%	2,493
Total		$10,122		$14,716		$9,351		$20,380

Note: Projected contributions assume no investment gains or losses on the market value of assets in future years.

As a result of the increased contributions specified in the proposed legislation (i.e. Scenario 2.), the projected unfunded actuarial accrued liability in the year 2027 is $20.2B, the funded ratio is 67%, and the funding period is 10 years. This compares to a projected unfunded liability of $24.8B, a funded ratio is 59% and a 23 year funding period in the year 2027 for Scenario 1., where the contribution rates after the 2017-2018 fiscal year are only increased to maintain a funding period that does not exceed 30 years.

The following exhibit provides the similar projection information for PORS.

Exhibit 2.
10-Year Projection of Member and Employer Contributions for PORS
Based on Current Law and Current 7.50% Return Assumption
and the Proposed Legislation with a 7.25% Return Assumption
($ in Millions)

Fiscal Year Ending June 30,	Scenario 1. Current Funding Law 7.50% Discount Rate				Scenario 2. Proposed Funding Law 7.25% Discount Rate			
	Member		Employer		Member		Employer	
	Rate	Amount	Rate	Amount	Rate	Amount	Rate	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2018	9.74%	$131	14.74%	$198	9.75%	$131	16.24%	$218
2019	9.74%	134	14.74%	203	9.75%	134	17.24%	237
2020	9.74%	138	14.74%	208	9.75%	138	18.24%	258
2021	9.86%	143	14.86%	215	9.75%	141	19.24%	278
2022	10.11%	150	15.11%	224	9.75%	145	20.24%	300
2023	10.22%	156	15.22%	232	9.75%	148	21.24%	323
2024	10.22%	160	15.22%	238	9.75%	152	21.24%	332
2025	10.22%	164	15.22%	245	9.75%	157	21.24%	341
2026	10.22%	169	15.22%	251	9.75%	161	21.24%	351
2027	10.22%	174	15.22%	259	9.75%	166	21.24%	361
Total		$1,519		$2,273		$1,473		$2,999

Note: Projected contributions assume no investment gains or losses on the market value of assets in future years.

As a result of the increased contributions in the proposed legislation, Scenario 2., the projected unfunded actuarial accrued liability in the year 2027 is $2.5B, the funded ratio is 76%, and the funding period is 10 years. This compares to a projected unfunded liability of $3.0B, a funded ratio is 70% and a 22 year funding period in the year 2027 for Scenario 1., where the contribution rates after the 2017-2018 fiscal year are only increased to maintain a funding period that does not exceed 30 years.

Attached are exhibits showing a ten-year projection of the unfunded liability, funded ratio, and funding period for SCRS and PORS under the proposed legislation. We have also included a projection under a pessimistic scenario to quantify the financial effect if the Systems incurs some adverse investment return experience over the next few years and the assumed rate of return is decreased to 7.00%. For reference, this pessimistic scenario is Scenario 5b Alt 1 that was provided to the Joint Committee on Pensions Systems when considering legislation changes.

Provisions of Proposed Legislation

Below is a summary of the provisions in the pension reform bill that have a fiscal impact on the retirement system.

Employer and Member Contribution Rates: The employer contribution rate for SCRS will increase from the 12.06% of pay that the PEBA Board approved to be in effect at July 1, 2017 to 13.56% of pay, with a 1.00% increase in the employer rate for each of the five subsequent fiscal years (i.e. an ultimate employer contribution rate of 18.56% of pay beginning July 1, 2022). The member contribution rate scheduled to be in effect on July 1, 2017 will decrease from 9.16% of pay to 9.00% of pay and remain constant in future years.

Similarly, the employer contribution rate for PORS will increase from the 14.74% of pay that the PEBA Board approved to be in effect at July 1, 2017 to 16.24% of pay, with a 1.00% increase in the employer rate for each of the five subsequent fiscal years (i.e. an ultimate employer contribution rate of 21.24% of pay beginning July 1, 2022). The member contribution rate will slightly change from the 9.74% of pay schedule to be in effect on July 1, 2017 to 9.75% of pay and remain constant in future years.

In years when the General Assembly provides direct appropriations to the System, the applicable employer contribution rates will be adjusted such that the total of the employer contributions plus the direct appropriation is equivalent to the otherwise expected contributions based on the scheduled employer contribution rate. After June 30, 2027, the Board may decrease the employer and member contribution rates in equal amounts if the ratio of the actuarial value of assets to the actuarial accrued liability is equal to or exceeds 85%.

Maintenance of a Certain Amortization Schedule: The scheduled contribution rates must be further increased if they are not sufficient to amortize the unfunded actuarial accrued liability for SCRS and PORS over 30 years as of July 1, 2017. The maximum amortization period will decrease by one year in each of the next ten years until reaching a maximum 20-year funding period on July 1, 2027. The contribution rates must be sufficient such that the funding period does not exceed 20 years each year thereafter.

Assumed Rate of Return: Effective July 1, 2017, the assumed annual rate of return on investments would decrease from 7.50% to 7.25%. The investment return assumption will be reviewed and reestablished every four years thereafter with the Board submitting a proposed assumed return assumption to the General Assembly by the January 1 of the year the return assumption is due to expire. If the General Assembly does not take action on the assumed rate of return before the current investment return assumption expires, then the proposed assumed annual rate of return takes effect until subsequent action by the General Assembly.

The General Assembly may want to consider having a process to review the return assumption more to identify the possible need for a change in the return assumption due to a material changes in the Investment Commission’s investment strategy.

GRS Comments on Proposed Legislation

Employer and Member Contribution Rates

In response to investment losses (i.e. the difference in the assumed rate of return and the plan's actual investment performance) and the adoption of updated actuarial assumptions that were recommended by the System's actuary, the PEBA Board has adopted 0.50% of pay increases to the employer and member contribution rates, the maximum amount permitted by current State Statutes, for each of the last two actuarial valuations. It is likely that we, as the actuaries for PEBA, will recommend that the Board increase contribution rates for the next several years as permitted by current state law. The proposed total increase to the employer and member contribution rates are greater than maximum amount currently allowed for the 2017-2018 fiscal year, and the scheduled increases in each of the next five fiscal years are roughly equal to the maximum amount the State Code currently permits the Board. However, having the contribution rates as a schedule in the State Code provides increased transparency for all stakeholders and employers can better plan and budget for the cost.

As the member contribution rate increases, two items become noticeable. Due to the refund provision, it is less efficient to fund the retirement system with member contributions because the increased member contributions result in larger refund benefits rather than remain in the plan to finance the unfunded actuarial accrued liability. Prior analysis has shown that, in aggregate, 20% of member contributions are returning back to members in the form of a refund benefit. The proposed maximum member contribution rates still have the members financing a meaningful portion of their retirement benefit, but limiting the cost-sharing will slightly increase the efficiency of funding of the unfunded actuarial accrued liability.

Second, the member contribution rate in SCRS is increasing to a level that is relatively close to the plan's normal cost rate, which is the theoretical aggregate cost, as a percentage of pay, of the benefits provided by the system. While there are a few statewide retirement systems that require members to contribute a higher amount than members in SCRS, and the contribution rates in those systems exceed the System's normal cost rate, the topic becomes an increasingly important policy question as to how much should members contribute to finance their retirement benefit. As of the July 1, 2016 actuarial valuation, the normal cost rate was 10.27% for SCRS and 14.02% for PORS (the cost is greater for PORS because of a higher benefit multiplier and different retirement eligibility provisions).

The proposed legislation also permits the Board to decrease the contribution rates after the System attains an 85% funded ratio (i.e. the ratio of the actuarial value of assets to the actuarial accrued liability) provides a mechanism for the Board to develop a glide path into a lower, long-term, contribution rate. Note, the proposed legislation specifies that the employer and member contribution rates decrease in equal amounts. For SCRS, this would presumably be from a starting point of 18.56% employer and 9.00% member contribution rate. As the contribution rates decrease in equal amounts, the members could approach 0.00% as the plan attains a 100% funded ratio. While this is a policy matter, stakeholders may wish to consider adding a minimum member contribution rate if the stakeholders wish to maintain a certain level of cost sharing for the members.

Maintenance of a certain amortization schedule

Currently the funding period for SCRS and PORS cannot exceed 30 years. SCRS and PORS do not have an ”open funding period” because the contribution rates for SCRS and PORS are not permitted to decrease when the current contribution rates result in a funding period that is less than 30 years. On the other hand, the current funding policy is not considered to have a “closed funding period” because state law does not require the contribution rates to increase so that the funding period decreases by exactly one year in each subsequent actuarial valuation. Rather the current funding rules in the state law permit the funding period to “vary” from year to year, but not exceed 30 years.

The proposed legislation includes a new provision that will require the maximum funding period to gradually decrease each subsequent valuation and be no more than 20 years by the year 2027. This provision provides additional strength to the funding policy in that employer contribution rates will need to further increase if the plan experiences adverse investment experience or assumption changes which result in higher funding periods.

For clarity to stakeholders, the funding period is equal to the number of years it will take to eliminate the unfunded actuarial accrued liability (determined on an actuarial asset value, not the market value of assets) if the following year’s contribution rate is maintained each future year. This calculation also assumes there are not any future investment or liability gains or losses in subsequent actuarial valuations (i.e. current deferred investment gains or losses will be offset by future investment experience). The calculation of the funding period does not recognize any increases in the employer and member contribution rates that are scheduled to become effective in years beyond the following year. Also, this calculation method does not consider the difference between the actuarial value of assets and the market value of assets at the valuation date. As a result, the funding period in subsequent years can increase or decrease more than expected due to the recognition of deferred investment losses from prior years or as contribution rates change.

Assumed Rate of Return

The assumed rate of return will decrease to 7.25%, the assumption we recommended in our 2016 experience study report if the General Assembly wished to advance recognize approximately 0.25% in annual return attributable to a portable alpha investment strategy. Importantly, changes include a review process and provide direction if the General Assembly does not enact legislation when the applicable assumed rate of return expires.

The change in the assumed rate of return will also be applicable to the actuarial valuations of the other three retirement systems maintained by PEBA (Retirement System for Judges and Solicitors, Retirement System for Members of the General Assembly, and the Supplemental Retirement Plan for Members in the National Guard).

Basis of Calculations

GRS based the calculations and analysis in this letter on the member and financial data provided by PEBA and used to perform the actuarial valuation as of July 1, 2016. Except where noted otherwise, the projections assume no actuarial gains or losses will occur in the future, and that members will terminate, retire, become disabled, or die as predicted by the actuarial assumptions. The size of the active member population is assumed to remain constant, with each member who leaves the active population being replaced by a new member. These projections also do not reflect the actual investment experience of the retirement system after the measurement date of July 1, 2016.

General Comments

Our calculations are based upon assumptions regarding future events, which may or may not materialize. Depending on actual plan experience, actual results could deviate significantly from our projections.

We are not attorneys, and we cannot provide a legal opinion regarding the changes in this proposed legislation. Nothing in this letter should be construed as providing legal, investment or tax advice. It may be prudent to consult with the Retirement System's counsel before enacting any such changes. Finally, no statement in this letter is intended to be interpreted as a recommendation in favor of or in opposition to the changes studied herein.

We certify that the undersigned are members of the American Academy of Actuaries and that we meet all of the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. In addition, both of the undersigned are experienced in performing valuations for large public retirement systems. If you have any questions, or require any additional or clarifying information, please do not hesitate to contact either of us.

Sincerely,

Daniel J. White, FSA, MAAA, EA
Senior Consultant

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

Enclosure

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South Carolina Retirement System (SCRS)

Projected Unfunded Liability, Funded Ratio, and Funding Period
Based on Contribution Rates Specified in Proposed Legislation Bill Senate 394 (H 3726)
($ in millions)

	Proposed Scheduled Contribution Rates		Proposed	Baseline Scenario for Fiscal Cost (Exhibit 1. Scenario 2 in Impact Letter)			Alternative Pessimistic Scenario (Scenario 5.b. Alt 1 Provided to Joint Committee)		
July 1,	Employer	Member	Max Funding Period	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2016	11.56%	8.66%	30	$ 18,566	60%	23	$ 18,566	60%	23
2017	13.56%	9.00%	30	21,208	56%	25	21,372	56%	25
2018	14.56%	9.00%	29	22,436	54%	23	22,976	53%	24
2019	15.56%	9.00%	28	23,603	53%	21	26,105	49%	26
2020	16.56%	9.00%	27	24,066	53%	19	27,441	48%	24
2021	17.56%	9.00%	26	23,958	55%	17	28,417	48%	22
2022	18.56%	9.00%	25	23,661	56%	16	29,116	48%	21
2023	18.56%	9.00%	24	23,286	58%	15	29,617	48%	21
2024	18.56%	9.00%	23	22,692	60%	14	29,782	49%	20
2025	18.56%	9.00%	22	21,991	62%	12	29,737	50%	19
2026	18.56%	9.00%	21	21,177	64%	11	29,475	52%	18
2027	18.56%	9.00%	20	20,237	67%	10	29,129	53%	17

Baseline scenario for fiscal cost: The investment return assumption is 7.25% for 2017 and each year thereafter. The emerging investment experience is assumed to be 7.25% per year for each future year.

Alternative pessimistic scenario: The investment return assumption is 7.25% for 2017 and 2018, and 7.00% for 2019 and each year thereafter. The emerging investment experience is assumed to be 4.00% per year for 2017 through 2021 and 7.00% per year for each thereafter.

Projection information is based on the July 1, 2016 actuarial valuation. This information is provided for stakeholders to understand the financial impact based on the illustrated assumptions and emerging investment experience for decision making purposes.

Police Officers Retirement System (PORS)

Projected Unfunded Liability, Funded Ratio, and Funding Period
Based on Contribution Rates Specified in Proposed Legislation Bill Senate 394 (H 3726)
($ in millions)

				Baseline Scenario for Fiscal Cost (Exhibit 2. Scenario 2 in Impact Letter)			Alternative Pessimistic Scenario (Scenario 5.b. Alt 1 Provided to Joint Committee)		
	Proposed Scheduled Contribution Rates		Proposed Max Funding	Unfunded	Funded Ratio	Funding	Unfunded	Funded Ratio	Funding
July 1,	Employer	Member	Period	Liability	AVA / AAL	Period (years)	Liability	AVA / AAL	Period (years)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2016	14.24%	9.24%	30	$ 2,213	66%	20	$ 2,213	66%	20
2017	16.24%	9.75%	30	2,610	63%	23	2,637	63%	24
2018	17.24%	9.75%	29	2,783	62%	22	2,872	61%	23
2019	18.24%	9.75%	28	2,905	62%	20	3,325	58%	26
2020	19.24%	9.75%	27	2,970	62%	18	3,543	56%	25
2021	20.24%	9.75%	26	2,953	64%	16	3,716	56%	23
2022	21.24%	9.75%	25	2,914	66%	15	3,855	56%	24
2023	21.24%	9.75%	24	2,851	68%	14	3,950	57%	23
2024	21.24%	9.75%	23	2,776	70%	13	4,014	57%	23
2025	21.24%	9.75%	22	2,688	72%	12	4,045	59%	22
2026	21.24%	9.75%	21	2,585	74%	11	4,042	60%	21
2027	21.24%	9.75%	20	2,465	76%	10	4,030	61%	20

Baseline scenario for fiscal cost: The investment return assumption is 7.25% for 2017 and each year thereafter. The emerging investment experience is assumed to be 7.25% per year for each future year.

Alternative pessimistic scenario: The investment return assumption is 7.25% for 2017 and 2018, and 7.00% for 2019 and each year thereafter. The emerging investment experience is assumed to be 4.00% per year for 2017 through 2021 and 7.00% per year for each thereafter.

Projection information is based on the July 1, 2016 actuarial valuation. This information is provided for stakeholders to understand the financial impact based on the illustrated assumptions and emerging investment experience for decision making purposes.