south carolina peba
state health plan | retirement systems

Serving those who serve South Carolina

Meeting Agenda | Board of Directors- Strategic Planning Retreat

Wednesday, November 30, 2016 | 9:00am. - 5:00pm.
Nexsen Pruet |1230 Main Street Suite 700 Columbia, SC 29201

Educational Program Session

I.	Call to Order	9:00am
II.	Adoption of Proposed Agenda	
III.	Executive Session for Purpose of Receiving Legal Advice Pursuant to S.C. Code of Laws § 30-4-70 (a)(2).	9:05am
IV.	Gabriel Roeder Smith & Company 1. 2015 OPEB Valuations 2. 2016 Retirement Valuations	9:35am
V.	RSIC Report on Investments	11:15am
	Lunch	12:00pm
VI.	State Health Plan 1. Rally Update 2. Telehealth Update	12:30pm
VII.	Fiduciary Education- Ice Miller	1:30pm
VIII.	Strategic Planning	2:30pm
IX.	Ethics Training	3:30pm
X.	Adjournment	5:00pm

Notice of Public Meeting
This notice is given to meet the requirements of the S.C. Freedom of Information Act and the Americans with Disabilities Act. Furthermore, this facility is accessible to individuals with disabilities, and special accommodations will be provided if requested in advance.

PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
BOARD RETREAT

Meeting Date: November 30, 2016

---

1. **Subject:** 2015 OPEB Valuations

---

2. **Summary:** 2015 OPEB Valuations

Background Information: Mr. Danny White and Mr. Joe Newton from Gabriel Roeder Smith & Company will review the 2015 OPEB Valuations.

3. What is the Board asked to do? Receive as information

---

4. **Supporting Documents:**

(a) List those attached:
1. 2015 OPEB Actuarial Valuation of Upcoming Accounting Changes

State of South Carolina OPEB Valuation

2015 Actuarial Valuation and Upcoming Accounting Changes

GRS
Gabriel Roeder Smith & Company
Consultants & Actuaries
www.gabrielroeder.com

Copyright © 2016 GRS – All rights reserved.

Current Plan Benefit

- 2016 medical premiums for funded retirees:

	Total Premium	Employer's Portion	Retiree's Portion
Retiree Only	$457.78	$360.10	$97.68
Retiree + Spouse	$966.62	$713.26	$253.36

- Premiums shown are for the most common plan choices (Standard Plan and the Medicare Supplement)
- Employee's hired before May 2, 2008 are eligible for funded premiums after 10 years of service.
  - 80% participation for funded retirees
- Employee's hired on or after May 2, 2008 are eligible for funded premiums if they have at least 25 years of service.
  - Partial funded premium for service between 15 and 24 years.

GRS

Current Funding Policy

- Employer surcharge is designed to cover the employer's share of the premiums for the current fiscal year
  - 5.33% of payroll for FY17
- Additional State appropriations and transfers above 140% of IBNR

Fiscal Year End	Amount
2016	$24M
2015	176M
2014	96M
2013	67M
2012	106M

2015 Valuation Results
Current Funding Policy ($millions)

	2015	2014	2013
Discount Rate	5.50%	5.50%	5.50%
Actuarial Accrued Liability	$10,824	$10,124	$10,073
Actuarial Value of Assets	$964	$785	$669
Unfunded Actuarial Accrued Liability (UAAL)	$9,860	$9,339	$9,404
Funded Ratio	8.9%	7.8%	6.6%
Annual Required Contribution	$796	$750	$748
ARC per active member ($)	$4,430	$4,243	$4,292
Total ARC as a % of Payroll	9.4%	9.1%	9.7%

Increase in UAAL primarily due to insufficient funding.

GRS

Impact of New Accounting Standard GASB 74 (effective June 30, 2017)

	No Prefund	Current Assump	Fully Prefund
	(1)	(2)	(3)
Discount Rate	3.50%	5.50%	7.00%
Actuarial Accrued Liability	$14,114	$10,824	$8,896
Actuarial Value of Assets	$964	$964	$964
Unfunded Actuarial Accrued Liability	$13,150	$9,860	$7,932
UAAL as % of Payroll	166%	125%	100%
Funded Ratio	6.8%	8.9%	10.8%
30-year ARC	11.9%	9.4%	8.1%

- Blended discount rate will be slightly higher than the municipal bond index due to some prefunding. Municipal bond rate at September 2016 was 3.1%.
- All participating employers will recognize a share of the unfunded starting in FYE18.

GRS

Estimated Cash Cost

- Historical and expected employer surcharge based on current funding:

FYE	Surcharge
2011	3.90%
2012	4.30%
2013	4.55%
2014	4.92%
2015	5.00%
2016	5.33%
2017	5.33%

FYE	Surcharge
2018	5.81%
2019	6.03%
2020	6.21%
2021	6.36%
2022	6.49%
2023	6.61%
2024	6.70%

- 30-year ARC as % of payroll is 8.1% assuming a 7.0% discount rate

GRS

Disclaimers

- This presentation is intended to be used in conjunction with the 2015 actuarial valuation report. This presentation should not be relied on for any purpose other than the purpose described in the valuation report.
- This presentation shall not be construed to provide tax advice, legal advice or investment advice.

PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
BOARD RETREAT

Meeting Date: November 30, 2016

---

1. **Subject:** 2016 Retirement Valuations

---

2. **Summary:** 2016 Retirement Valuations

Background Information: Mr. Danny White and Mr. Joe Newton from Gabriel Roeder Smith & Company will review the 2016 Retirement Valuations and accompanying scenarios.

3. **What is the Board asked to do?** Receive as information and defer action on contribution increases.

---

4. **Supporting Documents:**

   (a) List those attached:
      1. Actuarial Valuation 2016 Presentation
      2. SCRS Projections
      3. PORS Projections
      4. SCRS Actuarial Valuation Report as of July 1, 2016
      5. PORS Actuarial Valuation Report as of July 1, 2016
      6. GARS Actuarial Valuation Report as of July 1, 2016
      7. JSRS Actuarial Valuation Report as of July 1, 2016
      8. SCNG Actuarial Valuation Report as of July 1, 2016

South Carolina Retirement Systems

Actuarial Valuation as of July 1, 2016

Joe Newton and Danny White

November 30, 2016

GRS

Gabriel Roeder Smith & Company
Consultants & Actuaries
www.gabrielroeder.com

Copyright © 2016 GRS – All rights reserved.

Summary of Changes Since the Prior Valuation

- The actuarial assumptions adopted by PEBA and approved by SFAA have been incorporated in the 2016 valuation
  - Investment return assumption is prescribed by the General Assembly and remains unchanged at 7.50%
- The FY 2016 investment return, determined in accordance with GASB 67, was -0.47%
  - \$2.0B less in assets than expected (-\$0.2B actual return versus \$1.8B expected return for SCRS)
- There were no changes to benefit provisions since the prior valuation

GRS

Summary of July 1, 2016 Valuation Results – SCRS and PORS

Item	SCRS 2016	SCRS 2015	PORS 2016	PORS 2015
(1)	(2)	(3)	(4)	(5)
Actuarial accrued liability	$45,860	$44,119	$6,567	$6,162
Actuarial (smoothed) value assets	27,294	27,366	4,359	4,267
Unfunded liability (UAAL)	$18,566	$16,753	$2,208	$1,895
Funded ratio	60%	62%	66%	69%
Member contribution rate	9.09%	8.19%[1]	9.28%	8.74%[1]
Employer contribution rate	11.99%	11.09%[1]	14.28%	13.74%[1]
Total contribution rate	21.08%	19.28%[1]	22.48%	22.48%[1]
Amortization period	30 Years	30 Years	30 Years	27 Years
Expected contributions				
Member	$889	$752	$129	$113
Employer	1,275	1,104	198	177

[1] Effective July 1, 2016, the Board approved to increase the employer and member contribution rates for SCRS to 11.56% and 8.66%, respectively, and the employer and member rates for PORS to 14.24% and 9.24%, respectively.

GRS

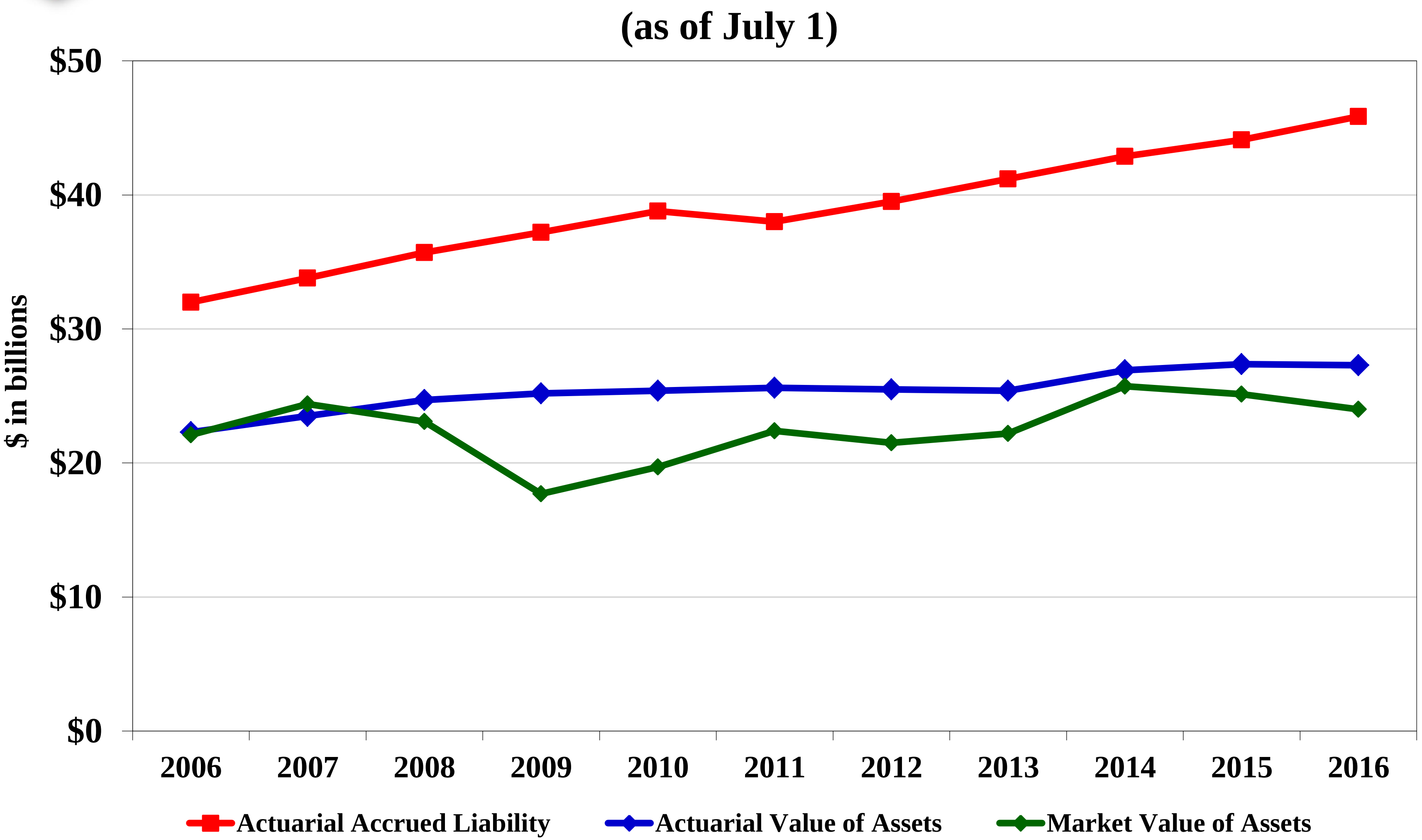
Summary of July 1, 2016 Valuation Results – Other Systems

	JSRS		GARS		SCNG	
Item	2016	2015	2016	2015	2016	2015
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Actuarial accrued liability	$283	$270	$75	$74	$64	$62
Actuarial (smoothed) value assets	159	158	36	37	27	26
Unfunded liability (UAAL)	$124	$112	$39	$37	$37	$36
Funded ratio	56%	59%	48%	50%	42%	41%
Member contribution rate	10.00%	10.00%	11.0%	11.0%	$0.0	$0.0
Employer contribution rate	49.42%	47.97%	$5.4	$4.8	4.8	4.5
Amortization period	30 Years	27 Years	11 Years	12 Years	17 Years	17 Years
Expected contributions						
Member	$2.3	$2.3	$0.2	$0.3	$0.0	$0.0
Employer	11.5	10.8	5.4	4.8	4.8	4.5

$ in millions

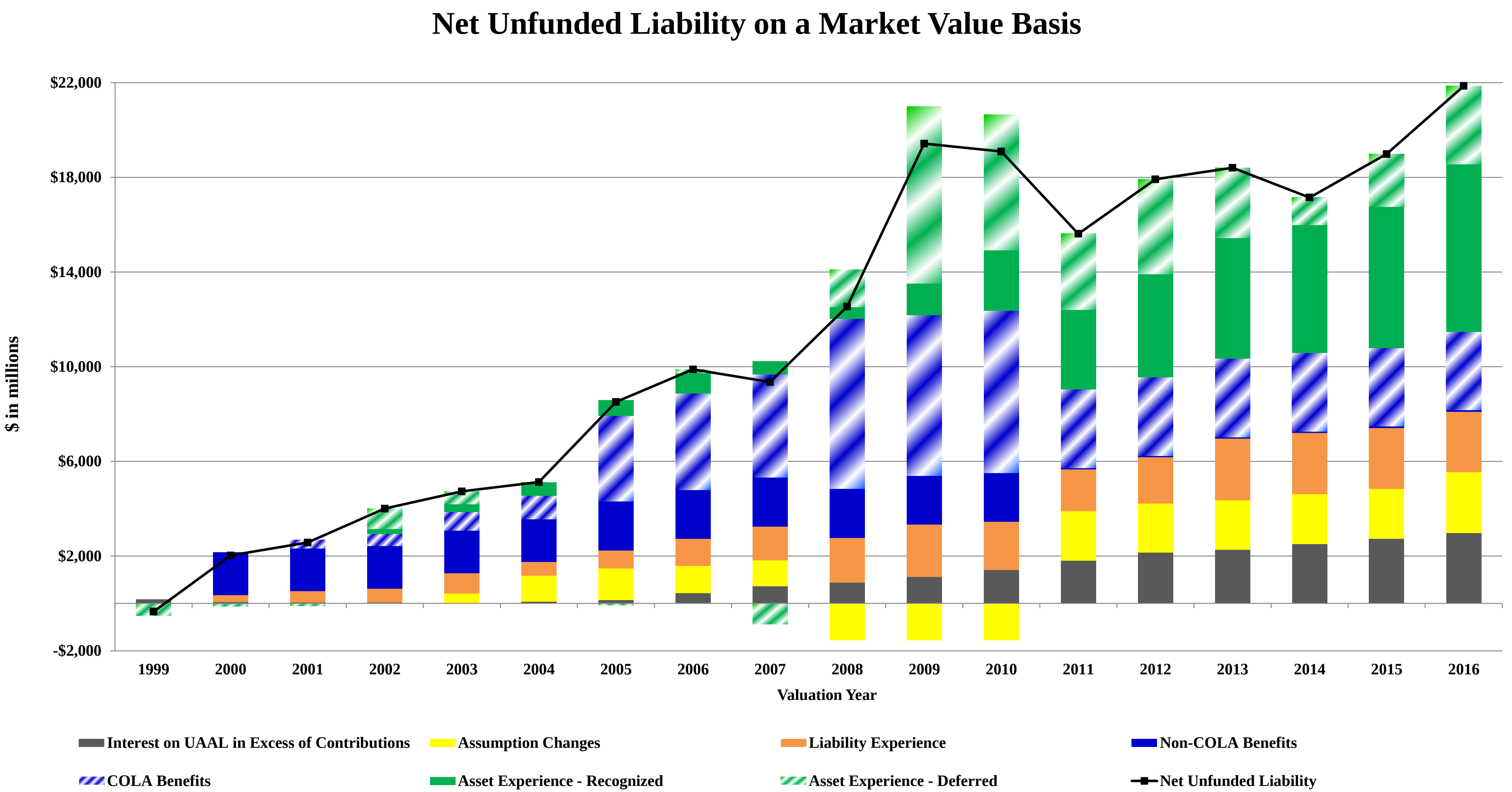
GRS

Liability and Assets - SCRS



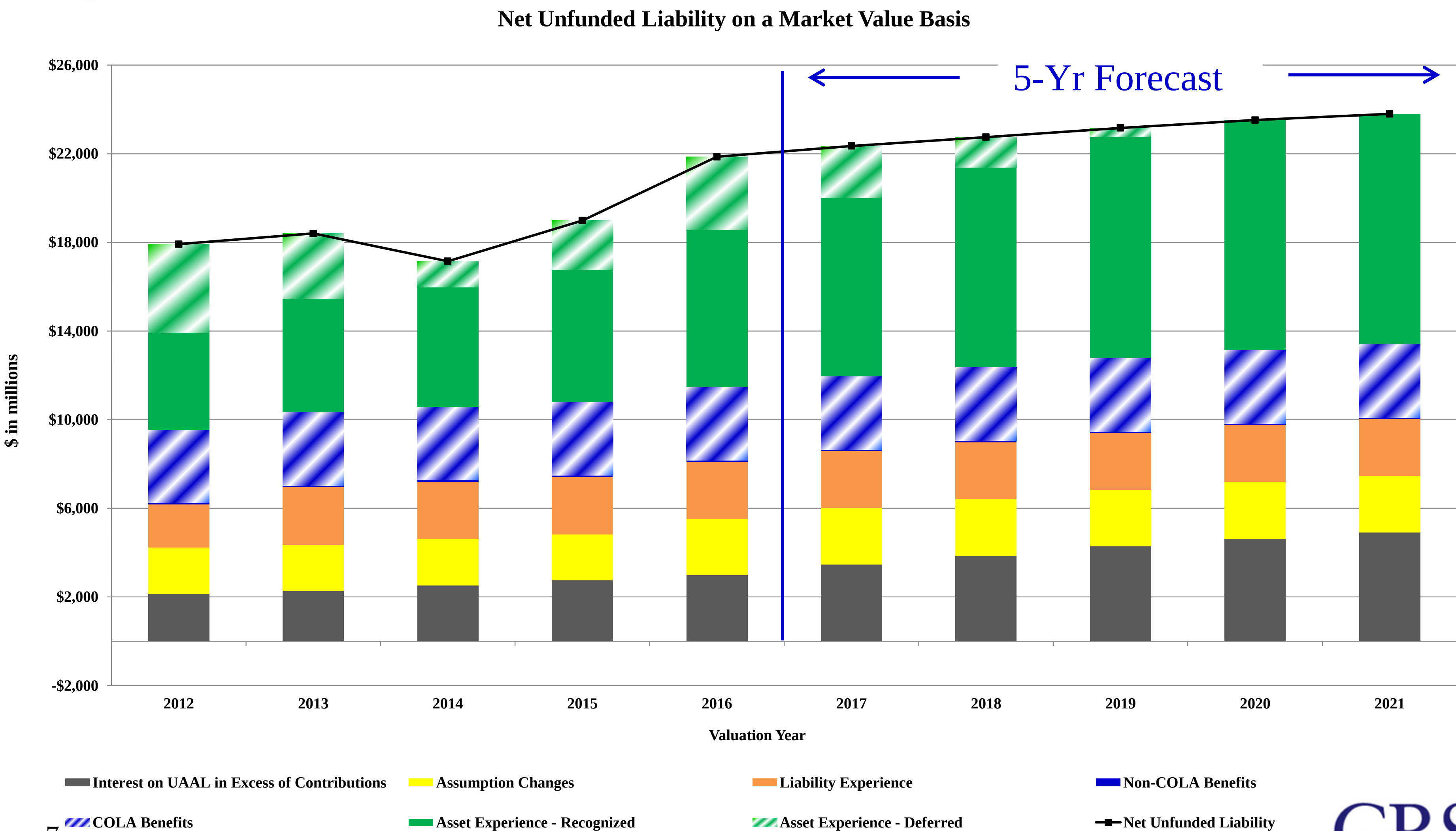
GRS

Source of Unfunded Liability - SCRS



GRS

Projected Unfunded Liability – SCRS



GRS

Funding Considerations

- Please Refer to Attached Exhibits

Disclaimers

- This presentation is intended to be used in conjunction with the actuarial valuations as of July 1, 2016. This presentation should not be relied on for any purpose other than the purpose described in the valuation report.
- This presentation shall not be construed to provide tax advice, legal advice or investment advice.

South Carolina Retirement System (SCRS)

Comparison of Key Financial Measures of Scenarios 1., 2a., and 3a.

	Employer Contribution Rate			Unfunded Liability ($ in Millions)			Funding Period (Years)		
Return Assumption:	**7.50%**	**7.25%**	**7.00%**	**7.50%**	**7.25%**	**7.00%**	**7.50%**	**7.25%**	**7.00%**
Scearnio:	**1.**	**2a.**	**3a.**	**1.**	**2a.**	**3a.**	**1.**	**2a.**	**3a.**
July 1,	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2016	11.56%	11.56%	14.24%	$ 18,566	$ 18,566	$ 18,566	30	27	21
2017	11.56%	12.56%	16.75%	20,018	21,208	21,208	30	28	22
2018	12.06%	13.56%	17.75%	21,465	22,550	22,358	30	26	22
2019	12.57%	14.56%	18.75%	22,890	23,841	23,440	30	24	21
2020	13.16%	15.56%	19.75%	23,694	24,440	25,211	30	21	19
2021	13.65%	16.56%	20.75%	24,004	24,481	25,094	29	20	21
2022	13.77%	16.56%	20.75%	24,231	24,349	24,788	27	19	20
2023	13.77%	16.56%	20.75%	24,419	24,154	24,533	27	18	19
2024	13.77%	16.56%	20.75%	24,580	23,892	24,206	26	17	18
2025	13.77%	16.56%	20.75%	24,713	23,555	23,799	25	16	17
2026	13.77%	16.56%	20.75%	24,815	23,139	23,308	24	15	16
2027	13.77%	16.56%	20.75%	24,883	22,635	22,722	23	14	15

Notes and Assumptions

Scenario 1. - 7.50% return assumption
Scenario 2a. - 7.25% return assumption for 2017 and thereafter.
Scenario 3a. - 7.25% return assumption for 2017 through 2019, 7.00% for 2020 and thereafter.
Emerging investment experience is the same as the return assumption for all future years.
The member contribution rate is capped at 9.00% under all scenarios.
Contribution rates are increased in an orderly manner to attain a 20-year funding period and are assumed to be maintained in future years.

South Carolina Retirement System (SCRS)

Financial Impact if Emerging Investment Returns are 4.00% per Year for FY 2017 through FY 2021

	Employer Contribution Rate		Unfunded Liability ($ in Millions)		Funding Period (Years)	
Return Assumption:	**7.25%**		**7.25%**		**7.25%**	
Scearnio:	**2a.**	**2b.**	**2a.**	**2b.**	**2a.**	**2b.**
July 1,	(1)	(2)	(5)	(6)	(9)	(10)
2016	11.56%	11.56%	$ 18,566	$ 18,566	27	27
2017	12.56%	12.56%	21,208	21,372	28	29
2018	13.56%	13.56%	22,550	23,089	26	28
2019	14.56%	14.56%	23,841	24,964	24	26
2020	15.56%	15.56%	24,440	26,359	21	24
2021	16.56%	16.56%	24,481	27,416	20	22
2022	16.56%	17.56%	24,349	28,208	19	20
2023	16.56%	18.56%	24,154	28,679	18	20
2024	16.56%	18.56%	23,892	28,810	17	19
2025	16.56%	18.56%	23,555	28,716	16	18
2026	16.56%	18.56%	23,139	28,389	15	17
2027	16.56%	18.56%	22,635	27,972	14	16

	Employer Contribution Rate		Unfunded Liability ($ in Millions)		Funding Period (Years)	
Return Assumption:	**7.00%**		**7.00%**		**7.00%**	
Scearnio:	**3a.**	**3b.**	**3a.**	**3b.**	**3a.**	**3b.**
July 1,	(3)	(4)	(7)	(8)	(11)	(12)
2016	14.24%	14.24%	$ 18,566	$ 18,566	21	21
2017	16.75%	16.75%	21,208	21,372	22	22
2018	17.75%	17.75%	22,358	22,898	22	22
2019	18.75%	18.75%	23,440	24,566	21	21
2020	19.75%	19.75%	25,211	27,140	19	21
2021	20.75%	20.75%	25,094	28,031	21	22
2022	20.75%	21.75%	24,788	28,634	20	21
2023	20.75%	22.75%	24,533	28,899	19	21
2024	20.75%	22.75%	24,206	28,802	18	20
2025	20.75%	22.75%	23,799	28,457	17	19
2026	20.75%	22.75%	23,308	27,865	16	17
2027	20.75%	22.75%	22,722	27,159	15	16

Notes and Assumptions

Scenario 2a. and 2b. - 7.25% return assumption for 2017 and thereafter.

Scenario 3a. and 3b. - 7.25% return assumption for 2017 through 2019, 7.00% for 2020 and thereafter.

Emerging investment experience is 4.00% per year for FY 2017 through FY 2021 and equal to the return assumption for all future years.

The member contribution rate is capped at 9.00% under Scenarios 2. and 3.

Contribution rates are increased in an orderly manner to attain a 20-year funding period and are assumed to be maintained in future years.

November 21, 2016

South Carolina Retirement System (SCRS)
SCRS Exhibit 1.
Projection Based on July 1, 2016 Actuarial Valuation
Assumes a 7.50% Annual Return Each Year
Contribution Rate Increases Maintain a Funding Period that Does not Exceed 30 Years
($ in Millions)

Projected Contributions Under Current Law

	Maintain a 2.90% Difference in Employer and Member Rate					Alternative Funding Policy Maintain 2.90% Difference Subject to a 9.00% Maximum Member Rate	
July 1,	Employer	Member	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)	Employer	Member
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2016	11.56%	8.66%	$ 18,566	60%	30	11.56%	8.66%
2017	11.56%	8.66%	20,018	58%	30	11.56%	8.66%
2018	11.99%	9.09%	21,465	55%	30	12.06%	9.00%
2019	12.27%	9.37%	22,890	53%	30	12.57%	9.00%
2020	12.60%	9.70%	23,694	53%	30	13.16%	9.00%
2021	12.87%	9.97%	24,004	54%	29	13.65%	9.00%
2022	12.94%	10.04%	24,231	54%	27	13.77%	9.00%
2023	12.94%	10.04%	24,419	55%	27	13.77%	9.00%
2024	12.94%	10.04%	24,580	56%	26	13.77%	9.00%
2025	12.94%	10.04%	24,713	57%	25	13.77%	9.00%
2026	12.94%	10.04%	24,815	58%	24	13.77%	9.00%
2027	12.94%	10.04%	24,883	59%	23	13.77%	9.00%

Projection based on the July 1, 2016 actuarial valuation, including a 7.50% discount rate. The projection assumes the market value of assets will earn 7.50% each future year. This information is provided for stakeholders to understand the financial impact based on the illustrated assumptions and emerging investment experience for decision making purposes. This projection is not documentation of compliance of the 30-year funding requirement specified in Section 9-1-1085 of South Carolina State Code because it assumes the Retirement System will incur investment losses in the actuarial value of assets in subsequent actuarial valuations. The employer and members contribution rates under the Alternative funding policy reflect that there is approximately a 20% greater efficiency in employer contributions than member contributions.

November 21, 2016

South Carolina Retirement System (SCRS)

SCRS Exhibit 2a.

Projection Based on July 1, 2016 Actuarial Valuation

Investment Return Assumption is 7.50% for 2016 and 7.25% Each Year Thereafter

Assumes 7.25% Emerging Investment Experience Each Future Year

Contribution Rate Increases After July 1, 2016 Based on Funding Policy

to Increase the Contribution Rates in an Orderly Manner to Attain a 20-Year Funding Period

($ in Millions)

	Maintain 2.90% Difference Subject to a 9.00% Maximum Member Rate					
July 1,	Employer	Member		Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)
(1)	(2)	(3)		(4)	(5)	(6)
2016	11.56%	8.66%	$	18,566	60%	27
2017	12.56%	9.00%		21,208	56%	28
2018	13.56%	9.00%		22,550	54%	26
2019	14.56%	9.00%		23,841	53%	24
2020	15.56%	9.00%		24,440	53%	21
2021	16.56%	9.00%		24,481	54%	20
2022	16.56%	9.00%		24,349	55%	19
2023	16.56%	9.00%		24,154	56%	18
2024	16.56%	9.00%		23,892	58%	17
2025	16.56%	9.00%		23,555	60%	16
2026	16.56%	9.00%		23,139	61%	15
2027	16.56%	9.00%		22,635	63%	14

Projection 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. This projection is not documentation of compliance of the 30-year funding requirement specified in Section 9-1-1085 of South Carolina State Code because it assumes the Retirement System will incur investment losses in the actuarial value of assets in subsequent actuarial valuations.

South Carolina Retirement System (SCRS)

SCRS Exhibit 2b.

Projection Based on July 1, 2016 Actuarial Valuation

Investment Return Assumption is 7.50% for 2016 and 7.25% Each Year Thereafter

Assumes Emerging Investment Experience is 4.00% Per Year for FY 2017 - 2021 and 7.25% Return Each Year Thereafter

Contribution Rate Increases After July 1, 2016 Based on Funding Policy

to Increase the Contribution Rates in an Orderly Manner to Attain a 20-Year Funding Period

($ in Millions)

	Maintain 2.90% Difference Subject to a 9.00% Maximum Member Rate				
July 1,	Employer	Member	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)
(1)	(2)	(3)	(4)	(5)	(6)
2016	11.56%	8.66%	$ 18,566	60%	27
2017	12.56%	9.00%	21,372	56%	29
2018	13.56%	9.00%	23,089	53%	28
2019	14.56%	9.00%	24,964	50%	26
2020	15.56%	9.00%	26,359	49%	24
2021	16.56%	9.00%	27,416	48%	22
2022	17.56%	9.00%	28,208	48%	20
2023	18.56%	9.00%	28,679	48%	20
2024	18.56%	9.00%	28,810	49%	19
2025	18.56%	9.00%	28,716	51%	18
2026	18.56%	9.00%	28,389	52%	17
2027	18.56%	9.00%	27,972	54%	16

Projection 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. This projection is not documentation of compliance of the 30-year funding requirement specified in Section 9-1-1085 of South Carolina State Code because it assumes the Retirement System will incur investment losses in the actuarial value of assets in subsequent actuarial valuations.

South Carolina Retirement System (SCRS)

SCRS Exhibit 3a.

Projection Based on July 1, 2016 Actuarial Valuation

Investment Return Assumption is 7.50% for 2016, 7.25% for 2017 Through 2019, and 7.00% Each Year Thereafter

Emerging Investment Experience is Assumed to be Equal to the Return Assumption Each Year

Contribution Rate Increases After July 1, 2016 Based on Funding Policy

to Increase the Contribution Rates in an Orderly Manner to Attain a 20-Year Funding Period

($ in Millions)

	Maintain 2.90% Difference Subject to a 9.00% Maximum Member Rate				
July 1,	Employer	Member	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)
(1)	(2)	(3)	(4)	(5)	(6)
2016	11.56%	8.66%	$ 18,566	60%	21
2017	14.25%	9.00%	21,208	56%	22
2018	15.25%	9.00%	22,358	54%	22
2019	16.25%	9.00%	23,440	53%	21
2020	17.25%	9.00%	25,211	52%	19
2021	17.25%	9.00%	25,094	54%	21
2022	17.25%	9.00%	24,788	55%	20
2023	17.25%	9.00%	24,533	57%	19
2024	17.25%	9.00%	24,206	59%	18
2025	17.25%	9.00%	23,799	60%	17
2026	17.25%	9.00%	23,308	62%	16
2027	17.25%	9.00%	22,722	64%	15

Projection 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. This projection is not documentation of compliance of the 30-year funding requirement specified in Section 9-1-1085 of South Carolina State Code because it assumes the Retirement System will incur investment losses in the actuarial value of assets in subsequent actuarial valuations.

South Carolina Retirement System (SCRS)

SCRS Exhibit 3b.

Projection Based on July 1, 2016 Actuarial Valuation

Investment Return Assumption is 7.50% for 2016, 7.25% for 2017 Through 2019, and 7.00% for 2020 and Each Year Thereafter

Assumes Emerging Investment Experience is 4.00% Per Year for FY 2017 - 2021 and 7.00% Each Year Thereafter

Contribution Rate Increases After July 1, 2016 Based on Funding Policy

to Increase the Contribution Rates in an Orderly Manner to Attain a 20-Year Funding Period

($ in Millions)

	Maintain 2.90% Difference Subject to a 9.00% Maximum Member Rate				
July 1,	Employer	Member	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)
(1)	(2)	(3)	(4)	(5)	(6)
2016	11.56%	8.66%	$ 18,566	60%	21
2017	14.25%	9.00%	21,372	56%	22
2018	15.25%	9.00%	22,898	53%	22
2019	16.25%	9.00%	24,566	51%	21
2020	17.25%	9.00%	27,140	49%	21
2021	18.25%	9.00%	28,031	48%	22
2022	19.25%	9.00%	28,634	49%	21
2023	20.25%	9.00%	28,899	49%	21
2024	20.25%	9.00%	28,802	51%	20
2025	20.25%	9.00%	28,457	52%	19
2026	20.25%	9.00%	27,865	54%	17
2027	20.25%	9.00%	27,159	57%	16

Projection 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. This projection is not documentation of compliance of the 30-year funding requirement specified in Section 9-1-1085 of South Carolina State Code because it assumes the Retirement System will incur investment losses in the actuarial value of assets in subsequent actuarial valuations.

Police Officers Retirement System (PORS)

Comparison of Key Financial Measures of Scenarios 1., 2a., and 3a.

	Employer Contribution Rate			Unfunded Liability ($ in Millions)			Funding Period (Years)		
Return Assumption:	**7.50%**	**7.25%**	**7.00%**	**7.50%**	**7.25%**	**7.00%**	**7.50%**	**7.25%**	**7.00%**
Scearnio:	**1.**	**2a.**	**3a.**	**1.**	**2a.**	**3a.**	**1.**	**2a.**	**3a.**
July 1,	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2016	14.24%	14.24%	14.24%	$ 2,213	$ 2,213	$ 2,213	30	22	19
2017	14.24%	15.24%	16.75%	2,406	2,610	2,610	30	27	22
2018	14.28%	16.24%	17.75%	2,600	2,797	2,776	30	25	21
2019	14.60%	17.24%	18.75%	2,794	2,970	2,926	30	24	19
2020	15.04%	18.24%	19.75%	2,906	3,054	3,223	30	23	20
2021	15.56%	18.24%	20.75%	2,944	3,056	3,217	28	22	19
2022	15.74%	18.24%	20.75%	2,972	3,053	3,191	27	21	18
2023	15.74%	18.24%	20.75%	2,995	3,046	3,157	26	20	17
2024	15.74%	18.24%	20.75%	3,015	3,033	3,114	25	19	16
2025	15.74%	18.24%	20.75%	3,031	3,011	3,061	24	18	15
2026	15.74%	18.24%	20.75%	3,041	2,980	2,995	23	17	14
2027	15.74%	18.24%	20.75%	3,045	2,939	2,916	22	16	13

Notes and Assumptions
Scenario 1. - 7.50% return assumption
Scenario 2a. - 7.25% return assumption for 2017 and thereafter.
Scenario 3a. - 7.25% return assumption for 2017 through 2019, 7.00% for 2020 and thereafter.
Emerging investment experience is the same as the return assumption for all future years.
The member contribution rate is capped at 9.75% under Scenarios 2. and 3.
Contribution rates are increased in an orderly manner to attain a 20-year funding period and are assumed to be maintained in future years.

Police Officers Retirement System (PORS)

Financial Impact if Emerging Investment Returns are 4.00% per Year for FY 2017 through FY 2021

	Employer Contribution Rate		Unfunded Liability ($ in Millions)		Funding Period (Years)	
Return Assumption:	**7.25%**		**7.25%**		**7.25%**	
Scearnio:	**2a.**	**2b.**	**2a.**	**2b.**	**2a.**	**2b.**
July 1,	(1)	(2)	(5)	(6)	(9)	(10)
2016	14.24%	14.24%	$ 2,213	$ 2,213	22	22
2017	15.24%	15.24%	2,610	2,637	27	28
2018	16.24%	16.24%	2,797	2,886	25	27
2019	17.24%	17.24%	2,970	3,158	24	26
2020	18.24%	18.24%	3,054	3,378	23	25
2021	18.24%	19.24%	3,056	3,556	22	23
2022	18.24%	20.24%	3,053	3,701	21	24
2023	18.24%	20.24%	3,046	3,802	20	24
2024	18.24%	20.24%	3,033	3,872	19	23
2025	18.24%	20.24%	3,011	3,908	18	22
2026	18.24%	20.24%	2,980	3,908	17	21
2027	18.24%	20.24%	2,939	3,899	16	20

	Employer Contribution Rate		Unfunded Liability ($ in Millions)		Funding Period (Years)	
Return Assumption:	**7.00%**		**7.00%**		**7.00%**	
Scearnio:	**3a.**	**3b.**	**3a.**	**3b.**	**3a.**	**3b.**
July 1,	(3)	(4)	(7)	(8)	(11)	(12)
2016	14.24%	14.24%	$ 2,213	$ 2,213	19	19
2017	16.75%	16.75%	2,610	2,637	22	22
2018	17.75%	17.75%	2,776	2,865	21	22
2019	18.75%	18.75%	2,926	3,114	19	21
2020	19.75%	19.75%	3,223	3,549	20	24
2021	20.75%	20.75%	3,217	3,717	19	22
2022	20.75%	21.75%	3,191	3,849	18	21
2023	20.75%	22.75%	3,157	3,937	17	20
2024	20.75%	22.75%	3,114	3,976	16	20
2025	20.75%	22.75%	3,061	3,977	15	19
2026	20.75%	22.75%	2,995	3,941	14	18
2027	20.75%	22.75%	2,916	3,893	13	17

Notes and Assumptions

Scenario 2a. and 2b. - 7.25% return assumption for 2017 and thereafter.

Scenario 3a. and 3b. - 7.25% return assumption for 2017 through 2019, 7.00% for 2020 and thereafter.

Emerging investment experience is 4.00% per year for FY 2017 through FY 2021 and equal to the return assumption for all future years.

The member contribution rate is capped at 9.75% under Scenarios 2. and 3.

Contribution rates are increased in an orderly manner to attain a 20-year funding period and are assumed to be maintained in future years.

Police Officers Retirement System (PORS)

PORS Exhibit 1.

Projection Based on July 1, 2016 Actuarial Valuation

Assumes a 7.50% Annual Return Each Year

Contribution Rate Increases Maintain a Funding Period that Does not Exceed 30 Years

($ in Millions)

Projected Contributions Under Current Law

	Maintain a 5.00% Difference in Employer and Member Rate					Alternative Funding Policy Maintain 5.00% Difference Subject to a 9.75% Maximum Member Rate	
July 1,	Employer	Member	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)	Employer	Member
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2016	14.24%	9.24%	$ 2,213	66%	30	14.24%	9.24%
2017	14.24%	9.24%	2,406	65%	30	14.24%	9.24%
2018	14.28%	9.28%	2,600	64%	30	14.28%	9.28%
2019	14.60%	9.60%	2,794	62%	30	14.60%	9.60%
2020	14.91%	9.91%	2,906	62%	30	15.04%	9.75%
2021	15.20%	10.20%	2,944	63%	28	15.56%	9.75%
2022	15.30%	10.30%	2,972	64%	27	15.74%	9.75%
2023	15.30%	10.30%	2,995	65%	26	15.74%	9.75%
2024	15.30%	10.30%	3,015	66%	25	15.74%	9.75%
2025	15.30%	10.30%	3,031	68%	24	15.74%	9.75%
2026	15.30%	10.30%	3,041	69%	23	15.74%	9.75%
2027	15.30%	10.30%	3,045	70%	22	15.74%	9.75%

Projection based on the July 1, 2016 actuarial valuation, including a 7.50% discount rate. The projection assumes the market value of assets will earn 7.50% each future year. This information is provided for stakeholders to understand the financial impact based on the illustrated assumptions and emerging investment experience for decision making purposes. This projection is not documentation of compliance of the 30-year funding requirement specified in Section 9-11-225 of South Carolina State Code because it assumes the Retirement System will incur investment losses in the actuarial value of assets in subsequent actuarial valuations. The employer and members contribution rates under the Alternative funding policy reflect that there is approximately a 20% greater efficiency in employer contributions than member contributions.

November 21, 2016

Police Officers Retirement System (PORS)

PORS Exhibit 2a.

Projection Based on July 1, 2016 Actuarial Valuation

Investment Return Assumption is 7.50% for 2016 and 7.25% Each Year Thereafter

Assumes 7.25% Emerging Investment Experience Each Future Year

Contribution Rate Increases After July 1, 2016 Based on Funding Policy

to Increase the Contribution Rates in an Orderly Manner to Attain a 20-Year Funding Period

($ in Millions)

	Maintain 5.00% Difference Subject to a 9.75% Maximum Member Rate				
July 1,	Employer	Member	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)
(1)	(2)	(3)	(4)	(5)	(6)
2016	14.24%	9.24%	$ 2,213	66%	22
2017	15.24%	9.75%	2,610	63%	27
2018	16.24%	9.75%	2,797	62%	25
2019	17.24%	9.75%	2,970	61%	24
2020	18.24%	9.75%	3,054	62%	23
2021	18.24%	9.75%	3,056	63%	22
2022	18.24%	9.75%	3,053	64%	21
2023	18.24%	9.75%	3,046	66%	20
2024	18.24%	9.75%	3,033	67%	19
2025	18.24%	9.75%	3,011	68%	18
2026	18.24%	9.75%	2,980	70%	17
2027	18.24%	9.75%	2,939	71%	16

Projection 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. This projection is not documentation of compliance of the 30-year funding requirement specified in Section 9-11-225 of South Carolina State Code because it assumes the Retirement System will incur investment losses in the actuarial value of assets in subsequent actuarial valuations.

Police Officers Retirement System (PORS)
PORS Exhibit 2b.
Projection Based on July 1, 2016 Actuarial Valuation
Investment Return Assumption is 7.50% for 2016 and 7.25% Each Year Thereafter
Assumes Emerging Investment Experience is 4.00% Per Year for FY 2017 - 2021 and 7.25% Return Each Year Thereafter
Contribution Rate Increases After July 1, 2016 Based on Funding Policy
to Increase the Contribution Rates in an Orderly Manner to Attain a 20-Year Funding Period
($ in Millions)

	Maintain 2.90% Difference Subject to a 9.00% Maximum Member Rate				
July 1,	Employer	Member	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)
(1)	(2)	(3)	(4)	(5)	(6)
2016	14.24%	9.24%	$ 2,213	66%	22
2017	15.24%	9.75%	2,637	63%	28
2018	16.24%	9.75%	2,886	61%	27
2019	17.24%	9.75%	3,158	59%	26
2020	18.24%	9.75%	3,378	57%	25
2021	19.24%	9.75%	3,556	57%	23
2022	20.24%	9.75%	3,701	57%	24
2023	20.24%	9.75%	3,802	57%	24
2024	20.24%	9.75%	3,872	58%	23
2025	20.24%	9.75%	3,908	59%	22
2026	20.24%	9.75%	3,908	60%	21
2027	20.24%	9.75%	3,899	62%	20

Projection 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. This projection is not documentation of compliance of the 30-year funding requirement specified in Section 9-11-225 of South Carolina State Code because it assumes the Retirement System will incur investment losses in the actuarial value of assets in subsequent actuarial valuations.

November 21, 2016

Police Officers Retirement System (PORS)

PORS Exhibit 3a.

Projection Based on July 1, 2016 Actuarial Valuation

Investment Return Assumption is 7.50% for 2016, 7.25% for 2017 Through 2019, and 7.00% Each Year Thereafter

Emerging Investment Experience is Assumed to be Equal to the Return Assumption Each Year

Contribution Rate Increases After July 1, 2016 Based on Funding Policy

to Increase the Contribution Rates in an Orderly Manner to Attain a 20-Year Funding Period

($ in Millions)

	Maintain 5.00% Difference Subject to a 9.75% Maximum Member Rate				
July 1,	Employer	Member	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)
(1)	(2)	(3)	(4)	(5)	(6)
2016	14.24%	9.24%	$ 2,213	66%	19
2017	16.75%	9.75%	2,610	63%	22
2018	17.75%	9.75%	2,776	62%	21
2019	18.75%	9.75%	2,926	62%	19
2020	19.75%	9.75%	3,223	61%	20
2021	20.75%	9.75%	3,217	62%	19
2022	20.75%	9.75%	3,191	64%	18
2023	20.75%	9.75%	3,157	65%	17
2024	20.75%	9.75%	3,114	67%	16
2025	20.75%	9.75%	3,061	69%	15
2026	20.75%	9.75%	2,995	71%	14
2027	20.75%	9.75%	2,916	72%	13

Projection 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. This projection is not documentation of compliance of the 30-year funding requirement specified in Section 9-11-225 of South Carolina State Code because it assumes the Retirement System will incur investment losses in the actuarial value of assets in subsequent actuarial valuations.

Police Officers Retirement System (PORS)

PORS Exhibit 3b.

Projection Based on July 1, 2016 Actuarial Valuation

Investment Return Assumption is 7.50% for 2016, 7.25% for 2017 Through 2019, and 7.00% for 2020 and Each Year Thereafter

Assumes Emerging Investment Experience is 4.00% Per Year for FY 2017 - 2021 and 7.00% Each Year Thereafter

Contribution Rate Increases After July 1, 2016 Based on Funding Policy

to Increase the Contribution Rates in an Orderly Manner to Attain a 20-Year Funding Period

($ in Millions)

	Maintain 5.00% Difference Subject to a 9.75% Maximum Member Rate				
July 1,	Employer	Member	Unfunded Liability	Funded Ratio AVA / AAL	Funding Period (years)
(1)	(2)	(3)	(4)	(5)	(6)
2016	14.24%	9.24%	$ 2,213	66%	19
2017	16.75%	9.75%	2,637	63%	22
2018	17.75%	9.75%	2,865	61%	22
2019	18.75%	9.75%	3,114	59%	21
2020	19.75%	9.75%	3,549	57%	24
2021	20.75%	9.75%	3,717	56%	22
2022	21.75%	9.75%	3,849	56%	21
2023	22.75%	9.75%	3,937	57%	20
2024	22.75%	9.75%	3,976	58%	20
2025	22.75%	9.75%	3,977	59%	19
2026	22.75%	9.75%	3,941	61%	18
2027	22.75%	9.75%	3,893	63%	17

Projection 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. This projection is not documentation of compliance of the 30-year funding requirement specified in Section 9-11-225 of South Carolina State Code because it assumes the Retirement System will incur investment losses in the actuarial value of assets in subsequent actuarial valuations.

Gabriel Roeder Smith & Company
Consultants & Actuaries

DRAFT

SOUTH CAROLINA RETIREMENT SYSTEM (SCRS)

ACTUARIAL VALUATION REPORT
AS OF JULY 1, 2016

GRS
Gabriel Roeder Smith & Company
Consultants & Actuaries

5605 N. MacArthur Blvd.
Suite 870
Irving, TX 75038-2631

469.524.0000 phone
469.524.0003 fax
www.gabrielroeder.com

DRAFT

November 28, 2016

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

Subject: Actuarial Valuation as of July 1, 2016

Dear Members of the Board:

This report describes the current actuarial condition of the South Carolina Retirement System (SCRS), determines the calculated employer and member contribution rates, and analyzes changes in the System's financial condition. In addition, the report provides various summaries of the data. A separate report is issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements 67 and 68. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of July 1, the first day of the plan year for SCRS. This report was prepared at the request of the Board of Directors of the South Carolina Public Employee Benefit Authority (Board) and is intended for use by the Public Employee Benefit Authority (PEBA) staff and those designated or approved by the Board.

FINANCING OBJECTIVES AND FUNDING POLICY

The employer and member contribution rate is determined in accordance with Section 9-1-1085 of the South Carolina Code. As specified by the Code, in the event the scheduled employer and member contribution rate is insufficient to maintain a thirty-year amortization period for financing the unfunded liability of the System, the Board shall increase the employer and member contribution rates in equal amounts, as necessary, to maintain a funding period that does not exceed thirty years. The Statute also allows the Board to increase the member and employer contribution rate by up to 50 basis points in a year, even if the funding period is less than 30 years. The contribution rate determined by a given actuarial valuation becomes effective twenty-four months after the valuation date. In other words, the contribution rate determined by this July 1, 2016 actuarial valuation will be used by the Board when certifying the employer and member contribution rates for the year beginning July 1, 2018 and ending June 30, 2019.

Since the employer and member contribution rates that are in effect as of July 1, 2016 are no longer sufficient to maintain a funding period that does not exceed 30 years as of this valuation date, the required contribution rate increase must increase to 11.99% of pay for the employer and 9.09% of pay for the member to decrease the funding period to 30 years. The Board may also wish to consider increasing the contribution rates, as permitted by State Statute, to further improve in the financial security of the system.

According to State code, the Board is not permitted to decrease the employer and member contribution rates until the funded ratio of the plan is at least 90%. Also, any change in the rates must maintain the 2.90% differential between the employer and member contribution rates.

If new legislation is enacted between the valuation date and the date the contribution rate becomes effective, the Board may adjust the calculated rate before certifying them, in order to reflect this new legislation. Such adjustments are based on information supplied by the actuary.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVES

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches at least 100%.

The funded ratio of the System decreased from 62.0% to 59.5%. Absent favorable investment or liability experience, we expect the funded ratio will slightly decrease for the next several years before it begins to gradually improve.

If the market value of assets had been used in the calculation instead of the actuarial (smoothed) value of assets, the funded ratio for the System would have been 52.3%, compared to 57.0% in the prior year. The decrease in the funded ratio on a market value basis is primarily due to the use of updated actuarial assumptions and unfavorable investment experience during the last fiscal year. Specifically, the market value of assets earned a -0.47% return determined using the method specified by GASB 67 and reported in the financial statement of the South Carolina Retirement Systems for the year ending June 30, 2016. The -0.7% return documented in this report was determined on a dollar-weighted basis and is net of expenses and assumed mid-year cash flows.

ASSUMPTIONS AND METHODS

South Carolina State Code also requires that an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. An experience study was conducted for the five-year period ending June 30, 2015. The following is a summary of the assumptions that were adopted by the Board and used in preparing this actuarial valuation:

- Decrease the price inflation assumption from 2.75% to 2.25%.
- Decrease in the assumed rate of salary increases for individual members.
- Decrease the payroll growth assumption from 3.50% to 3.00%.
- Adopt new post-retirement mortality tables specific to South Carolina retiree experience. Mortality for retirees is assumed to improve based on generational projection Scale AA.

DRAFT

- Minor adjustments to the pre-retirement mortality assumption.
- Modify the rates of withdrawal and retirement for state.
- Modify the asset method such that each year's investment gain or loss (determined on a market value of asset basis) is recognized over a closed five-year period at the rate of 20% per year.

The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.50% investment return assumption.

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can, and almost certainly will, differ as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rate, and funding periods. The actuarial calculations are intended to provide information for rational decision making.

BENEFIT PROVISIONS

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2016. There were no legislative changes enacted since the previous valuation that had a measurable effect on the current valuation.

DATA

Member data for retired, active and inactive members was supplied as of July 1, 2016, by the PEBA staff. The staff also supplied asset information as of July 1, 2016. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. GRS is not responsible for the accuracy or completeness of the information provided to us by PEBA.

CERTIFICATION

We certify that the information presented herein is accurate and fairly portrays the actuarial position of SCRS as of July 1, 2016.

All of our work conforms with generally accepted actuarial principles and practices, and is in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of South Carolina Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

DRAFT

The undersigned are independent actuaries and consultants. Mr. Newton and Mr. White are Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Both are experienced in performing valuations for large public retirement systems.

Sincerely,

Gabriel, Roeder, Smith & Co.

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

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

DRAFT

TABLE OF CONTENTS

DRAFT

SECTION A

EXECUTIVE SUMMARY

DRAFT

Executive Summary

(Dollar amounts expressed in thousands)

	Valuation Date:	
	July 1, 2016	July 1, 2015
Membership		
• Number of		
- Active Members	190,923	187,318
- TERI Members	8,332	8,765
- Retirees and Beneficiaries	129,523	125,875
- Inactive Members	169,806	164,509
- Total	498,584	486,467
• Projected payroll of active members	$8,213,042	$7,765,588
• Projected payroll for all members, including members in ORP, TERI, and working retirees	$10,497,446	$10,012,960
Contribution Rates[1,2]		
• Employer contribution rate	11.99%	11.09%
• Member	9.09%	8.19%
Assets		
• Market value	$23,996,362	$25,131,828
• Actuarial value	27,293,968	27,365,921
• Return on market value	-0.7%	1.4%
• Return on actuarial value	3.3%	5.4%
• Ratio of actuarial to market value of assets	113.7%	108.9%
• External cash flow %	-3.9%	-3.8%
Actuarial Information		
• Normal cost %	10.27%	9.83%
• Actuarial accrued liability (AAL)	$45,859,906	$44,119,176
• Unfunded actuarial accrued liability (UAAL)	18,565,938	16,753,255
• Funded ratio	59.5%	62.0%
• Funding period (years)	30	30
Reconciliation of UAAL		
• Beginning of Year UAAL	$16,753,255	$15,978,874
- Interest on UAAL	1,256,494	1,198,416
- Amortization payment	(1,017,186)	(978,816)
- Assumption/method changes	467,722	0
- Asset experience	1,131,589	558,523
- Salary experience	(17,241)	(76,578)
- Other liability experience	(8,695)	72,836
- Legislative Changes	0	0
• End of Year UAAL	$18,565,938	$16,753,255

[1] The contribution rates determined by the 2016 valuation are established by Section 9-1-1085 of the South Carolina Code and become effective for the fiscal year beginning July 1, 2018. The employer contribution rates shown above include the cost of incidental death benefits.

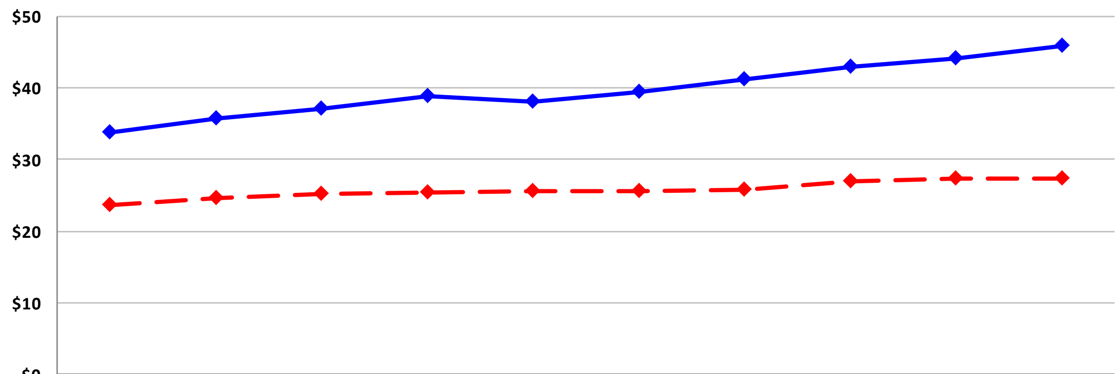
[2] The rates shown for the 2015 and 2016 valuation are the minimum required contribution rates. State Statutes permit the Board to increase the contribution rates above the amounts shown, up to certain limits. Effective July 1, 2016, the Board elected to increase the employer and member contribution rate to 11.56% and 8.66%, respectively.

DRAFT

EXECUTIVE SUMMARY (CONTINUED)

The unfunded actuarial accrued liability increased by $1.813 billion since the prior year's valuation to $18.566 billion. The largest source of this increase is the result of the continued recognition of deferred investment losses experienced in prior fiscal years in the actuarial value of assets (i.e. $1.132 billion was recognized in the July 1, 2016 valuation), followed by a $0.468 billion increase due to updated actuarial assumptions, followed by a $0.239 billion increase because the contributions to the plan attributable to financing the unfunded actuarial accrued liability were less than the interest cost on the unfunded liability. Below is a chart with the historical actuarial value of assets and actuarial accrued liability for SCRS. The divergence in the assets and liability over the last 10 years has generally been due to a combination of: (i) the actual investment experience being less than the System's expected investment return assumption, (ii) increases in the actuarial accrued liability due to cost of living adjustments provided to retirees prior to the enactment of retirement reform legislation in 2012, and (iii) assumption changes recommended by the actuary and adopted by the Budget and Control Board in 2011.

Chart 1. - History of Actuarial Assets vs. Actuarial Accrued Liability
(Dollars in Billions)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AAL	33.8	35.7	37.2	38.8	38.0	39.5	41.2	42.9	44.1	45.9
AVA	23.5	24.7	25.2	25.4	25.6	25.5	25.8	26.9	27.4	27.3

Effective July 1, 2016, the Board elected to increase the employer and member contribution rate by 50 basis points each to 11.56% and 8.66%, respectively, to improve the financial security of the retirement system. However, these contribution rates in effect for fiscal year 2017 are no longer sufficient to maintain a funding period that does not exceed 30 years (determined on an actuarial value of asset basis). As a result, the employer and member contribution rates must increase to 11.99% and 9.09% of pay, respectively, for fiscal year 2019 (i.e. effective July 1, 2018) to decrease the funding period to 30 years. The Board may wish to consider increasing the contribution rates, as permitted by State Statute, on July 1, 2017 to further improve in the financial security of the system.

Absent legislative changes or significantly favorable experience, we project that the employer and member contribution rates will increase within the next few years as the $3.3 billion in deferred investment losses become recognized in the actuarial value of assets over the next four years. Specifically, if emerging investment and liability experience is consistent with the current assumptions, both the employer and member contribution rates are projected to increase by approximately 1.00% over the next 4 or 5 years in order to maintain a 30-year funding period.

DRAFT

SECTION B

DISCUSSION

DRAFT

DISCUSSION

The results of the July 1, 2016 actuarial valuation of the South Carolina Retirement System are presented in this report. The primary purposes of the valuation report are to depict the current financial condition of the System, determine the annual required contribution, and analyze changes in the System's financial condition. In addition, the report provides various summaries of the data.

This section discusses the determination of the current funding requirements and the System's funded status, as well as changes in financial condition of the retirement system.

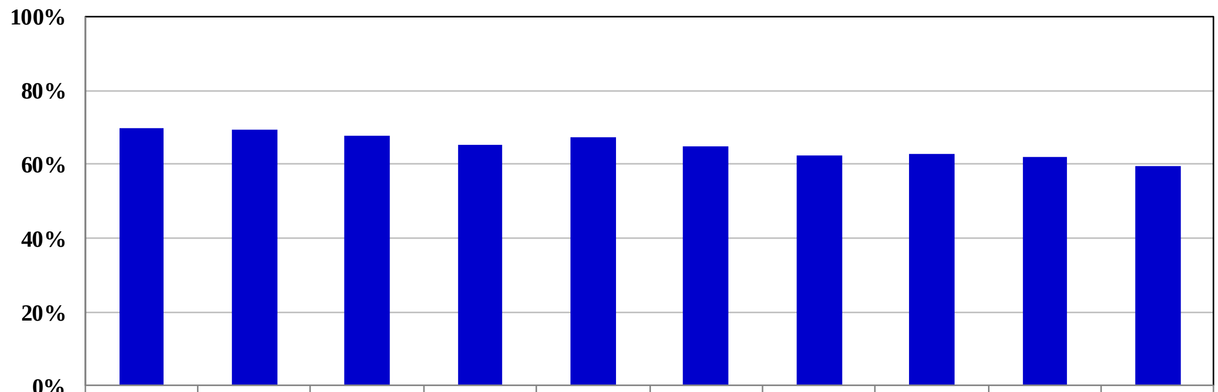
All of the actuarial and financial tables referenced by the other sections of this Report appear in Section C. Section D provides member data and statistical information. Appendices A and B provide summaries of the principle actuarial assumptions and methods and plan provisions. Finally, Appendix C provides a glossary of technical terms that are used throughout this report.

DRAFT

Funding Progress

The funded ratio decreased from 62.0% to 59.5% since the prior valuation. Chart 2, shown below provides a 10-year history of the system's funded ratio. The gradual decline in the funded ratio over the last 10 years has generally been due to a combination of: (i) investment losses (ii) increases in the actuarial accrued liability due to cost of living adjustments provided to retirees prior to the enactment of retirement reform legislation in 2012, and (iii) assumption changes recommended by the actuary and adopted by the Budget and Control Board in 2011 and 2016. Table 10, Schedule of Funding Progress, in the following section of the report provides additional detail regarding the funding progress of the Retirement System.

Chart 2. - Funded Ratio
Actuarial Assets as a percentage of Actuarial Accrued Liability



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Funded Ratio	69.7%	69.3%	67.8%	65.5%	67.4%	64.7%	62.5%	62.7%	62.0%	59.5%

Absent future unfavorable investment or demographic experience, or legislative changes, we expect the funded ratio to slightly decrease for the next three or four years, then begin to gradually improve. Also, based on the current funding policy and contribution rates, we expect the dollar amount of the unfunded actuarial accrued liability, or the difference between the actuarial accrued liability and the actuarial value of assets, to gradually increase for the next 10 to 12 years before beginning to decrease.

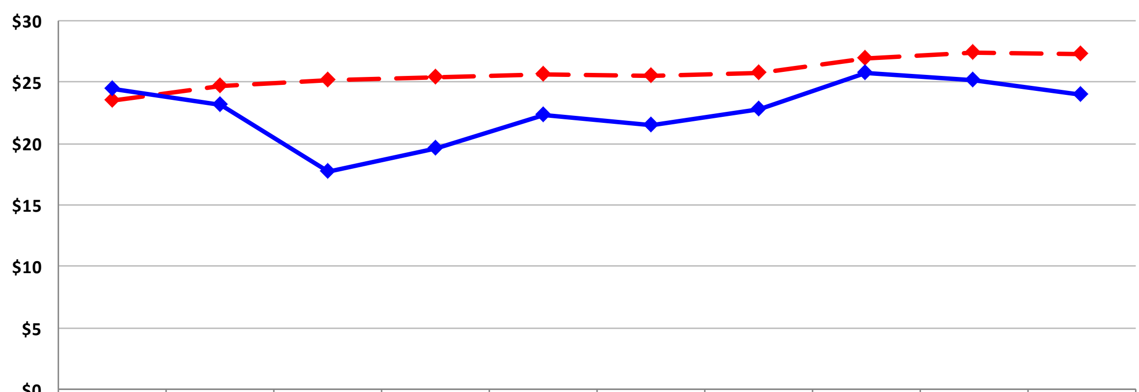
Asset Gains/ (Losses)

The actuarial value of assets ("AVA") is based on a smoothed market value of assets, using a systematic approach to phase-in the difference between the actual and expected investment return on the market value of assets (adjusted for receipts and disbursements during the year). This is appropriate because it dampens the short-term volatility inherent in investment markets. The returns are computed net of investment expenses. The actuarial value of assets slightly decreased from $27.4 billion to $27.3 billion since the prior valuation. Table 8 in the following section of the report provides the development of the actuarial value of assets.

The rate of return on the market value of assets on a dollar-weighted basis for fiscal year 2016 was a -0.7%; which is less than the 7.50% expected annual return. The return on an actuarial (smoothed) asset value was 4.2%. This difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.

The market value of assets is $3.3 billion less than the actuarial value of assets, which signifies that the retirement system is in a position of deferred losses. Therefore, unless the System experiences investment returns in excess of the assumed rate of return, the future recognition of these deferred losses is expected to increase the unfunded actuarial accrued liability.

Chart 3. - History of Actuarial Value and Market Value of Assets
(Dollars in Billions)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AVA	23.5	24.7	25.2	25.4	25.6	25.5	25.8	26.9	27.4	27.3
MVA	24.4	23.1	17.7	19.7	22.4	21.5	22.8	25.7	25.1	24.0

Assets as of July 1,

Tables 6 and 7 in the following section of this report provide asset information that was included in the annual financial statements of the System. Also, Table 9 shows the estimated yield on a market value basis and on the actuarial asset valuation method.

Actuarial Gains/ (Losses) and the Funding Period

The annual actuarial valuation is a snapshot analysis of the benefit liabilities, assets and funded position of the System as of the first day of the plan year. In any one fiscal year, the experience can be better or worse from that which is assumed or expected. The actuarial assumptions do not necessarily attempt to model what the experience will be for any one given fiscal year, but instead try to model the overall experience over many years. Therefore, as long as the actual experience of the retirement system is reasonably close to the current assumptions, the long-term funding requirements of the System will remain relatively consistent.

The unfunded actuarial accrued liability (UAAL) has increased from $16.8 billion in 2015 to $18.6 billion in 2016. The table below shows the source of the gains and losses and the impact of those gains and losses on the UAAL.

Reconciliation of UAAL
(Dollars in thousands)

• Beginning of Year UAAL	$16,753,255
- Interest on UAAL	1,256,494
- Amortization payment	(1,017,186)
- Assumption/method changes	467,722
- Asset Experience	1,131,589
- Salary Experience	(17,241)
- Other liability experience	(8,695)
- Legislative changes	0
• End of Year UAAL	$18,565,938

The System experienced a net $26 million gain in liability, due to salary and other demographic experience. This net gain is approximately 0.03% of the total actuarial accrued liability.

Based on the valuation as of July 1, 2016, the funding period based on the current contribution rates in effect for fiscal year 2017 are no longer sufficient to satisfy the 30-year funding requirement in the State code. Therefore, the employer and member contribution rates will need to increase to 11.99% and 11.09%, respectively, for fiscal year 2019 (i.e. effective July 1, 2018) in order to comply with the 30-year funding requirement (determined on an actuarial value of asset basis). The Board may wish to consider increasing the contribution rates, as permitted by State Statute, on July 1, 2017 to further improve in the financial security of the system. The following page provides a table reconciling the change in the funding period from the prior year's valuation based on the contribution rates that are currently in effect for fiscal year 2017.

DRAFT

Change in Funding Period (Years)
Based on the Employer and Member Contribution
Before Reflecting Required Increase in Contribution Rate
for FY 2018

• Prior Year	30.0
- Expected experience	(1.0)
- Assumption and method changes	11.4
- Asset experience	8.7
- Salary and demographic experience	(2.8)
- Legislative changes	0.0
- Board approved rate increase for FY 2017	(10.1)
- Total Change	6.2
• Current Year Valuation	36.2

Since the current funding period (after reflecting the required increase contribution rates) is close to the maximum permitted 30 years, it is possible that any near-term adverse experience, whether investment or demographic related, will require an increase to future contribution rates. In fact, absent favorable investment experience, we expect the funding period to increase in future years as deferred investment losses become fully recognized in the actuarial value of assets and calculation of the contribution rates.

Also, note that the current funding policy utilizes a level percentage of payroll amortization, which assumes that covered payroll will increase at the rate of 3.00% per year in the future. As a result, the amortization payments will not be sufficient to cover all of the interest charges on the UAAL until the funding period decreases to approximately 20 years. Therefore, stakeholders should expect the dollar amount of the unfunded actuarial accrued liability to gradually increase until the funding period decreases below 20 years.

DRAFT

Actuarial Assumptions and Methods

In determining costs and liabilities, actuaries use assumptions about the future, such as rates of salary increase, probabilities of retirement, termination, death and disability, and an annual investment return assumption. South Carolina State Code also requires that an experience analysis that reviews the economic and demographic assumptions be performed every five years. An experience study was conducted for the five-year period ending June 30, 2015. The following is a summary of the assumptions that were adopted by the Board and used in preparing this actuarial valuation:

- Decrease the price inflation assumption from 2.75% to 2.25%.
- Decrease in the assumed rate of salary increases for individual members.
- Decrease the payroll growth assumption from 3.50% to 3.00%.
- Adopt new post-retirement mortality tables specific to South Carolina retiree experience. Mortality for retirees is assumed to improve based on generational projection Scale AA.
- Minor adjustments to the pre-retirement mortality assumption.
- Modify the rates of withdrawal and retirement.
- Make an explicit refund election assumption for members who terminate employment with a vested benefit.
- Modify the asset method such that each year's investment gain or loss (determined on a market value of asset basis) is recognized over a closed five-year period at the rate of 20% per year.

The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.50% investment return assumption.

Appendix A includes a summary of the actuarial assumptions and methods used in this valuation. It is our opinion that the assumptions are internally consistent, reasonable, and reflect anticipated future experience of the System. The next experience study will be conducted no later than as of June 30, 2020.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. This report 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.

An actuarial valuation assumes that all assumptions will be met in future years, including a 7.50% return on the actuarial value of assets determined as of the actuarial valuation date. Establishing the contribution rates, funding period, and other financial metrics on an actuarial value of asset basis is

DRAFT

consistent with applicable actuarial standards of practice, industry prevalence, and applicable provisions in South Carolina State Code.

Emerging experience due to liabilities or investments that is different than assumed (including the recognition of previously deferred investment losses) may result in a change in the required contribution rate and or funding period that is different than expected based on the prior actuarial valuation. Also, separate projections provided outside of this report that may illustrate the financial effect of future gains or losses on actuarial basis in subsequent years may be useful for business making decisions, but such projections should not be misunderstood as documentation of satisfaction of a 30-year amortization requirement specified in State Code.

DRAFT

Benefit Provisions

Appendix B of this report includes a summary of the benefit provisions for SCRS. There were no legislative changes enacted since the previous valuation that had a measurable effect on the current valuation. Below is a summary of the retirement provisions for Class Two members, members hired prior to July 1, 2012, and Class Three members, members hired after June 30, 2012.

Summary of Retirement Provisions for:

Class Two Members (members hired prior to July 1, 2012)

- Average Final Compensation (AFC) is based on the highest 12 consecutive quarters of compensation. The determination of a member's AFC also includes up to 45 days of unused annual leave paid at termination. Monthly benefits are based on one-twelfth of this amount.
- The retirement benefit amount is equal to 1.82% of the member's AFC times the member's credited service (years). Credited service may include up to 90 days of unused sick leave.
- Members are eligible to commence a normal retirement benefit after they have (i) 28 years of credited service or (ii) attained age 65 with 5 years of earned service.
- At each July 1 after their first full year of retirement, annuitants will receive an automatic cost of living adjustment equal to the lesser of 1.00% of their retirement benefit or $500 per annum.

Class Three Members (members hired after June 30, 2012)

- Average Final Compensation (AFC) is based on the highest twenty (20) consecutive quarters of compensation. The determination of a member's AFC will not include unused annual leave paid at termination. Monthly benefits are based on one-twelfth of this amount;
- The retirement benefit is equal to 1.82% of the member's AFC times the member's credited service (years). Credited service will not include unused sick leave.
- Members are eligible to commence a normal retirement benefit after they have (i) attained age 65 with eight years of earned service or (ii) the combination of the member's age and years of credited service equals or exceeds 90 (i.e. the rule of 90).
- At each July 1 after their first full year of retirement, annuitants will receive an automatic cost of living adjustment equal to the lesser of 1.00% of their retirement benefit or $500 per annum.

DRAFT

SECTION C

ACTUARIAL TABLES

DRAFT

ACTUARIAL TABLES

DRAFT

Summary of Cost Items

(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Projected payroll of active members[1]	$ 8,213,042	$ 7,765,588
2.	Present value of future pay	$ 65,013,981	$ 63,403,897
3.	Normal cost rate		
	a. Total normal cost rate	10.27%	9.83%
	b. Less: member contribution rate	-9.09%	-8.19%
	c. Employer normal cost rate	1.18%	1.64%
4.	Actuarial accrued liability for active members		
	a. Present value of future benefits	$ 21,097,284	$ 20,448,693
	b. Less: present value of future normal costs	(6,095,180)	(5,932,209)
	c. Actuarial accrued liability	$ 15,002,104	$ 14,516,484
5.	Total actuarial accrued liability		
	a. Retirees and beneficiaries	$ 29,830,649	$ 28,645,954
	b. Inactive members	1,027,153	956,738
	c. Active members (Item 4c)	15,002,104	14,516,484
	d. Total	$ 45,859,906	$ 44,119,176
6.	Actuarial value of assets	$ 27,293,968	$ 27,365,921
7.	Unfunded actuarial accrued liability (UAAL) (Item 5d - Item 6)	$ 18,565,938	$ 16,753,255
8.	Annual Required Contribution Rate		
	a. Employer normal cost rate	1.18%	1.64%
	b. Employer contribution rate available to amortize the UAAL	10.81%	9.45%
	c. Total employer contribution rate	11.99%	11.09%
9.	Funding period based on the required employer contribution rate (years)	30	30
10.	Applicable statutorily required contribution rates[2]		
	a. Employer contribution rate	11.99%	11.09%
	b. Member contribution rate	9.09%	8.19%

[1] The projected payroll does not include payroll for members in ORP, TERI, and who are working retirees.

[2] The applicable employer and member contribution rates are determined in accordance with Section 9-1-1085 of the South Carolina Code. The contribution rates determined by the July 1, 2016 valuation become effective for the fiscal year beginning July 1, 2018. The contribution rate includes the cost of incidental death benefits.

DRAFT

Actuarial Present Value of Future Benefits
(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Active members		
	a. Service retirement	$ 18,487,417	$ 17,477,781
	b. Deferred termination benefits and refunds	679,251	906,488
	c. Survivor benefits	601,475	786,544
	d. Disability benefits	1,329,141	1,277,880
	e. Total	$ 21,097,284	$ 20,448,693
2.	Retired members		
	a. Service retirement	$ 26,929,180	$ 25,821,386
	b. Disability retirement	1,707,619	1,679,069
	c. Beneficiaries	1,035,629	986,873
	d. Incidental death benefits	158,221	158,626
	e. Total	$ 29,830,649	$ 28,645,954
3.	Inactive members		
	a. Vested terminations	$ 804,384	$ 747,289
	b. Nonvested terminations	222,769	209,449
	c. Total	$ 1,027,153	$ 956,738
4.	Total actuarial present value of future benefits	$ 51,955,086	$ 50,051,385

DRAFT

Analysis of Normal Cost

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Total normal cost rate		
	a. Service retirement	6.89%	6.67%
	b. Deferred termination benefits and refunds	2.20%	2.01%
	c. Survivor benefits	0.34%	0.45%
	d. Disability benefits	0.72%	0.70%
	e. Total	10.15%	9.83%
2.	Administrative expenses	0.12%	N/A
3.	Less: member contribution rate	9.09%	8.19%
4.	Net employer normal cost rate	1.18%	1.64%

DRAFT

Results of July 1, 2016 Valuation
(Dollar amounts expressed in thousands)

			July 1, 2016 (1)
1.	Actuarial Present Value of Future Benefits		
	a. Present retired members and beneficiaries	$	29,830,649
	b. Present active and inactive members		22,124,437
	c. Total actuarial present value	$	51,955,086
2.	Present Value of Future Normal Contributions		
	a. Employee	$	5,909,771
	b. Employer		185,409
	c. Total future normal contributions	$	6,095,180
3.	Actuarial Liability	$	45,859,906
4.	Current Actuarial Value of Assets	$	27,293,968
5.	Unfunded Actuarial Liability	$	18,565,938
6.	UAAL Amortization Rates based on an employer contribution rate of 11.99%		
	a. Active members		10.81%
	b. TERI members (including employee contributions)		21.08%
	c. ORP members		6.99%
	d. Re-employed retirees (including employee contributions)		21.08%
7.	Unfunded Actuarial Liability Liquidation Period		30 years

Note: The employer contribution rate includes the cost for incidental death benefits.

DRAFT

Actuarial Balance Sheet

(Dollar amounts expressed in thousands)

	July 1, 2016 (1)	July 1, 2015 (2)
1. Assets		
a. Current assets (actuarial value)		
i. Employee annuity savings fund	$ 7,447,442	$ 7,054,277
ii. Employer annuity accumulation fund	19,846,526	20,311,644
iii. Total current assets	$ 27,293,968	$ 27,365,921
b. Present value of future member contributions	$ 5,909,771	$ 5,192,778
c. Present value of future employer contributions		
i. Normal contributions	$ 185,409	$ 739,431
ii. Accrued liability contributions	18,565,938	16,753,255
iii. Total future employer contributions	$ 18,751,347	$ 17,492,686
d. Total assets	$ 51,955,086	$ 50,051,385
2. Liabilities		
a. Employee annuity savings fund		
i. Past member contributions	$ 7,447,442	$ 7,054,277
ii. Present value of future member contributions	5,909,771	5,192,778
iii. Total contributions to employee annuity savings fund	$ 13,357,213	$ 12,247,055
b. Employer annuity accumulation fund		
i. Benefits currently in payment	$ 29,830,649	$ 28,645,954
ii. Benefits to be provided to other members	8,767,224	9,158,376
iii. Total benefits payable from employer annuity accumulation fund	$ 38,597,873	$ 37,804,330
c. Total liabilities	$ 51,955,086	$ 50,051,385

System Net Assets
Assets at Market or Fair Value
(Dollar amounts expressed in thousands)

Item (1)	July 1, 2016 (2)	July 1, 2015 (3)
1. Cash and cash equivalents (operating cash)	$ 3,385,664	$ 2,473,892
2. Receivables	871,729	628,977
3. Investments		
a. Short-term securities	$ 677,357	$ 657,551
b. Fixed income (global)	5,003,122	6,854,019
c. Public equities (global)	6,161,285	6,128,632
d. Global tactical asset allocation	1,680,189	1,909,410
e. Alternative investments	7,688,980	7,703,664
f. Total investments	$ 21,210,933	$ 23,253,276
4. Securities lending cash collateral invested	$ 47,690	$ 60,229
5. Prepaid administrative expenses	3,081	2,641
6. Capital assets, net of accumulated depreciation	2,461	2,693
7. Total assets	$ 25,521,558	$ 26,421,708
8. Liabilities		
a. Due to other systems	$ 302	$ 173
b. Accounts payable	1,231,849	1,028,515
c. Investment fees payable	8,076	7,270
d. Obligations under securities lending	47,690	60,229
e. Deferred retirement benefits	71,693	68,104
f. Due to employee insurance program	63,358	58,868
g. Benefit payable	3,602	3,608
h. Other liabilities	98,626	63,113
i. Total liabilities	$ 1,525,196	$ 1,289,880
9. Total market value of assets available for benefits (Item 7 - Item 8.i.)	$ 23,996,362	$ 25,131,828
10. Asset allocation (investments)[1]		
a. Short-term securities	14.4%	10.1%
b. Fixed income	20.8%	27.3%
c. Public equities	25.7%	24.4%
d. Global tactical asset allocation	7.0%	7.6%
e. Alternative investments	32.1%	30.6%
f. Total investments	100.0%	100.0%

[1] These asset allocations are calculated based on the dollar amounts shown in items 1. through 9. above and, due to cash flow and rebalancing timing, may be slightly different than the allocation percentages reported by the South Carolina Retirement System Investment Commission.

DRAFT

Reconciliation of System Net Assets

(Dollar amounts expressed in thousands)

	Year Ending	
	July 1, 2016	July 1, 2015
	(1)	(2)
1. Value of assets at beginning of year	$ 25,131,828	$ 25,738,521
2. Revenue for the year		
a. Contributions		
i. Member contributions	$ 754,153	$ 716,107
ii. Employer contributions	1,073,093	1,022,985
iii. Total	$ 1,827,246	$ 1,739,092
b. Income		
i. Interest, dividends, and other income	$ 338,723	$ 293,319
ii. Investment expenses	(224,772)	(41,219)
iii. Net	$ 113,951	$ 252,100
c. Net realized and unrealized gains (losses)	(279,345)	122,052
d. Total revenue	$ 1,661,852	$ 2,113,244
3. Expenditures for the year		
a. Disbursements		
i. Refunds	$ 93,694	$ 95,104
ii. Regular annuity benefits	2,668,385	2,590,299
iii. Other benefit payments	21,093	20,651
iv. Transfers to other systems	997	1,329
v. Total	$ 2,784,169	$ 2,707,383
b. Administrative expenses and depreciation	13,149	12,554
c. Total expenditures	$ 2,797,318	$ 2,719,937
4. Increase in net assets (Item 2. - Item 3.)	$ (1,135,466)	$ (606,693)
5. Value of assets at end of year (Item 1. + Item 4.)	$ 23,996,362	$ 25,131,828
6. Net external cash flow		
a. Dollar amount	$ (970,072)	$ (968,291)
b. Percentage of market value	-3.9%	-3.8%

DRAFT

Development of Actuarial Value of Assets
(Dollar amounts expressed in thousands)

		Year Ending June 30, 2016
1.	Actuarial value of assets at beginning of year	$ 27,365,921
2.	Market value of assets at beginning of year	$ 25,131,828
3.	Net new investments	
	a. Contributions	$ 1,827,246
	b. Disbursements[1]	(2,784,169)
	c. Subtotal	(956,923)
4.	Market value of assets at end of year	$ 23,996,362
5.	Net earnings (Item 4. - Item 2. - Item 3.c.)	$ (178,543)
6.	Assumed investment return rate for fiscal year	7.50%
7.	Expected return	$ 1,849,002
8.	Excess return (Item 5. - Item 7.)	$ (2,027,545)
9.	Excess return on assets as of June 30, 2016:	

	Fiscal Year Ending June 30, (1)	Excess Return (2)	Percent Deferred (3)	Deferred Amount (4)
a.	2016	$ (2,027,545)	80%	$ (1,622,036)
b.	2015	(2,792,616)	60%	(1,675,570)
c.	2014	N/A	40%	N/A
d.	2013	N/A	20%	N/A
e.	2012	N/A	0%	N/A
f.	Total			$ (3,297,606)

10.	Actuarial value of assets as of June 30, 2016 (Item 4. - Item 9.f.)	$ 27,293,968
11.	Expected actuarial value as of June 30, 2016	$ 28,425,557
12.	Asset gain (loss) for year (Item 10. - Item 11.)	$ (1,131,589)
13.	Asset gain (loss) as % of the actuarial value of assets	-4.1%
14.	Ratio of actuarial value to market value	113.7%

[1] For the year ending June 30, 2016, the investment return assumption was net of administration and investment expenses. Beginning July 1, 2016, the investment return assumption is only net of investment expenses.

DRAFT

Estimation of Yields
(Dollar amounts expressed in thousands)

		Year Ending	
		July 1, 2016	July 1, 2015
		(1)	(2)
1.	Market value yield		
	a. Beginning of year market assets	$ 25,131,828	$ 25,738,521
	b. Contributions to fund during the year	1,827,246	1,739,092
	c. Disbursements	(2,784,169)	(2,707,383)
	d. Investment income (net of investment and administrative expenses)	(178,543)	361,598
	e. End of year market assets	$ 23,996,362	$ 25,131,828
	f. Estimated dollar-weighted market value yield	-0.7%	1.4%
2.	Actuarial value yield		
	a. Beginning of year actuarial assets	$ 27,365,921	$ 26,910,740
	b. Contributions to fund during the year	1,827,246	1,739,092
	c. Disbursements	(2,784,169)	(2,707,383)
	d. Investment income (net of investment and administrative expenses)	884,970	1,423,472
	e. End of year actuarial assets	$ 27,293,968	$ 27,365,921
	f. Estimated actuarial value yield	3.3%	5.4%

DRAFT

Schedule of Funding Progress
(Dollar amounts expressed in thousands)

July 1,	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll[1]	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2002	19,298,174	22,446,574	3,148,400	86.0%	6,147,712	51.2%
2003	20,197,936	24,398,931	4,200,995	82.8%	6,240,768	67.3%
2004	20,862,659	25,977,852	5,115,193	80.3%	6,180,599	82.8%
2005	21,625,510	30,217,471	8,591,961	71.6%	6,356,489	135.2%
2006	22,293,446	32,018,519	9,725,073	69.6%	6,733,379	144.4%
2007	23,541,438	33,766,678	10,225,240	69.7%	7,093,181	144.2%
2008	24,699,678	35,663,419	10,963,741	69.3%	7,559,172	145.0%
2009	25,183,062	37,150,315	11,967,253	67.8%	7,761,808	154.2%
2010	25,400,331	38,774,029	13,373,698	65.5%	7,769,820	172.1%
2011	25,604,823	38,011,610	12,406,787	67.4%	7,687,558	161.4%
2012	25,540,749	39,457,708	13,916,959	64.7%	7,356,231	189.2%
2013	25,753,068	41,196,062	15,442,994	62.5%	7,434,820	207.7%
2014	26,910,740	42,889,614	15,978,874	62.7%	7,539,996	211.9%
2015	27,365,921	44,119,176	16,753,255	62.0%	7,765,588	215.7%
2016	27,293,968	45,859,906	18,565,938	59.5%	8,213,042	226.1%

[1] Covered payroll does not include payroll attributable to members in ORP, TERI, or working retirees.

DRAFT

Summary of Principle Assumptions and Methods

Below is a summary of the principle economic assumptions, cost method, and the method for financing the unfunded actuarial accrued liability:

Valuation date:	July 1, 2016
Actuarial cost method:	Entry Age Normal
Amortization method:	Level percentage of payroll
Amortization period for contribution rate:	30-year open period[1]
Asset valuation method:	5-Year Smoothed
Actuarial assumptions:	
Investment rate of return[2]	7.50%
Projected salary increases	3.00% to 12.50% (varies by service)
Inflation	2.25%
Post-retirement benefit adjustments[3]	1.00%
Retiree Mortality	2016 Public Retirees of South Carolina Mortality Table for Males and Females, projected using AA from the year 2016. Male rates multiplied by 100% for non-educators and 92% for educators. Female rates multiplied by 111% for non-educators and 98% for educators.

[1] The employer and member contribution rates are determined in accordance with Section 9-1-1085 of the South Carolina Code. The funding period, determined on an actuarial value of asset basis, may not exceed 30 years. Contribution rates are not permitted to decrease until the ratio of the actuarial value of assets and the actuarial accrued liability is at least 90%.

[2] This is a prescribed assumption in Section 9-16-335 of South Carolina State Code.

[3] The benefit increase is the lesser of 1.00% or $500 annually.

DRAFT

Solvency Test
(Dollar amounts expressed in thousands)

	Actuarial Accrued Liability				Portion of Aggregate Accrued Liabilities Covered by Assets		
July 1,	Active Member Contributions	Retirants & Beneficiaries	Active & Inactive Members (Employer Financed)	Valuation Assets	Active	Retirants	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2002	$ 4,512,402	$ 11,600,395	$ 6,333,777	$ 19,298,174	100.0%	100.0%	50.3%
2003	4,627,360	13,240,368	6,531,203	20,197,936	100.0%	100.0%	35.7%
2004	4,750,077	14,184,765	7,043,010	20,862,659	100.0%	100.0%	27.4%
2005	4,915,423	16,891,954	8,410,094	21,625,510	100.0%	98.9%	0.0%
2006	5,229,175	17,800,254	8,989,090	22,293,446	100.0%	95.9%	0.0%
2007	5,464,756	19,084,672	9,217,250	23,541,438	100.0%	94.7%	0.0%
2008	5,708,022	20,624,862	9,329,937	24,699,678	100.0%	92.1%	0.0%
2009	5,980,022	21,381,561	9,788,732	25,183,062	100.0%	89.8%	0.0%
2010	6,222,854	22,585,243	9,965,932	25,400,331	100.0%	84.9%	0.0%
2011	6,472,646	23,160,658	8,378,306	25,604,823	100.0%	82.6%	0.0%
2012	6,459,192	24,732,406	8,266,110	25,540,749	100.0%	77.2%	0.0%
2013	6,491,895	26,548,472	8,155,695	25,753,068	100.0%	72.6%	0.0%
2014	6,717,327	27,942,644	8,229,643	26,910,740	100.0%	72.3%	0.0%
2015	7,054,277	28,645,954	8,418,945	27,365,921	100.0%	70.9%	0.0%
2016	7,447,442	29,830,649	8,581,815	27,293,968	100.0%	66.5%	0.0%

DRAFT

SECTION D

MEMBERSHIP DATA

DRAFT

MEMBERSHIP TABLES

DRAFT

Summary of Membership Data

			July 1, 2016 (1)	July 1, 2015 (2)
1.	Active members			
	a.	Males	59,271	57,860
	b.	Females	131,652	129,458
	c.	Total members	190,923	187,318
	d.	Total annualized prior year salaries	$ 7,890,906,774	$ 7,418,513,313
	e.	Average salary	$ 41,330	$ 39,604
	f.	Average age	45.1	45.1
	g.	Average service	10.1	10.2
	h.	Member contributions with interest	$ 6,551,568,016	$ 6,209,112,712
	i.	Average contributions with interest	$ 34,315	$ 33,147
2.	Vested inactive members			
	a.	Number	20,892	20,097
	b.	Total annual deferred benefits	$ 136,821,761	$ 128,229,506
	c.	Average annual deferred benefit	$ 6,549	$ 6,381
3.	Nonvested inactive members			
	a.	Number	148,914	144,412
	b.	Member contributions with interest	$ 222,769,215	$ 209,448,786
	c.	Average contributions with interest	$ 1,496	$ 1,450
4.	Service retirees			
	a.	Number	115,338	112,242
	b.	Total annual benefits	$ 2,469,794,069	$ 2,391,772,188
	c.	Average annual benefit	$ 21,414	$ 21,309
	d.	Average age at the valuation date	69.8	69.5
5.	Disabled retirees			
	a.	Number	13,133	13,349
	b.	Total annual benefits	$ 182,525,500	$ 183,766,967
	c.	Average annual benefit	$ 13,898	$ 13,766
	d.	Average age at the valuation date	64.2	63.5
6.	Beneficiaries			
	a.	Number	9,384	9,049
	b.	Total annual benefits	$ 114,143,577	$ 108,007,534
	c.	Average annual benefit	$ 12,164	$ 11,936
	d.	Average age at the valuation date	67.7	67.6

DRAFT

Summary of Contributing Membership Data

(Dollar amounts expressed in thousands)

			June 30, 2016		June 30, 2015
			(1)		(2)
1.	**Active Members**				
	a. Number of state employees		51,018		49,938
	Total annual compensation	$	2,321,521	$	2,171,789
	b. Number of public school employees		84,916		83,865
	Total annual compensation	$	3,357,550	$	3,235,918
	c. Number of other agency employees		54,989		53,515
	Total annual compensation	$	2,211,836	$	2,010,806
	Total number of active members		190,923		187,318
	Total annual compensation	$	7,890,907	$	7,418,513
2.	**TERI Paricipants**				
	a. Number of state employees		3,165		3,241
	Total annual compensation	$	181,768	$	184,885
	b. Number of public school employees		4,302		4,592
	Total annual compensation	$	236,836	$	250,539
	c. Number of other agency employees		865		932
	Total annual compensation	$	44,803	$	47,490
	Number of active TERI partipants		8,332		8,765
	Total annual compensation	$	463,407	$	482,914
3.	**Rehired Retired Participants**				
	a. Number of state employees		3,767		3,865
	Total annual compensation	$	139,754	$	145,739
	b. Number of public school employees		7,687		7,734
	Total annual compensation	$	251,894	$	252,608
	c. Number of other agency employees		2,685		2,639
	Total annual compensation	$	115,080	$	113,722
	Number of rehired retired members		14,139		14,238
	Total annual compensation	$	506,728	$	512,069
4.	**ORP Participants**				
	a. Number of state employees		14,617		14,157
	Total annual compensation	$	896,433	$	854,020
	b. Number of public school employees		10,024		9,784
	Total annual compensation	$	397,036	$	377,080
	Number of ORP members		24,641		23,941
	Total annual compensation	$	1,293,469	$	1,231,100
5.	**All Groups Combined**				
	a. Number of state employees		72,567		71,201
	Total annual compensation	$	3,539,476	$	3,356,433
	b. Number of public school employees		106,929		105,975
	Total annual compensation	$	4,243,316	$	4,116,145
	c. Number of other agency employees		58,539		57,086
	Total annual compensation	$	2,371,719	$	2,172,018
	Total number members		238,035		234,262
	Total annual compensation	$	10,154,511	$	9,644,596

Note: Total compensation is the annualized pay for the prior year.

Summary of Historical Active Membership

		Active Members		Covered Payroll[1]		Average Annual Pay			
July 1,	Number of Employers[2]	Number	Percent Increase /(Decrease)	Amount in Thousands	Percent Increase /(Decrease)	Amount	Percent Increase /(Decrease)	Average Age	Average Service
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2002	746	189,166	-1.2%	6,147,712	2.2%	32,499	3.42%	44	10
2003	763	185,538	-1.9%	6,240,768	1.5%	33,636	3.50%	44	10
2004	763	181,827	-2.0%	6,180,599	-1.0%	33,992	1.06%	44	10
2005	768	181,022	-0.4%	6,356,489	2.8%	35,114	3.30%	44	10
2006	763	184,282	1.8%	6,733,379	5.9%	36,538	4.06%	45	10
2007	777	187,968	2.0%	7,093,181	5.3%	37,736	3.28%	45	10
2008	776	192,820	2.6%	7,559,172	6.6%	39,203	3.89%	45	10
2009	781	192,319	-0.3%	7,761,808	2.7%	40,359	2.95%	45	10
2010	800	190,239	-1.1%	7,769,820	-4.7%	40,842	1.20%	45	10
2011	803	187,611	-1.4%	7,687,558	-1.1%	40,976	0.33%	45	11
2012	806	185,748	-1.0%	7,356,231	-4.3%	39,603	-3.35%	45	10
2013	808	184,690	-0.6%	7,434,820	1.1%	40,256	1.65%	45	10
2014	810	185,265	0.3%	7,539,996	1.4%	40,698	1.10%	45	10
2015	816	187,318	1.1%	7,765,588	3.0%	41,457	1.86%	45	10
2016	812	190,923	1.9%	8,213,042	5.8%	43,018	3.77%	45	10

[1] Covered payroll is the annualized, projected compensation for the following year and does not include payroll attributable to members in ORP, TERI, or working retirees.

[2] Based on the number of employers that made a contribution during FY 2016. Also, each agency is considered to be separate participating employer for disclosure in this schedule.

DRAFT

Distribution of Active Members by Age and by Years of Service

	Years of Credited Service												
Attained Age	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 20	362	23	5	0	0	0	0	0	0	0	0	0	390
	$12,612	$13,064	$13,764	$0	$0	$0	$0	$0	$0	$0	$0	$0	$12,654
20-24	2,781	1,848	728	233	97	29	0	0	0	0	0	0	5,716
	$20,469	$26,751	$28,508	$25,910	$25,969	$32,859	$0	$0	$0	$0	$0	$0	$23,902
25-29	3,481	3,591	2,941	2,551	1,960	2,577	57	0	0	0	0	0	17,158
	$25,517	$30,119	$33,375	$34,969	$36,615	$37,637	$28,660	$0	$0	$0	$0	$0	$32,331
30-34	2,373	2,228	1,958	1,873	1,693	7,619	2,353	47	0	0	0	0	20,144
	$26,905	$33,488	$35,031	$37,224	$39,379	$42,329	$44,756	$40,930	$0	$0	$0	$0	$38,382
35-39	2,110	2,023	1,659	1,412	1,304	5,337	5,947	2,060	22	0	0	0	21,874
	$27,216	$32,636	$36,441	$38,656	$41,004	$43,715	$48,825	$51,530	$42,705	$0	$0	$0	$42,183
40-44	1,840	1,742	1,484	1,253	1,208	4,742	4,380	5,928	1,585	43	0	0	24,205
	$27,163	$31,689	$35,066	$38,039	$39,812	$43,150	$47,449	$54,948	$57,254	$44,081	$0	$0	$44,776
45-49	1,790	1,688	1,393	1,230	1,155	4,928	4,213	4,953	4,792	1,692	17	0	27,851
	$26,428	$31,574	$35,677	$34,768	$37,695	$41,870	$45,685	$51,588	$59,717	$59,138	$41,061	$0	$45,882
50-54	1,641	1,371	1,212	1,052	926	4,480	4,084	4,336	3,348	3,614	472	7	26,543
	$25,951	$31,442	$34,804	$37,237	$37,808	$39,309	$42,664	$46,917	$53,464	$59,624	$62,260	$51,665	$44,458
55-59	1,208	1,110	967	929	893	3,975	3,723	4,280	3,327	2,475	675	148	23,710
	$25,536	$30,657	$33,305	$35,100	$37,258	$38,660	$40,640	$44,015	$49,666	$55,612	$61,569	$61,291	$42,591
60-64	581	625	593	564	660	2,998	2,614	2,943	2,243	1,591	366	221	15,999
	$22,281	$27,902	$31,358	$33,094	$35,074	$39,049	$42,310	$45,481	$49,314	$53,898	$69,345	$61,984	$42,987
65 & Over	593	375	338	328	379	1,752	1,302	965	602	389	154	156	7,333
	$15,044	$18,621	$19,939	$25,958	$26,671	$31,059	$38,822	$43,695	$47,101	$51,059	$69,092	$78,169	$35,380
Total	18,760	16,624	13,278	11,425	10,275	38,437	28,673	25,512	15,919	9,804	1,684	532	190,923
	$24,743	$30,593	$33,852	$35,793	$37,722	$40,741	$44,791	$49,277	$54,090	$57,190	$63,934	$66,401	$41,330

DRAFT

Schedule of Annuitants by Type of Benefit

Type of Benefit/ Form of Payment	Number		Annual Benefits Amount		Average Monthly Benefit
(1)	(2)		(3)		(4)
Service:					
Maximum & QDRO	78,055	$	1,558,560,011	$	1,664
100% J&S	18,805		436,024,045		1,932
50% J&S	12,117		329,825,276		2,268
10 Years C&L	404		8,400,671		1,733
Level Income	5,957		136,984,066		1,916
Subtotal:	115,338	$	2,469,794,069		1,784
Disability:					
Maximum	10,852	$	153,458,326	$	1,178
100% J&S	1,341		14,447,924		898
50% J&S	810		12,909,441		1,328
10 Years C&L	130		1,709,809		1,096
Subtotal:	13,133	$	182,525,500		1,158
Beneficiaries:	9,384	$	114,143,577	$	1,014
Total:	137,855	$	2,766,463,146	$	1,672

DRAFT

Distribution of Annuitants by Monthly Benefit

Monthly Benefit Amount (1)	Number of Annuitants (2)	Female (3)	Male (4)	Average Service (5)
Under $200	7,275	4,766	2,509	7.03
$ 200 - 399	12,582	8,973	3,609	10.62
400 - 599	12,071	8,630	3,441	13.76
600 - 799	10,327	7,609	2,718	16.57
800 - 999	9,089	6,506	2,583	19.06
1,000 - 1,199	8,285	5,992	2,293	21.27
1,200 - 1,399	7,587	5,453	2,134	23.10
1,400 - 1,599	6,985	4,993	1,992	24.54
1,600 - 1,799	6,664	4,777	1,887	25.76
1,800 - 1,999	6,317	4,389	1,928	26.82
2,000 - 2,199	6,669	4,810	1,859	27.49
2,200 - 2,399	7,190	5,343	1,847	28.04
2,400 - 2,599	7,576	5,757	1,819	28.43
2,600 - 2,799	6,816	5,069	1,747	28.75
2,800 - 2,999	4,990	3,464	1,526	29.17
3,000 - 3,199	3,725	2,439	1,286	29.43
3,200 - 3,399	2,578	1,530	1,048	29.55
3,400 - 3,599	2,060	1,135	925	29.88
3,600 - 3,799	1,700	907	793	29.89
3,800 - 3,999	1,337	641	696	30.12
4,000 & Over	6,032	2,174	3,858	30.91
Total	137,855	95,357	42,498	21.95

DRAFT

Distribution of Average Annual Benefit by Employer and Age

Current Age	Teacher		State		Other		**Total**	
	Number of Annuitants	Average Annual Benefit Amount	Number of Annuitants	Average Annual Benefit Amount	Number of Annuitants	Average Annual Benefit Amount	**Number of Annuitants**	**Average Annual Benefit Amount**
(1)	(2)	(3)	(2)	(3)	(4)	(5)	(6)	(7)
Under 50	927	$ 9,769	998	$ 10,435	796	$ 9,614	2,721	$ 9,968
50 - 54	1,806	25,099	1,625	21,804	1,037	19,284	4,468	22,551
55 - 59	5,502	27,720	3,959	23,805	2,002	22,093	11,463	25,385
60 - 64	11,326	24,089	8,309	22,672	3,913	18,493	23,548	22,659
65 - 69	16,491	21,678	11,800	22,015	5,831	15,322	34,122	20,708
70 - 74	11,585	19,325	9,295	21,747	4,421	13,350	25,301	19,171
75 - 79	6,944	17,151	5,998	21,484	2,824	11,738	15,766	17,830
80 - 84	4,586	16,448	3,971	20,090	1,792	11,126	10,349	16,924
85 - 89	2,950	16,745	2,290	19,634	1,074	10,706	6,314	16,766
90 And Over	1,840	15,668	1,452	17,872	511	10,721	3,803	15,845
Total	63,957	$ 20,856	49,697	$ 21,529	24,201	$ 14,986	137,855	$ 20,068

DRAFT

Schedule of Retirants Added to And Removed from Rolls

(Dollar amounts except average allowance expressed in thousands)

	Added to Rolls		Removed from Rolls		Rolls End of the Year		% Increase	Average
Year Ended	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits	in Annual Benefit	Annual Benefit
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2002	7,344	$ 140,077	2,334	$ 24,531	79,064	$ 1,201,180	10.6%	$ 15,193
2003	7,866	163,867	2,510	27,662	84,420	1,337,385	11.3%	15,842
2004	7,319	151,477	2,132	22,656	89,607	1,466,206	9.6%	16,363
2005	7,203	167,748	2,143	23,537	94,667	1,610,417	9.8%	17,011
2006	4,621	118,271	2,083	24,099	97,205	1,704,589	5.8%	17,536
2007	5,944	130,286	2,252	28,455	100,897	1,806,420	6.0%	17,904
2008	6,021	132,856	2,396	30,178	104,522	1,909,098	5.7%	18,265
2009	6,190	101,813	2,698	36,834	108,014	1,974,077	3.4%	18,276
2010	6,596	151,348	3,216	44,049	111,394	2,081,376	5.4%	18,685
2011	6,336	141,242	2,358	31,382	115,372	2,191,236	5.3%	18,993
2012	9,523	205,050	2,968	44,099	121,927	2,352,188	7.3%	19,292
2013	9,088	204,581	3,319	50,142	127,696	2,506,627	6.6%	19,630
2014	7,084	148,060	3,270	49,971	131,510	2,604,716	3.9%	19,806
2015	6,640	133,490	3,510	54,660	134,640	2,683,547	3.0%	19,931
2016	6,515	133,741	3,300	50,824	137,855	2,766,463	3.1%	20,068

Includes Teacher and Employee Retention Incentive (TERI) participants.

Annual benefits added to rolls includes the benefit adjustments provided to continuing retirees.

APPENDIX A

ACTUARIAL ASSUMPTIONS AND METHODS

DRAFT

DRAFT

Summary of Actuarial Methods and Assumptions

The following presents a summary of the actuarial assumptions and methods used in the valuation of the South Carolina Retirement System.

Investment Rate of Return

Assumed annual rate of 7.50% net of investment and administrative expenses composed of a 2.25% inflation component and a 5.25% real rate of return, net of investment expenses.

This is a prescribed assumption set by another party in Section 9-16-335 of the South Carolina State Code.

Rates of Annual Salary Increase

Rates of annual salary increase are assumed to vary for the first 20 years of service due to expected merit and promotional increases which differs by employee group. Beginning with the 21st year of service, the assumed annual rate of increase is 3.00% for both groups and for all future years of service.

The 3.00% rate of increase is composed of a 2.25% inflation component and a 0.75% real rate of wage increase (productivity) component.

Active Male & Female Salary Increase Rate				
	General Employees		Teachers	
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.00% Wage Inflation	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.00% Wage Inflation
1	4.00%	7.00%	7.00%	10.00%
2	3.00%	6.00%	9.50%	12.50%
3	2.25%	5.25%	3.00%	6.00%
4	1.75%	4.75%	2.75%	5.75%
5	1.50%	4.50%	2.50%	5.50%
6	1.25%	4.25%	2.25%	5.25%
7	1.00%	4.00%	2.00%	5.00%
8	1.00%	4.00%	1.75%	4.75%
9	1.00%	4.00%	1.75%	4.75%
10	0.75%	3.75%	1.50%	4.50%
11	0.50%	3.50%	1.50%	4.50%
12	0.50%	3.50%	1.25%	4.25%
13	0.50%	3.50%	1.00%	4.00%
14	0.50%	3.50%	1.00%	4.00%
15	0.50%	3.50%	0.75%	3.75%
16	0.50%	3.50%	0.75%	3.75%
17	0.50%	3.50%	0.50%	3.50%
18	0.50%	3.50%	0.50%	3.50%
19	0.25%	3.25%	0.25%	3.25%
20	0.25%	3.25%	0.25%	3.25%
21+	0.00%	3.00%	0.00%	3.00%

Active Member Decrement Rates

a. Assumed rate of Service Retirement or TERI entry are shown in the following tables. The first table provides retirement rates for Class Two members who attain age 65 before attaining 28 years of service. The second table is based on service and is for Class Two members who attain 28 years of service before age 65. The third table provides the retirement rates applicable to Class Three members.

Annual Age Based Retirement Rates*

Age	Class Two							
	General Employees				Teachers			
	Reduced		Normal		Reduced		Normal	
	Male	Female	Male	Female	Male	Female	Male	Female
55	10%	9%	0%	0%	10%	9%	0%	0%
56	9%	10%	0%	0%	11%	9%	0%	0%
57	9%	10%	0%	0%	11%	10%	0%	0%
58	9%	11%	0%	0%	11%	10%	0%	0%
59	9%	11%	0%	0%	11%	10%	0%	0%
60	9%	11%	0%	0%	11%	10%	0%	0%
61	9%	11%	0%	0%	11%	13%	0%	0%
62	22%	20%	0%	0%	22%	20%	0%	0%
63	16%	18%	0%	0%	22%	20%	0%	0%
64	16%	18%	0%	0%	22%	20%	0%	0%
65	0%	0%	20%	22%	0%	0%	20%	25%
66	0%	0%	20%	22%	0%	0%	20%	25%
67	0%	0%	17%	19%	0%	0%	20%	20%
68	0%	0%	17%	19%	0%	0%	20%	20%
69	0%	0%	17%	19%	0%	0%	20%	20%
70	0%	0%	17%	19%	0%	0%	20%	20%
71	0%	0%	17%	19%	0%	0%	20%	20%
72	0%	0%	17%	19%	0%	0%	20%	20%
73	0%	0%	17%	19%	0%	0%	20%	20%
74	0%	0%	17%	19%	0%	0%	20%	20%
75	0%	0%	100%	100%	0%	0%	100%	100%

* Retirement rate is 50% at the later of age 62 or when the member is first eligible for a normal retirement benefit (i.e. the first age the member is eligible to concurrently commence benefits and continue employment.)

Class Two Service Based Retirement Rates*

Years of Service	General Employees		Teachers	
	Male	Female	Male	Female
28	15%	18%	7%	8%
29	10%	10%	8%	9%
30	10%	10%	8%	9%
31	10%	10%	9%	10%
32	10%	10%	10%	11%
33	18%	20%	11%	12%
34	18%	20%	12%	18%
35	18%	20%	13%	18%
36	20%	20%	14%	18%
37	20%	20%	18%	18%
38	20%	20%	17%	19%
39	20%	20%	17%	20%
40+	100%	100%	100%	100%

* Retirement rate is 50% at the later of age 62 or when the member is first eligible for a normal retirement benefit (i.e. the first age the member is eligible to concurrently commence benefits and continue employment.)

DRAFT

Class Three Retirement Rates*									
	General Employees				Teachers				
Age	Reduced		Normal		Reduced		Normal		Rule of 90
	Male	Female	Male	Female	Male	Female	Male	Female	
55	0%	0%	0%	0%	0%	0%	0%	0%	20%
56	0%	0%	0%	0%	0%	0%	0%	0%	20%
57	0%	0%	0%	0%	0%	0%	0%	0%	20%
58	0%	0%	0%	0%	0%	0%	0%	0%	20%
59	0%	0%	0%	0%	0%	0%	0%	0%	20%
60	9%	11%	0%	0%	11%	10%	0%	0%	20%
61	9%	11%	0%	0%	11%	13%	0%	0%	20%
62	22%	20%	0%	0%	22%	20%	0%	0%	20%
63	16%	18%	0%	0%	22%	20%	0%	0%	20%
64	16%	18%	0%	0%	22%	20%	0%	0%	20%
65	0%	0%	20%	22%	0%	0%	20%	25%	20%
66	0%	0%	20%	22%	0%	0%	20%	25%	20%
67	0%	0%	17%	19%	0%	0%	20%	20%	20%
68	0%	0%	17%	19%	0%	0%	20%	20%	20%
69	0%	0%	17%	19%	0%	0%	20%	20%	20%
70	0%	0%	17%	19%	0%	0%	20%	20%	20%
71	0%	0%	17%	19%	0%	0%	20%	20%	20%
72	0%	0%	17%	19%	0%	0%	20%	20%	20%
73	0%	0%	17%	19%	0%	0%	20%	20%	20%
74	0%	0%	17%	19%	0%	0%	20%	20%	20%
75	0%	0%	100%	100%	0%	0%	100%	100%	100%

* Retirement rate is 50% at the later of age 62 or when the member is first eligible for a normal retirement benefit (i.e. the first age the member is eligible to concurrently commence benefits and continue employment.)

b. Assumed rates of disability are shown in the following table.

Disability Rates				
Age	General Employees		Teachers	
	Males	Females	Males	Females
25	0.0504%	0.0440%	0.0419%	0.0458%
30	0.1008%	0.0616%	0.0629%	0.0616%
35	0.1512%	0.1232%	0.0838%	0.0616%
40	0.2520%	0.1584%	0.1572%	0.1074%
45	0.3528%	0.2288%	0.2620%	0.2200%
50	0.5040%	0.3872%	0.4192%	0.3520%
55	0.8064%	0.6160%	0.6812%	0.5720%
60	1.0080%	0.9416%	1.0480%	0.8800%
64	1.2600%	1.3112%	1.3100%	1.1000%

There is no differentation between duty and nonduty related disability benefits.

c. Active Member Mortality

Rates of active member mortality are based upon the RP-2014 Mortality Table for Employees with applicable multipliers to better reflect anticipated experience and provide margin for future improvement in mortality.

DRAFT

Active Mortality Rates (Multiplier Applied)				
Age	**General Employees**		**Teachers**	
	Males	**Females**	**Males**	**Females**
25	0.0460%	0.0164%	0.0460%	0.0147%
30	0.0429%	0.0207%	0.0429%	0.0185%
35	0.0497%	0.0272%	0.0497%	0.0243%
40	0.0597%	0.0376%	0.0597%	0.0337%
45	0.0924%	0.0624%	0.0924%	0.0558%
50	0.1602%	0.1047%	0.1602%	0.0937%
55	0.2649%	0.1589%	0.2649%	0.1422%
60	0.4454%	0.2320%	0.4454%	0.2076%
64	0.7008%	0.3220%	0.7008%	0.2881%
Multiplier	95%	95%	95%	85%

For purposes of determining active death benefits, 5% of active deaths for general employees are assumed to be duty related.

d. Rates of Withdrawal

Rate of withdrawal for active members prior to eligibility for retirement are for each employee group and differ by gender and service. Sample rates are shown in the tables below.

Withdrawal Rates - Male General Employees															
Age	**Years of Service**														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
25	0.200	0.175	0.123	0.103	0.090	0.085	0.071	0.064	0.055	0.050	0.040	0.000	0.000	0.000	0.000
30	0.200	0.175	0.123	0.103	0.090	0.085	0.071	0.064	0.055	0.050	0.040	0.040	0.037	0.034	0.031
35	0.200	0.175	0.123	0.103	0.090	0.085	0.071	0.064	0.055	0.050	0.040	0.040	0.037	0.034	0.031
40	0.200	0.175	0.123	0.103	0.090	0.085	0.071	0.064	0.055	0.050	0.034	0.034	0.034	0.034	0.031
45	0.200	0.175	0.123	0.103	0.090	0.085	0.071	0.064	0.055	0.050	0.031	0.031	0.029	0.026	0.023
50	0.200	0.175	0.123	0.103	0.090	0.085	0.071	0.064	0.055	0.050	0.020	0.020	0.020	0.020	0.020
55	0.200	0.175	0.123	0.103	0.090	0.085	0.071	0.064	0.055	0.050	0.010	0.010	0.010	0.010	0.010
60	0.200	0.175	0.123	0.103	0.090	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Age	**Years of Service (Continued)**													
	15	16	17	18	19	20	21	22	23	24	25	26	27	28+
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.029	0.026	0.023	0.020	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.029	0.026	0.023	0.020	0.018	0.015	0.013	0.011	0.010	0.009	0.008	0.000	0.000	0.000
45	0.020	0.020	0.020	0.020	0.018	0.015	0.013	0.011	0.010	0.009	0.008	0.007	0.006	0.000
50	0.020	0.018	0.015	0.013	0.011	0.010	0.010	0.010	0.010	0.009	0.008	0.007	0.006	0.000
55	0.010	0.010	0.010	0.010	0.010	0.010	0.009	0.008	0.007	0.006	0.000	0.000	0.000	0.000
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

DRAFT

Withdrawal Rates - Female General Employees

Age	Years of Service														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
25	0.230	0.217	0.141	0.118	0.101	0.097	0.084	0.075	0.067	0.057	0.046	0.000	0.000	0.000	0.000
30	0.230	0.217	0.141	0.118	0.101	0.097	0.084	0.075	0.067	0.057	0.046	0.046	0.042	0.038	0.034
35	0.230	0.217	0.141	0.118	0.101	0.097	0.084	0.075	0.067	0.057	0.046	0.046	0.042	0.038	0.034
40	0.230	0.217	0.141	0.118	0.101	0.097	0.084	0.075	0.067	0.057	0.038	0.038	0.038	0.038	0.034
45	0.230	0.217	0.141	0.118	0.101	0.097	0.084	0.075	0.067	0.057	0.034	0.034	0.030	0.026	0.023
50	0.230	0.217	0.141	0.118	0.101	0.097	0.084	0.075	0.067	0.057	0.020	0.020	0.020	0.020	0.020
55	0.230	0.217	0.141	0.118	0.101	0.097	0.084	0.075	0.067	0.057	0.012	0.012	0.012	0.012	0.012
60	0.230	0.217	0.141	0.118	0.101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Age	**Years of Service (Continued)**														
	15	16	17	18	19	20	21	22	23	24	25	26	27	28+	
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
30	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
35	0.030	0.026	0.023	0.020	0.018	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
40	0.030	0.026	0.023	0.020	0.018	0.016	0.014	0.013	0.012	0.011	0.010	0.000	0.000	0.000	
45	0.020	0.020	0.020	0.020	0.018	0.016	0.014	0.013	0.012	0.011	0.010	0.009	0.008	0.000	
50	0.020	0.018	0.016	0.014	0.013	0.012	0.012	0.012	0.012	0.011	0.010	0.009	0.008	0.000	
55	0.012	0.012	0.012	0.012	0.012	0.012	0.011	0.010	0.009	0.008	0.000	0.000	0.000	0.000	
60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Withdrawal Rates - Male Teachers

Age	Years of Service														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
25	0.000	0.217	0.145	0.117	0.098	0.083	0.071	0.061	0.050	0.042	0.039	0.000	0.000	0.000	0.000
30	0.000	0.217	0.145	0.117	0.098	0.083	0.071	0.061	0.050	0.042	0.039	0.030	0.030	0.029	0.028
35	0.000	0.217	0.145	0.117	0.098	0.083	0.071	0.061	0.050	0.042	0.039	0.030	0.030	0.029	0.028
40	0.000	0.217	0.145	0.117	0.098	0.083	0.071	0.061	0.050	0.042	0.039	0.029	0.029	0.029	0.028
45	0.000	0.217	0.145	0.117	0.098	0.083	0.071	0.061	0.050	0.042	0.039	0.028	0.027	0.026	0.024
50	0.000	0.217	0.145	0.117	0.098	0.083	0.071	0.061	0.050	0.042	0.039	0.022	0.022	0.022	0.022
55	0.000	0.217	0.145	0.117	0.098	0.083	0.071	0.061	0.050	0.042	0.039	0.013	0.013	0.013	0.013
60	0.000	0.217	0.145	0.117	0.098	0.083	0.071	0.061	0.050	0.042	0.039	0.008	0.008	0.008	0.008
Age	**Years of Service (Continued)**														
	15	16	17	18	19	20	21	22	23	24	25	26	27	28+	
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
30	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
35	0.027	0.026	0.024	0.022	0.020	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
40	0.027	0.026	0.024	0.022	0.020	0.017	0.015	0.014	0.013	0.012	0.011	0.000	0.000	0.000	
45	0.022	0.022	0.022	0.022	0.020	0.017	0.015	0.014	0.013	0.012	0.011	0.010	0.009	0.000	
50	0.022	0.020	0.017	0.015	0.014	0.013	0.013	0.013	0.013	0.012	0.011	0.010	0.009	0.000	
55	0.013	0.013	0.013	0.013	0.013	0.013	0.012	0.011	0.010	0.009	0.008	0.008	0.008	0.000	
60	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.000	0.000	0.000	0.000	

DRAFT

Withdrawal Rates - Female Teachers

Age	Years of Service														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
25	0.000	0.202	0.125	0.103	0.089	0.074	0.069	0.057	0.053	0.046	0.037	0.000	0.000	0.000	0.000
30	0.000	0.202	0.125	0.103	0.089	0.074	0.069	0.057	0.053	0.046	0.037	0.030	0.030	0.027	0.024
35	0.000	0.202	0.125	0.103	0.089	0.074	0.069	0.057	0.053	0.046	0.037	0.030	0.030	0.027	0.024
40	0.000	0.202	0.125	0.103	0.089	0.074	0.069	0.057	0.053	0.046	0.037	0.030	0.027	0.027	0.024
45	0.000	0.202	0.125	0.103	0.089	0.074	0.069	0.057	0.053	0.046	0.037	0.024	0.022	0.020	0.018
50	0.000	0.202	0.125	0.103	0.089	0.074	0.069	0.057	0.053	0.046	0.037	0.018	0.016	0.016	0.016
55	0.000	0.202	0.125	0.103	0.089	0.074	0.069	0.057	0.053	0.046	0.037	0.010	0.009	0.009	0.009
60	0.000	0.202	0.125	0.103	0.089	0.074	0.069	0.057	0.053	0.046	0.037	0.006	0.006	0.006	0.006

Age	Years of Service (Continued)													
	15	16	17	18	19	20	21	22	23	24	25	26	27	28+
25	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
35	0.022	0.020	0.018	0.016	0.014	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
40	0.022	0.020	0.018	0.016	0.014	0.012	0.011	0.010	0.009	0.008	0.007	0.000	0.000	0.000
45	0.016	0.016	0.016	0.016	0.014	0.012	0.011	0.010	0.009	0.008	0.007	0.006	0.006	0.000
50	0.016	0.014	0.012	0.011	0.010	0.009	0.009	0.009	0.009	0.008	0.007	0.006	0.006	0.000
55	0.009	0.009	0.009	0.009	0.009	0.009	0.008	0.007	0.006	0.006	0.006	0.006	0.006	0.000
60	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.000	0.000	0.000	0.000

Refund of Member Contributions

The following percentage of vested members are assumed to elect to receive a refund of contributions upon termination of employment prior to becoming eligible to commence a service retirement benefit. This assumption is based on the plan's experience.

Age:	Less than 40	40 - 49	50 or More
Refund rate:	45%	40%	35%

Post Retirement Mortality

a. Healthy retirees and beneficiaries – The 2016 Public Retirees of South Carolina Mortality Table for Males and the 2016 Public Retirees of South Carolina Mortality Table for Females**,** projected using the AA projection table from the year 2016 and with multipliers based on plan experience. The following are sample rates of the base table:

DRAFT

Nondisabled Annuitant Mortality Rates Before Projection (Multiplier Applied)				
Age	General Employees		Teachers	
	Males	Females	Males	Females
50	0.2038%	0.1454%	0.1875%	0.1284%
55	0.3205%	0.2465%	0.2949%	0.2177%
60	0.5863%	0.4265%	0.5394%	0.3765%
65	1.0198%	0.5924%	0.9382%	0.5230%
70	1.5718%	0.9640%	1.4461%	0.8511%
75	2.7195%	1.8534%	2.5019%	1.6363%
80	5.0493%	3.7276%	4.6454%	3.2910%
85	9.1594%	7.0538%	8.4266%	6.2277%
90	15.9042%	12.3489%	14.6319%	10.9026%
Multiplier	100%	111%	92%	98%

The following table provides the life expectancy for individuals retiring in future years based on the assumption with full generational projection:

Life Expectancy for an Age 65 Retiree in Years				
Employee Type	Year of Retirement			
	2020	2025	2030	2035
General Employee – Male	20.6	20.9	21.3	21.6
General Employee – Female	22.7	22.8	23.0	23.2
Teacher – Male	21.2	21.5	21.9	22.2
Teacher - Female	23.6	23.8	24.0	24.1

b. A separate table of mortality rates is used for disabled retirees based on the RP-2014 Disabled Mortality table projected using the AA projection table from the year 2014 and with multipliers based on plan experience. The following are sample rates of the base table:

Disabled Annuitant Mortality Rates (Multiplier Applied)				
Age	General Employees		Teachers	
	Males	Females	Males	Females
50	2.5494%	1.4884%	2.5494%	1.4884%
55	2.9211%	1.8099%	2.9211%	1.8099%
60	3.3255%	2.1249%	3.3255%	2.1249%
65	3.9606%	2.6075%	3.9606%	2.6075%
70	5.0433%	3.5254%	5.0433%	3.5254%
75	6.7859%	5.1306%	6.7859%	5.1306%
80	9.5770%	7.6295%	9.5770%	7.6295%
85	14.1629%	11.3025%	14.1629%	11.3025%
90	21.6256%	16.5815%	21.6256%	16.5815%
Multiplier	125%	125%	125%	125%

Asset Valuation Method

The actuarial value of assets is equal to the market value, adjusted for the five-year phase in of the actual investment return in excess of (or less than) the expected investment return on a market value of asset basis. This five-year phase in begins with the investment experience for

DRAFT

the fiscal year ending June 30, 2016. The actual return is calculated net of investment expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's market value of assets, adjusted for contributions, benefits paid, and refunds.

Expected earnings are determined using the assumed investment rate of return and the beginning of year actuarial value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses.

Actuarial Cost Method

The Entry Age Normal actuarial cost method allocates the System's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level percent of payroll necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

An unfunded accrued liability exists in the amount equal to the excess of accrued liability over valuation assets. The amortization period of the System is the number of years required to fully amortize the unfunded accrued liability, on an actuarial value of asset basis, with the expected amount of employer contributions in excess of the employers' portion of the normal cost.

Note, the principle financial measurement calculations in this actuarial valuation, which include the unfunded actuarial accrued liability, funded ratio, contributions rates, and funding period, are based on an actuarial value of assets (smoothed value) basis. The actuarial value of assets is a calculated asset value which may be greater than or less than the market value of assets and is used to dampen some of the volatility in the market value of assets. As a result, many of these measures would be different if they were determined on a market value of asset basis.

DRAFT

Development of the Contribution Rate and Funding Period

The calculation of the employer and member contribution rate as well as the derived funding period takes into account several differences in the contributions paid by the various members as well as the delayed timing (if any) in the effective date of the new contribution rate. Specifically, the factors that are reflected in the calculation of the contribution rate include:

1) The anticipated difference in expected contributions received by the System from members and employers as a result of a 24-month delay in effective date of the contribution rate increase after the valuation date.

2) The cost (normal cost and actuarial accrued liability) due to incidental death benefits provided to members in the ORP.

3) Member and employer contributions made on the payroll of working retirees and members participating in TERI are being used to finance the unfunded actuarial accrued liability since these members do not have a normal cost. Also, the number of working retirees is expected to decrease due to changes in working after retirement provisions enacted with Act 278 and TERI will be completely eliminated after June 30, 2018.

4) The money collected on the payroll of member in ORP that is allocated to finance the unfunded liability in SCRS, which is the SCRS employer contribution rate less 5%, is less than the money collected on the payroll of members in SCRS to finance the unfunded actuarial accrued liability.

5) For purposes of calculating the amortization cost and funding period, discrete pay increases and continuous interest was assumed, with amortization payments made at the end of each month.

Unused Annual Leave

To account for the effect of unused annual leave in Annual Final Compensation (AFC) of Class Two members, the AFC for Class Two members is increased 2.14% at their date of retirement. Unused annual leave is not included in the calculation of the AFC for Class Three members.

Unused Sick Leave

To account for the effect of unused sick leave on credited service for Class Two members, the service of active Class Two members who retire is increased 3 months. Unused sick leave is not included in determining the credited service for Class Three members.

Future Post-Retirement Benefit Adjustments

Benefits are assumed to increase by the lesser of 1.00% annually or $500 beginning on the July 1st following the receipt of 12 monthly benefit payments. The $500 limit in the annual increase is not indexed to escalate in future years.

Payroll Growth Rate

The total annual payroll of active members (also applies to TERI, ORP and rehired retiree participants) is assumed to increase at an annual rate of 3.00%. This rate represents the underlying expected annual rate of wage inflation and does not anticipate increases in the number of members.

Other Assumptions

1. Valuation payroll (used for determining the amortization contribution rate): Prior fiscal year payroll projected forward one year using the overall payroll growth rate. This was determined separately for TERI, and return to work employees by dividing the actual

DRAFT

member contributions received during the prior fiscal year by the member contribution rate in effect for that year, and then projecting that amount forward one year.

2. The normal cost rate is increased by 0.12% to account for administrative expenses that are paid with plan assets.
3. Individual salaries used to project benefits: Actual salaries from the past fiscal year are used to determine the final average salary as of the valuation date. For future salaries, the salary from the last fiscal year is projected forward with one year's salary scale.
4. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported salaries represent amounts paid to members during the year ended on the valuation date.
5. Percent married: 100% of male and 100% of female employees are assumed to be married.
6. Age difference: Males are assumed to be three years older than their spouses.
7. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an immediate life annuity.
8. Inactive Population: All non-vested members are assumed to take an immediate refund.
9. There will be no recoveries once disabled.
10. Decrement timing: Terminations for public school employees are assumed to occur at the beginning of the year. Decrements of all types are assumed to occur mid-year.
11. 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.
12. Decrement relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
13. 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. For valuation purposes, the member contribution rate projected to be in effect after FY 2016 is 9.13% of pay.
14. Benefit service: All members are assumed to accrue one year of eligibility service each year.
15. All calculations were performed without regard to the compensation limit in IRC Section 401(a)(17) and the benefit limit under IRC Section 415.

DRAFT

Participant Data

Participant data was securely supplied in electronic text files. There were separate files for (i) active and inactive members, and (ii) members and beneficiaries receiving benefits.

The data for active members included birth date, gender, service with the current city and total vesting service, salary, and employee contribution account balances. For retired members and beneficiaries, the data included date of birth, gender, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and form of payment code.

Salary supplied for the current year was based on the annualized earnings for the year preceding the valuation date.

Assumptions were made to correct for missing or inconsistent data. These had no material impact on the results presented.

DRAFT

APPENDIX B

BENEFIT PROVISIONS

DRAFT

SUMMARY OF BENEFIT PROVISIONS FOR SOUTH CAROLINA RETIREMENT SYSTEM (SCRS)

Effective Date: July 1, 1945.

Administration: The South Carolina Public Employee Benefit Authority is responsible for the general administrative operations and day to day management of the Plan.

Type of Plan: This is a qualified governmental defined benefit retirement plan. Under GASB Statements No. 27, 67, and 68, it is considered to be a cost-sharing multiple-employer plan.

Eligibility: This System covers all permanent full-time or part-time employees of a covered employer (i.e. public school, state employer, city, county, and other local public governmental entity), unless specifically exempted by Statute or participate in the State Optional Retirement Program (ORP). Also, beginning with the 2012 general election, newly elected officials of the South Carolina General Assembly are also covered by this system.

Employee Contributions: Members are contributing 8.66% of earnable compensation for FY 2017. Furthermore, in the event that these contribution rates are insufficient to maintain a 30-year amortization period, the Board shall increase the employer and member contribution rates by an equal amount (i.e. maintain at least a 2.90% differential between the employer and member rates) as necessary to maintain a 30-year funding period. The employer and member contribution rates may not decrease until the plan attains a 90% funded ratio. These contributions are "picked-up" under Section 414(h) of the Internal Revenue Code. Contributions are credited with interest at the rate of 4.0% per annum while the member is actively employed.

Average Final Compensation (AFC): The monthly average of the member's highest 12 consecutive quarters of earnable compensation (highest 20 consecutive quarters for Class Three members, members who are hired after June 30, 2012). Earnable compensation is the compensation that would be payable to a member if the member worked a full, normal working time, which includes gross salary, sick pay, and deferrals. Compensation due to overtime earned after December 31, 2012 will not be included unless that compensation is for time that is mandated by the employer.

The calculation of the AFC for Class One and Class Two members also includes up to 45 days pay for unused annual leave paid at termination. Members joining the System after January 1, 1996, have their compensation limited in accordance with IRC Section 401(a)(17) for determining benefits.

DRAFT

***Service Retirement (Unreduced)*:**

a. Eligibility: Class Two members may retire with an unreduced benefit at age 65 with five years of earned service or after 28 years of creditable service, if earlier. Class Three members may retire with an unreduced benefit at age 65 with eight years of earned service or after the satisfying the rule of 90 (i.e. age plus credited service equals or exceeds 90).

b. Monthly Benefit: 1.82% times the member's AFC times their years of creditable service.

c. Payment Forms: Maximum retirement allowance (Option A) and survivor allowances under Options B and C.

Service Retirement (Reduced):

a. Eligibility: Class Two members may retire with a reduced benefit upon attaining: (1) age 55 with 25 years of creditable service (minimum of 5 years of earned service), or (2) age 60 with five years of earned service. Class Three members may retire with a reduced benefit upon attaining age 60 with eight years of earned service.

b. Reduction: A Class Two member's benefit will be reduced by either an age or service based reduction factor described below, whichever results in the most favorable benefit. A Class Three member's benefit will be reduced by the age based reduction factor described below.

   Age Based: Members retiring after age 60 will have their benefit reduced at the rate of 5% per year for each year of their retirement age precedes age 65.

   Service Based: 4% per year for each year of creditable service that is less than 28.

c. Payment Forms: Maximum retirement allowance (Option A) and survivor allowances under Options B and C.

Disability Retirement:

a. Eligibility: The eligibility for a disability retirement will be based upon the member's entitlement for Social Security disability benefits.

b. Monthly Benefit: The net monthly disability benefit payable is equal to the member's benefit based on their credited service and AFC at the time of their disability.

c. Payment Form: Maximum retirement allowance (Option A) and survivor allowances under Options B and C.

d. Death while Disabled: A disabled member is treated as a retired member for purposes of determining a death benefit.

DRAFT

***Vesting and Refunds*:**

a. Eligibility: All members who are not vested are eligible for a refund when they terminate service. Class Two members are vested after five (5) years of earned service. Class Three members are vested after eight (8) years of earned service. Vested members may also elect to receive a refund in lieu of the deferred termination benefit described below.

b. Amount: The refund benefit is the accumulated value of the member's contributions plus interest credited by the fund while they were actively employed. Members do not earn interest on their employee contribution account balance while they are inactive.

***Deferred Termination Benefit*:**

a. Eligibility: Member must be vested (i.e. 5 years of earned service for Class Two members and 8 years of earned service for Class Three members) and must elect to leave his/her contributions on deposit.

b. Monthly Benefit: Same as the unreduced or reduced service retirement benefit, based on service and AFC at termination, and commencing once the member is eligible.

c. Payment Form: Maximum retirement allowance (Option A) and survivor allowances under Options B and C.

d. Death Benefit: The beneficiary of an inactive member who dies is entitled to receive the amount of the member's accumulated contributions (with interest). If the member met service eligibility requirement at their time of death, the beneficiary is eligible for a monthly survivor annuity benefit.

***Death while an Active Contributing Member*:**

a. In General: A refund of the member's accumulated contributions (with interest) is paid to the beneficiary of a deceased member.

b. Beneficiary Annuity: If the deceased member (i) attained 5 or more years of earned service and (ii) had attained the age of 60 or had accumulated 15 or more years of creditable service, may elect to receive, in lieu of the accumulated contributions, a monthly benefit for life of the beneficiary determined under "Option B" described under the Optional Forms of Benefit. For purposes of the benefit calculation, a member under the age of 60 with less than 28 years of creditable service is assumed to be 60 years of age and no age reduction applies.

***Optional Forms of Benefit*:** The System permits members to elect from three forms of benefit at retirement. In each case the benefit amount is adjusted to be actuarially equivalent to the "Option A" form. The optional forms are:

a. Option A (Maximum Retirement Allowance): A life annuity. Upon the member's death, any remaining member contributions and interest will be paid to the member's designated beneficiary.

DRAFT

b. Option B (100% Joint & Survivor with Pop-up): A reduced annuity payable as long as either the member or his/her spouse is living. In the event the member's designated beneficiary predeceases the member, then the member shall receive a retirement allowance equal to the maximum retirement allowance (Option A), plus any applicable benefit adjustments that would have been granted.

c. Option C (50% Joint & Survivor with Pop-up): A reduced annuity payable during the member's life, and continues after the member's death at 50% of the rate paid to the member for the life of the member's designated beneficiary. In the event the member's designated beneficiary predeceases the member, then the member shall receive a retirement allowance equal to the maximum retirement allowance (Option A), plus any applicable benefit adjustments that would have been granted.

***Incidental Death Benefit*:**

a. Active Employees: The beneficiary (or estate) of an active employee of an employer participating in the Preretirement Death Benefit Program who completes at least one full year of membership service, will receive a death benefit equal to the member's annual earnable compensation at the time of death.

The one-year membership requirement is waived for members whose death is a result of an injury arising out of and in the course of performing his duties.

For purposes of incidental death benefits, active employees include those members who are receiving a retirement allowance and are actively reemployed and contributing to the system with a participating employer.

b. Post Employment: The beneficiary (or estate) of a retiree, both current and retiree, of an employer participating in the Preretirement Death Benefit Program will receive a one-time payment upon the retiree's death. The amount of the one-time payment is based on the retiree's years of credited service at retirement.

Years of Service Credit	Death Benefit
10 or more, but less than 20	$2,000
20 or more, but less than 28	$4,000
28 or more	$6,000

DRAFT

Postretirement Benefit Increases: Benefits paid to retired members or surviving spouses are increased annually in an amount equal to the lesser of 1.00% of the pension benefit or $500. The $500 limit in the annual increase is not indexed to escalate in future years.

A member electing a reduced early retirement is ineligible to receive a benefit increase until the second July 1 after the earlier of:

(1) the member attains age 60, or

(2) the member would have 28 years of creditable service had he not retired.

Teacher and Employee Retention Incentive Program (TERI)**:**

a. Eligibility: Active member eligible for a service retirement benefit.

b. Benefits: A member electing to participate in the program agrees to continue employment for a period not to exceed five years. During this period, the member's service retirement benefit is placed in the system's trust fund on behalf of the member. No interest is paid on the member's deferred monthly benefit during the program period. Upon termination of the program, the member must receive the balance in the account.

c. Other Adjustments: After June 30, 2005, the System shall recalculate the member's final compensation to reflect compensation increases earned after participating in the program. The AFC shall also include up to 45 days of unused annual leave.

d. Death while in TERI: If a member dies during the program period, the member's designated beneficiary will receive a distribution of the balance of benefits accumulated in the member's TERI account.

e. As a result of the pension reform legislation enacted in June 2012 (Act 278), the program will be closed and no members may participate in TERI after June 30, 2018.

DRAFT

APPENDIX C

GLOSSARY

DRAFT

GLOSSARY

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or ***Funding Method:*** A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ADC.

Actuarial Gain or ***Actuarial Loss:*** A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the Fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)

DRAFT

b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and

c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial valuation for a governmental retirement system typically also includes calculations that provide the financial information of the plan, such as the funded ratio, unfunded actuarial accrued liability and the ADC.

Actuarial Value of Assets or ***Valuation Assets:*** The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: That portion of the pension plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

DRAFT

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan that is not a Defined Contribution Plan. Typically a defined benefit plan is one in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA, although GASB 25 reporting requires the use of the AVA.

Funding Period or ***Amortization Period:*** The term "Funding Period" is used two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ADC. This funding period is chosen by the Board of Trustees. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 67 and ***GASB 68***: Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting and reporting rules for public retirement systems and the employers that sponsor, participate in, or contribute to them. Statement No. 67 sets the accounting rules for the financial reporting of the retirement systems, while Statement No. 68 sets the rules for the employers that sponsor, participate in, or contribute to public retirement systems.

DRAFT

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but may not decrease by exactly one year in the subsequent year's actuarial valuation. In some instances, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In other instances, such as the case with the South Carolina Retirement System (SCRS) and Police Officers Retirement System (PORS), the amortization period denotes the expected number of years until the plan attains a 100% funded ratio (on an actuarial value of asset basis), based on the contribution rate that is in effect. In this instance, the amortization period may "float" from year to year, meaning it could increase, decrease, or remain relatively unchanged from the amortization period in the prior year's valuation.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

DRAFT

DRAFT

POLICE OFFICERS RETIREMENT SYSTEM (PORS)

ACTUARIAL VALUATION REPORT

AS OF JULY 1, 2016

GRS Gabriel Roeder Smith & Company
Consultants & Actuaries
5605 N. MacArthur Blvd.
Suite 870
Irving, TX 75038-2631
469.524.0000 phone
469.524.0003 fax
www.gabrielroeder.com

November 28, 2016

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

Subject: Actuarial Valuation as of July 1, 2016

Dear Members of the Board:

This report describes the current actuarial condition of the Police Officers Retirement System (PORS), determines the calculated employer and member contribution rates, and analyzes changes in this system's financial condition. In addition, the report provides various summaries of the data. A separate report is issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements No. 67 and 68. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of July 1, the first day of the plan year for PORS. This report was prepared at the request of the Board of Directors of the South Carolina Public Employee Benefit Authority (Board) and is intended for use by the Public Employee Benefit Authority (PEBA) staff and those designated or approved by the Board.

FINANCING OBJECTIVES AND FUNDING POLICY

The employer and member contribution rate is determined in accordance with Section 9-11-225 of the South Carolina Code. As specified by the Code, in the event the scheduled employer and member contribution rate is insufficient to maintain a thirty-year amortization period for financing the unfunded liability of the System, the Board shall increase the employer and member contribution rates in equal amounts, as necessary, to maintain a funding period that does not exceed thirty years. The Statute also allows the Board to increase the member and employer contribution rate by up to 50 basis points in a year, even if the funding period is less than 30 years. The contribution rate determined by a given actuarial valuation becomes effective twenty-four months after the valuation date. In other words, the contribution rate determined by this July 1, 2016 actuarial valuation will be used by the Board when certifying the employer and member contribution rates for the year beginning July 1, 2018 and ending June 30, 2019.

Since the employer and member contribution rates that are in effect as of July 1, 2016 are no longer sufficient to maintain a funding period that does not exceed 30 years as of this valuation date, there is a required contribution rate increase to 14.28% of pay for the employer and 9.28% of pay for the members to decrease the funding period to 30 years. The Board may also wish to

DRAFT

consider a larger increase in the contribution rates, as permitted by State Statute, to further improve in the financial security of the system.

According to State code, the Board is not permitted to decrease the employer and member contribution rates until the funded ratio of the plan is at least 90%. Also, any change in the rates must maintain the 5.00% differential between the employer and member contribution rates.

If new legislation is enacted between the valuation date and the date the contribution rate become effective, the Board may adjust the calculated rate before certifying them, in order to reflect this new legislation. Such adjustments are based on information supplied by the actuary.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVES

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches at least 100%.

The funded ratio of the System decreased from 69.2% to 66.3%. Absent favorable experience, we expect the funded ratio will remain relatively constant for the next several years then begin to gradually improve.

If the market value of assets had been used in the calculation instead of actuarial (smoothed) value of assets, the funded ratio for the System would have been 59.0%, compared to 64.5% in the prior year. The decrease in the funded ratio on a market value basis is primarily due to the use of updated actuarial assumptions and unfavorable investment experience during the last fiscal year. Specifically, the market value of assets earned a -0.47% return determined using the method specified by GASB 67 and reported in the financial statement of the South Carolina Retirement Systems for the year ending June 30, 2016. The -0.7% return documented in this report was determined on a dollar-weighted basis and is net of expenses and assumed mid-year cash flows.

ASSUMPTIONS AND METHODS

South Carolina State Code also requires that an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. An experience study was conducted for the five-year period ending June 30, 2015. The following is a summary of the assumptions that were adopted by the Board and used in preparing this actuarial valuation:

- Decrease the price inflation assumption from 2.75% to 2.25%.
- Decrease in the assumed rate of salary increases for individual members.
- Decrease the payroll growth assumption from 3.50% to 3.00%.
- Adopt new post-retirement mortality tables specific to South Carolina retiree experience. Mortality for retirees is assumed to improve based on generational projection Scale AA.

DRAFT

- Minor adjustments to the pre-retirement mortality assumption.
- Modify the rates of retirement and disability.
- Modify the asset method such that each year's investment gain or loss (determined on a market value of asset basis) is recognized over a closed five-year period at the rate of 20% per year.

The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.50% investment return assumption.

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rates and funding periods. The actuarial calculations are intended to provide information for rational decision making.

BENEFIT PROVISIONS

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2016. There were no legislative changes enacted since the previous valuation that had a measurable effect on the current valuation.

DATA

Member data for retired, active and inactive members was supplied as of July 1, 2016, by the PEBA staff. The staff also supplied asset information as of July 1, 2016. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. GRS is not responsible for the accuracy or completeness of the information provided to us by PEBA.

CERTIFICATION

We certify that the information presented herein is accurate and fairly portrays the actuarial position of PORS as of July 1, 2016.

All of our work conforms with generally accepted actuarial principles and practices, and is in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of South Carolina Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

DRAFT

The undersigned are independent actuaries and consultants. Mr. Newton and Mr. White are Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Both are experienced in performing valuations for large public retirement systems.

Sincerely,

Gabriel, Roeder, Smith & Co.

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

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

DRAFT

TABLE OF CONTENTS

DRAFT

SECTION A

EXECUTIVE SUMMARY

DRAFT

Executive Summary

(Dollar amounts expressed in thousands)

	Valuation Date: July 1, 2016	Valuation Date: July 1, 2015
Membership		
• Number of		
- Active members	26,651	26,575
- Retirees and beneficiaries	17,288	16,709
- Inactive members	15,001	14,149
- Total	58,940	57,433
• Projected payroll of active members	$1,187,195	$1,105,703
• Projected payroll for all active members, including working retirees	$1,312,199	$1,232,695
Contribution Rates[1,2]		
• Employer contribution rate	14.28%	13.74%
• Member	9.28%	8.74%
Assets		
• Market value	$3,876,036	$3,971,825
• Actuarial value	4,354,853	4,266,794
• Return on market value	-0.7%	1.4%
• Return on actuarial value	3.7%	5.7%
• Ratio - actuarial value to market value	112.4%	107.4%
• External cash flow %	-1.8%	-1.8%
Actuarial Information		
• Normal cost %	14.02%	14.16%
• Actuarial accrued liability (AAL)	$6,567,397	$6,162,095
• Unfunded actuarial accrued liability (UAAL)	2,212,544	1,895,301
• Funded ratio	66.3%	69.2%
• Funding period (years)	30	27
Reconciliation of UAAL		
• Beginning of Year UAAL	$1,895,301	$1,800,520
- Interest on UAAL	142,148	135,039
- Amortization payment	(123,814)	(113,446)
- Assumption/method changes	120,909	0
- Asset experience	160,261	73,742
- Salary experience	17,265	1,883
- Other liability experience	474	(2,437)
- Legislative Changes	0	0
• End of Year UAAL	$2,212,544	$1,895,301

[1] The contribution rates determined by the 2016 valuation are established by Section 9-11-225 of the South Carolina Code and become effective for the fiscal year beginning July 1, 2018. The employer contribution rates shown above include the cost for both the accidental and incidental death benefits.

[2] The rates shown for the 2015 and 2016 valuation are the minimum required contribution rates. State Statutes permit the Board to increase the contribution rates above the amounts shown, subject to certain limits. Effective July 1, 2016, the Board elected to increase the employer and member contribution rate to 14.24% and 9.24%, respectively.

DRAFT

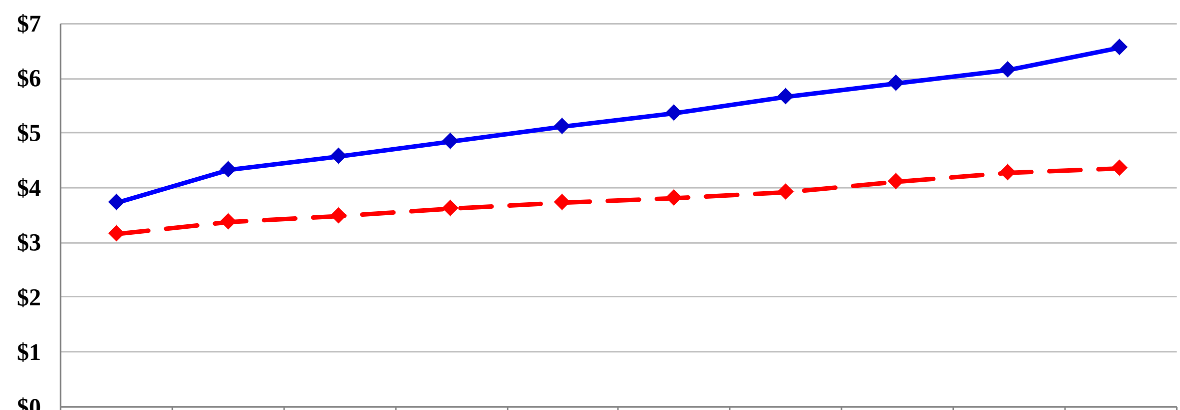
EXECUTIVE SUMMARY (CONTINUED)

The unfunded actuarial accrued liability increased by $0.317 billion since the prior year's valuation to $2.212 billion. The largest source of this increase is the $0.158 billion increase due to the recognition of investment losses that occurred in the prior fiscal years in the actuarial value of assets, followed by a $0.121 billion increase due to new assumptions adopted by the Board and used in preparing this actuarial valuation.

There is $0.479 billion in deferred investment losses as of the valuation date. Absent favorable investment experience, those deferred losses will gradually be reflected in the actuarial value of assets over the next several years.

Below is a chart with the System's historical actuarial value of assets and actuarial accrued liability. The increased difference in the actuarial value of assets and the actuarial accrued liability over the last 10 years has generally been due to a combination of: (i) the actual investment experience being less than the System's expected investment return assumption, (ii) increases in the actuarial accrued liability due to cost of living adjustments provided to the retirees prior to the enactment of retirement reform legislation in 2012, and (iii) assumption changes recommended by the actuary and adopted by the Budget and Control Board in 2011 and 2016.

Chart 1. - History of Actuarial Assets and Actuarial Accrued Liability
(Dollars in Billions)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AAL	3.7	4.3	4.6	4.9	5.1	5.4	5.7	5.9	6.2	6.6
AVA	3.2	3.4	3.5	3.6	3.7	3.8	3.9	4.1	4.3	4.4

Effective July 1, 2016, the Board elected to increase the employer and member contribution rate by 50 basis points each to 14.24% and 9.24%, respectively, to improve the financial security of the retirement system. However, these contribution rates in effect for fiscal year 2017 are no longer sufficient to maintain a funding period that does not exceed 30 years (determined on an actuarial value of asset basis). As a result, the employer and member contribution rates must increase to 14.28% and 9.28%, respectively, for fiscal year 2019 (i.e. effective July 1, 2018) to decrease the funding period to 30 years. The Board may wish to consider increasing the contribution rates, as permitted by State Statute, on July 1, 2017 to further improve in the financial security of the system.

Absent legislative changes or significantly favorable experience, we project that the employer and member contribution rates will increase within the next few years as the $0.5 billion in deferred investment losses become recognized in the actuarial value of assets over the next four years. Specifically, if emerging investment and liability experience is consistent with the current assumptions, the required employer and member contribution rates are projected to increase approximately 1.00% over the next 4 or 5 years in order to maintain a 30-year funding period.

DRAFT

SECTION B

DISCUSSION

DRAFT

Discussion

The results of the July 1, 2016 actuarial valuation of the Police Officers Retirement System are presented in this report. The primary purposes of the valuation report are to depict the current financial condition of the System, determine the annual required contribution, and analyze changes in the System's financial condition. In addition, the report provides various summaries of the data.

This section discusses the determination of the current funding requirements and the System's funded status, as well as changes in financial condition of the Police Officers Retirement System.

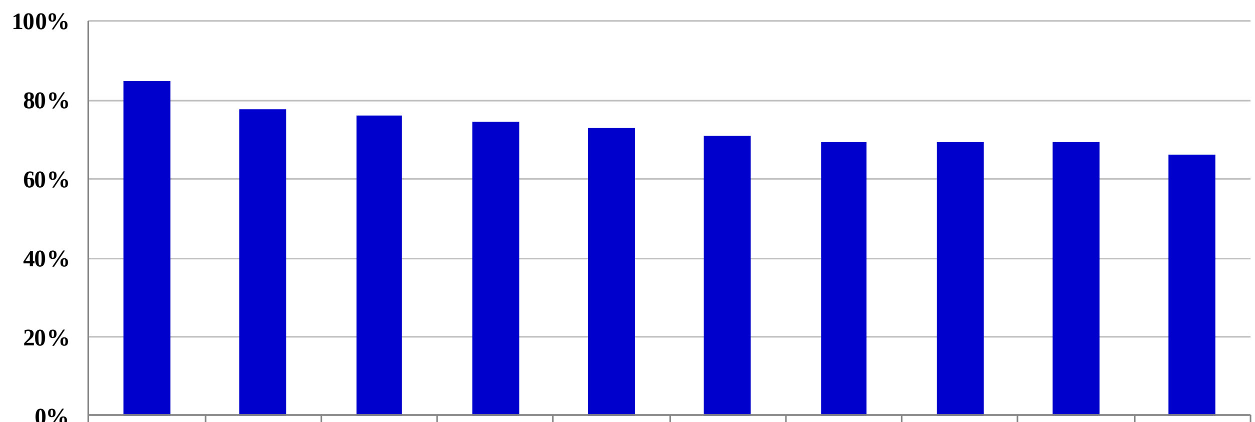
All of the actuarial and financial Tables referenced by the other sections of this Report appear in Section C. Section D provides member data and statistical information. Appendices A and B provide summaries of the principle actuarial assumptions and methods and plan provisions. Finally, Appendix C provides a glossary of technical terms that are used throughout this report.

DRAFT

Funding Progress

The funded ratio decreased from 69.2% to 66.3% since the prior valuation. Chart 2 shown below, provides a 10-year history of the system's funded ratio. This gradual decline in the funded ratio over the last 10 years has generally been due to a combination of: (i) the actual investment experience being less than the System's expected investment return assumption, (ii) increases in the actuarial accrued liability due to providing cost of living adjustments to the retirees prior to the enactment of retirement reform legislation in 2012, and (iii) assumption changes recommended by the actuary and adopted in 2011 and 2016. The funded status of the System is shown in Table 10, Schedule of Funding Progress.

Chart 2. - Funded Ratio
Actuarial Assets as a percentage of Actuarial Accrued Liabilities



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Funded Ratio	84.7%	77.9%	76.3%	74.5%	72.8%	71.1%	69.2%	69.5%	69.2%	66.3%

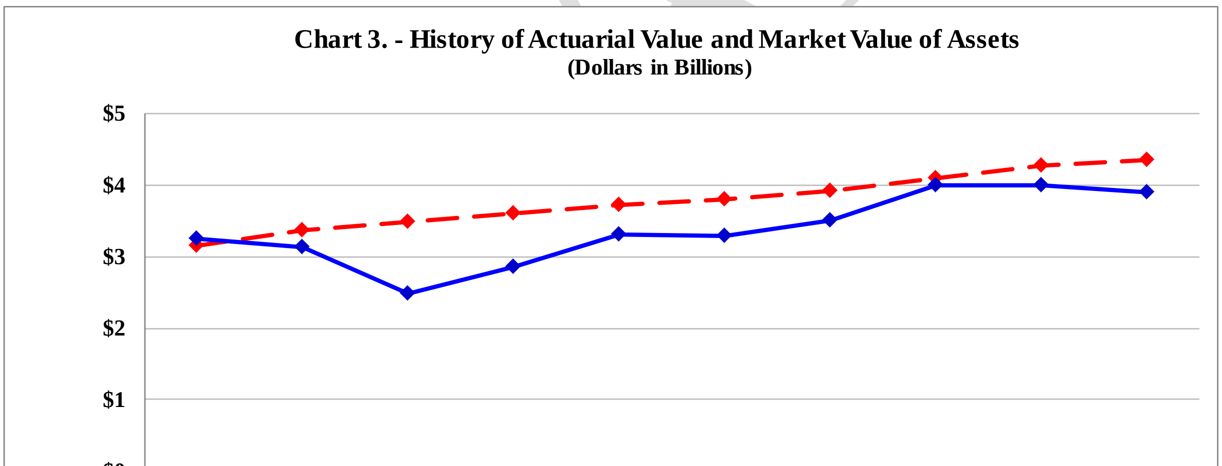
It is expected that the funded ratio (on an actuarial value of asset basis) will be relatively constant for the next three to five years then gradually improve. Also, based on the current funding policy and contribution rates, we expect the dollar amount of the unfunded actuarial accrued liability, or the difference between the actuarial accrued liability and the actuarial value of assets, to gradually increase for the next 10 to 12 years before beginning to decrease.

Asset Gains/ (Losses)

The actuarial value of assets (“AVA”) is based on a smoothed market value of assets, using a systematic approach to phase-in the difference between the actual and expected investment return on a market value of asset basis (adjusted for receipts and disbursements during the year). This is appropriate because it dampens the short-term volatility inherent in investment markets. The returns are computed net of investment expenses. The actuarial value of assets increased from $4.3 billion to $4.4 billion since the prior valuation. Table 8 shows the development of the actuarial value of assets.

The rate of return on the market value of assets during the prior plan year was -0.7% on a dollar-weighted basis; the return on an actuarial (smoothed) asset value was 3.7%, which is below the 7.50% expected annual return. The difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.

The market value of assets is less than the actuarial value of assets, which signifies that the retirement system is in a position of deferred losses. Therefore, unless the System experiences investment returns in excess of the assumed rate of return, the future recognition of these deferred losses is expected to increase the unfunded actuarial accrued liability over the next few years.



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AVA	3.2	3.4	3.5	3.6	3.7	3.8	3.9	4.1	4.3	4.4
MVA	3.3	3.1	2.5	2.9	3.3	3.3	3.5	4.0	4.0	3.9

Assets as of July 1,

Tables 6 and 7 provide asset information that was included in the annual financial statements of the System. Also, Table 9 shows the estimated yield on a market value basis and on the actuarial asset valuation method.

Actuarial Gains/ (Losses) and the Funding Period

The annual actuarial valuation is a snapshot analysis of the benefit liabilities, assets and funded position of the System as of the first day of the plan year. In any one fiscal year, the experience can be better or worse from that which is assumed or expected. The actuarial assumptions do not necessarily attempt to model what the experience will be for any one given fiscal year, but instead try to model the overall experience over many years. Therefore, as long as the actual experience of the retirement system is reasonably close to the current assumptions, the long-term funding requirements of the System will remain relatively consistent.

The unfunded actuarial accrued liability (UAAL) has increased from $1.9 billion in 2015 to $2.2 billion in 2016. The table below shows the source of the gains and losses and the impact of those gains and losses on the UAAL.

Reconciliation of UAAL
(Dollars in thousands)

• Beginning of Year UAAL	$1,895,301
- Interest on UAAL	142,148
- Amortization payment	(123,814)
- Assumption/method changes	120,909
- Asset experience	160,261
- Salary experience	17,265
- Other liability experience	474
- Legislative changes	0
• End of Year UAAL	$2,212,544

The System experienced a net $17.7 million loss due to liability experience. This net loss is approximately 0.3% of the total actuarial accrued liability.

Based on the valuation as of July 1, 2016, the funding period based on the contribution rates in effect for fiscal year 2017 are not sufficient to satisfy the 30-year funding requirement in the State code. Therefore, the member and employer contribution rates will need to increase to 14.28% and 9.28%, respectively, for fiscal year 2019 (i.e. effective July 1, 2018) in order to comply with the 30-year funding requirement (determined on an actuarial value of asset basis). The Board may wish to consider increasing the contribution rates, as permitted by State Statute, on July 1, 2017 to further improve the financial security of the system. The following page provides a table reconciling the change in the funding period from the contribution rate determined in the prior year's valuation.

DRAFT

Change in Funding Period (Years)
Based on the Employer and Member Contribution
Before Reflecting Required Increase in Contribution Rate
for FY 2018

• Prior Year	27.3
- Expected experience	(1.0)
- Assumption and method changes	7.6
- Asset experience	7.6
- Demographic experience	(2.4)
- Legislative changes	0.0
- Board approved rate increase for FY 2017	(8.7)
- Total change	3.1
• Current Year Valuation	30.4

Since the current funding period is close to the maximum permitted 30 years, it is possible that any near-term adverse experience, whether investment or demographic related, will require an increase to future contribution rates. In fact, absent favorable investment experience, we expect the funding period to increase in future years as deferred investment losses become fully recognized in the actuarial value of assets and calculation of the contribution rates.

Also, note that the current funding policy utilizes a level percentage of payroll amortization, which assumes that covered payroll will increase at the rate of 3.00% per year in the future. As a result, the amortization payments will not be sufficient to cover all of the interest charges on the UAAL until the funding period decreases to approximately 20 years. Therefore, stakeholders should expect the dollar amount of the unfunded actuarial accrued liability to gradually increase until the funding period decreases below 20 years.

DRAFT

Actuarial Assumptions and Methods

In determining costs and liabilities, actuaries use assumptions about the future, such as probabilities of retirement, termination, death and disability, and an annual investment return assumption. South Carolina State Code also requires that an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. An experience study was conducted for the five-year period ending June 30, 2015. The following is a summary of the assumptions that were adopted by the Board and used in preparing this actuarial valuation:

- Decrease the price inflation assumption from 2.75% to 2.25%.
- Decrease in the assumed rate of salary increases for individual members.
- Decrease the payroll growth assumption from 3.50% to 3.00%.
- Adopt new post-retirement mortality tables specific to South Carolina retiree experience. Mortality for retirees is assumed to improve based on generational projection Scale AA.
- Minor adjustments to the pre-retirement mortality assumption.
- Modify the rates of retirement and disability.

The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.50% investment return assumption.

Appendix A includes a summary of the actuarial assumptions and methods used in this valuation. It is our opinion that the assumptions are internally consistent and are reasonable and reflect anticipated future experience of the System. The next experience study will be conducted no later than as of June 30, 2020.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. This report 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.

An actuarial valuation assumes that all assumptions will be met in future years, including a 7.50% return on the actuarial value of assets determined as of the actuarial valuation date. Establishing the contribution rates, funding period, and other financial metrics on an actuarial value of asset basis is consistent with applicable actuarial standards of practice, industry prevalence, and applicable provisions in South Carolina State Code.

DRAFT

Emerging experience due to liabilities or investments that is different than assumed (including the recognition of previously deferred investment losses) may result in a change in the required contribution rate and or funding period that is different than expected based on the prior actuarial valuation. Also, separate projections provided outside of this report that may illustrate the financial effect of future gains or losses on actuarial basis in subsequent years may be useful for business making decisions, but such projections should not be misunderstood as documentation of satisfaction of a 30-year amortization requirement specified in State Code.

DRAFT

Benefit Provisions

Appendix B of this report includes a summary of the benefit provisions for PORS. There were no legislative changes enacted since the previous valuation that had a measurable effect on the current valuation. Below is a summary of the retirement provisions for Class Two members, members hired prior to July 1, 2012, and Class Three members, members hired after June 30, 2012.

Summary of Retirement Provisions for:

Class Two Members (members hired prior to July 1, 2012)

- Average Final Compensation (AFC) is based on the highest twelve (12) consecutive quarters of compensation. The determination of a member's AFC also includes up to 45 days of unused annual leave paid at termination. Monthly benefits are based on one-twelfth of this amount.
- The retirement benefit is equal to 2.14% of the member's AFC times the member's credited service (years). Credited service may include up to 90 days of unused sick leave.
- Members are eligible to commence their retirement benefit after they have (i) 25 years of credited service or (ii) attained age 55 with 5 years of earned service.
- At each July 1 after their first full year of retirement, annuitants will receive an automatic post-retirement benefit adjustment equal to the lesser of 1.00% of their retirement benefit or $500 per annum.

Class Three Members (members hired after June 30, 2012)

- Average Final Compensation (AFC) is based on the highest twenty (20) consecutive quarters of compensation. The determination of a member's AFC also will not include unused annual leave paid at termination. Monthly benefits are based on one-twelfth of this amount.
- The retirement benefit is equal to 2.14% of the member's AFC times the member's credited service (years). Credited service will not include unused sick leave.
- Members are eligible to commence their retirement benefit after they have (i) 27 years of credited service or (ii) attained age 55 with 8 years of earned service.
- At each July 1 after their first full year of retirement, annuitants will receive an automatic post-retirement benefit adjustment equal to the lesser of 1.00% of their retirement benefit or $500 per annum.

DRAFT

SECTION C

ACTUARIAL TABLES

DRAFT

ACTUARIAL TABLES

DRAFT

Summary of Cost Items

(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Projected payroll of active members[1]	$ 1,187,195	$1,105,703
2.	Present value of future pay[1]	$ 8,759,337	$ 8,496,444
3.	Normal cost rate		
	a. Total normal cost rate	14.02%	14.16%
	b. Less: member contribution rate	-9.28%	-8.74%
	c. Employer normal cost rate	4.74%	5.42%
4.	Actuarial accrued liability for active members		
	a. Present value of future benefits	$ 3,710,520	$ 3,529,892
	b. Less: present value of future normal costs	1,199,236	1,156,730
	c. Actuarial accrued liability	$ 2,511,284	$ 2,373,162
5.	Total actuarial accrued liability for:		
	a. Retirees and beneficiaries	$ 3,881,514	$ 3,624,713
	b. Inactive members	174,599	164,220
	c. Active members (Item 4.c.)	2,511,284	2,373,162
	d. Total	$ 6,567,397	$ 6,162,095
6.	Actuarial value of assets	$ 4,354,853	$ 4,266,794
7.	Unfunded actuarial accrued liability (UAAL) (Item 5.d. - Item 6.)	$ 2,212,544	$ 1,895,301
8.	Annual Required Contribution Rate		
	a. Employer normal cost rate	4.74%	5.42%
	b. Employer contribution rate available to amortize the UAAL	9.54%	8.32%
	c. Total employer contribution rate	14.28%	13.74%
9.	Funding period based on the required employer contribution rate (years)	30	27
10.	Applicable statuorily required contribution rates[2]		
	a. Employer contribution rate	14.28%	13.74%
	b. Member contribution rate	9.28%	8.74%

[1] The projected payroll does not include payroll for working retirees.

[2] The applicable employer and member contribution rates are determined in accordance with Section 9-11-225 of the South Carolina Code. The contribution rate includes the cost of incidental death benefits.

DRAFT

Actuarial Present Value of Future Benefits
(Dollar amounts expressed in thousands)

			July 1, 2016 (1)	July 1, 2015 (2)
1.	Active members			
	a.	Service retirement	$ 2,980,030	$ 2,852,329
	b.	Deferred termination benefits and refunds	313,445	283,849
	c.	Survivor benefits	81,413	116,423
	d.	Disability benefits	335,632	277,291
	e.	Total	$ 3,710,520	$ 3,529,892
2.	Retired members			
	a.	Service retirement	$ 3,067,062	$ 2,878,484
	b.	Disability retirement	617,664	568,241
	c.	Beneficiaries	158,616	140,960
	d.	Incidental and accidental death benefits	38,172	37,028
	e.	Total	$ 3,881,514	$ 3,624,713
3.	Inactive members			
	a.	Vested terminations	$ 143,353	$ 136,309
	b.	Nonvested terminations	31,246	27,911
	c.	Total	$ 174,599	$ 164,220
4.	Total actuarial present value of future benefits		$ 7,766,633	$ 7,318,825

DRAFT

Analysis of Normal Cost

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Total normal cost rate		
	a. Service retirement	8.36%	8.34%
	b. Deferred termination benefits and refunds	3.82%	3.40%
	c. Survivor benefits	0.30%	0.49%
	d. Disability benefits	1.42%	1.93%
	e. Total	13.90%	14.16%
2.	Admin Expense	0.12%	N/A
3.	Less: member contribution rate	9.28%	8.74%
4.	Net employer normal cost rate	4.74%	5.42%

Note: The normal cost includes the cost of accidental and incidental death benefits.

DRAFT

Results of July 1, 2016 Valuation
(Dollar amounts expressed in thousands)

			July 1, 2016
			(1)
1.	Actuarial Present Value of Future Benefits		
	a. Present retired members and beneficiaries	$	3,881,514
	b. Present active and inactive members		3,885,119
	c. Total actuarial present value	$	7,766,633
2.	Present Value of Future Normal Contributions		
	a. Member	$	812,866
	b. Employer		386,370
	c. Total future normal contributions	$	1,199,236
3.	Actuarial Liability	$	6,567,397
4.	Current Actuarial Value of Assets	$	4,354,853
5.	Unfunded Actuarial Liability	$	2,212,544
6.	Unfunded Actuarial Liability Rate in Effect for FY 2018		9.54%
7.	Unfunded Actuarial Liability Liquidation Period		30 years

Note: The employer contribution rate includes the cost of accidential and incidental death benefits.

DRAFT

Actuarial Balance Sheet
(Dollar amounts expressed in thousands)

	July 1, 2016 (1)	July 1, 2015 (2)
1. Assets		
a. Current assets (actuarial value)		
i. Employee annuity savings fund	$ 968,722	$ 905,768
ii. Employer annuity accumulation fund	3,386,131	3,361,026
iii. Total current assets	$ 4,354,853	$ 4,266,794
b. Present value of future member contributions	$ 812,866	$ 724,747
c. Present value of future employer contributions		
i. Normal contributions	$ 386,370	$ 431,983
ii. Accrued liability contributions	2,212,544	1,895,301
iii. Total future employer contributions	$ 2,598,914	$ 2,327,284
d. Total assets	$ 7,766,633	$ 7,318,825
2. Liabilities		
a. Employee annuity savings fund		
i. Past member contributions	$ 968,722	$ 905,768
ii. Present value of future member contributions	812,866	724,747
iii. Total contributions to employee annuity savings fund	$ 1,781,588	$ 1,630,515
b. Employer annuity accumulation fund		
i. Benefits currently in payment	$ 3,881,514	$ 3,624,713
ii. Benefits to be provided to other members	2,103,531	2,063,597
iii. Total benefits payable from employer annuity accumulation fund	$ 5,985,045	$ 5,688,310
c. Total liabilities	$ 7,766,633	$ 7,318,825

System Net Assets
Assets at Market or Fair Value
(Dollar amounts expressed in thousands)

Item		July 1, 2016		July 1, 2015
(1)		(2)		(3)
1. Cash and cash equivalents (operating cash)	$	548,798	$	396,286
2. Receivables		130,850		90,227
3. Investments				
a. Short-term securities	$	109,002	$	103,494
b. Fixed income (global)		805,119		1,078,774
c. Public equities (global)		991,494		964,604
d. Global tactical asset allocation		270,382		300,528
e. Alternative investments		1,237,335		1,212,502
f. Total investments	$	3,413,332	$	3,659,902
4. Securities lending cash collateral invested	$	7,674	$	9,479
5. Prepaid administrative expenses		479		409
6. Capital assets, net of accumulated depreciation		261		291
7. Total assets	$	4,101,394	$	4,156,594
8. Liabilities				
a. Due to other Systems	$	0	$	0
b. Accounts payable		198,233		161,881
c. Investment fees payable		1,300		1,144
d. Obligations under securities lending		7,674		9,479
e. Deferred retirement benefits		0		0
f. Due to Employee Insurance Program		1,900		1,788
g. Benefit payable		236		344
h. Other liabilities		16,015		10,133
i. Total liabilities	$	225,358	$	184,769
9. Total market value of assets available for benefits (Item 7. - Item 8.i.)	$	3,876,036	$	3,971,825
10. Asset allocation (investments)[1]				
a. Net invested cash		14.7%		10.5%
b. Fixed income		20.8%		27.2%
c. Public equities		25.6%		24.3%
d. Global tactical asset allocation		7.0%		7.6%
e. Alternative investments		31.9%		30.4%
f. Total investments		100.0%		100.0%

[1] These asset allocations are calculated based on the dollar amounts shown in items 1. through 9. above and, due to cash flow and rebalancing timing, may be slightly different than the allocation percentages reported by the South Carolina Retirement System Investment Commission.

DRAFT

Reconciliation of System Net Assets
(Dollar amounts expressed in thousands)

		Year Ending	
		July 1, 2016	July 1, 2015
		(1)	(2)
1.	Value of assets at beginning of year	$ 3,971,825	$ 3,985,102
2.	Revenue for the year		
	a. Contributions		
	i. Member contributions	$ 115,188	$ 106,854
	ii. Employer contributions	175,241	166,473
	iii. Total	$ 290,429	$ 273,327
	b. Income		
	i. Interest, dividends, and other income	$ 54,132	$ 45,879
	ii. Investment expenses	(36,096)	(6,436)
	iii. Net	$ 18,036	$ 39,443
	c. Net realized and unrealized gains (losses)	(42,672)	19,262
	d. Total revenue	$ 265,793	$ 332,032
3.	Expenditures for the year		
	a. Disbursements		
	i. Refunds	$ 19,178	$ 17,453
	ii. Regular annuity benefits	337,928	323,252
	iii. Other benefit payments	3,568	3,727
	iv. Transfers to other Systems	(1,147)	(1,061)
	v. Total	$ 359,527	$ 343,371
	b. Administrative expenses and depreciation	2,055	1,938
	c. Total expenditures	$ 361,582	$ 345,309
4.	Increase in net assets (Item 2.d.- Item 3.c.)	$ (95,789)	$ (13,277)
5.	Value of assets at end of year (Item 1. + Item 4.)	$ 3,876,036	$ 3,971,825
6.	Net External Cash Flow		
	a. Dollar amount	$ (69,098)	$ (70,044)
	b. Percentage of market value	-1.8%	-1.8%

DRAFT

Development of Actuarial Value of Assets
(Dollar amounts expressed in thousands)

		Year Ending June 30, 2016
1.	Actuarial value of assets at beginning of year	$ 4,266,794
2.	Market value of assets at beginning of year	$ 3,971,825
3.	Net new investments	
	a. Contributions	$ 290,429
	b. Disbursements[1]	(359,527)
	c. Subtotal	(69,098)
4.	Market value of assets at end of year	$ 3,876,036
5.	Net earnings (Item 4. - Item 2. - Item 3.c.)	$ (26,691)
6.	Assumed investment return rate for fiscal year	7.50%
7.	Expected return	$ 295,296
8.	Excess return (Item 5. - Item 7.)	$ (321,987)
9.	Excess return on assets as of June 30, 2016:	

	Fiscal Year Ending June 30, (1)	Excess Return (2)	Percent Deferred (3)	Deferred Amount (4)
a.	2016	$ (321,987)	80%	$ (257,590)
b.	2015	(368,711)	60%	(221,227)
c.	2014	N/A	40%	N/A
d.	2013	N/A	20%	N/A
e.	2012	N/A	0%	N/A
f.	Total			$ (478,817)

10.	Actuarial value of assets as of June 30, 2016 (Item 4. - Item 9.f.)	$ 4,354,853
11.	Expected actuarial value as of June 30, 2016	$ 4,515,114
12.	Asset gain (loss) for year (Item 10. - Item 11.)	$ (160,261)
13.	Asset gain (loss) as % of the actuarial value of assets	-3.7%
14.	Ratio of actuarial value to market value	112.4%

[1] For the year ending June 30, 2016, the investment return assumption was net of administration and investment expenses. Beginning July 1, 2016, the investment return assumption is only net of investment expenses.

DRAFT

Estimation of Yields
(Dollar amounts expressed in thousands)

		Year Ending	
		July 1, 2016	July 1, 2015
		(1)	(2)
1.	Market value yield		
a.	Beginning of year market assets	$ 3,971,825	$ 3,985,102
b.	Contributions to fund during the year	290,429	273,327
c.	Disbursements	(359,527)	(343,371)
d.	Investment income (net of investment and administrative expenses)	(26,691)	56,767
e.	End of year market assets	$ 3,876,036	$ 3,971,825
f.	Estimated dollar weighted market value yield	-0.7%	1.4%
2.	Actuarial value yield		
a.	Beginning of year actuarial assets	$ 4,266,794	$ 4,105,308
b.	Contributions to fund during the year	290,429	273,327
c.	Disbursements	(359,527)	(343,371)
d.	Investment income (net of investment and administrative expenses)	157,157	231,530
e.	End of year actuarial assets	$ 4,354,853	$ 4,266,794
f.	Estimated actuarial value yield	3.7%	5.7%

DRAFT

DRAFT

Schedule of Funding Progress
(Dollar amounts expressed in thousands)

July 1,	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll[1]	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2002	2,351,100	2,527,876	176,776	93.0%	757,393	23.3%
2003	2,511,369	2,744,849	233,480	91.5%	800,394	29.2%
2004	2,616,835	2,984,584	367,749	87.7%	822,448	44.7%
2005	2,774,606	3,173,930	399,324	87.4%	850,610	46.9%
2006	2,935,841	3,466,281	530,440	84.7%	931,815	56.9%
2007	3,160,240	3,730,544	570,304	84.7%	992,849	57.4%
2008	3,363,136	4,318,955	955,819	77.9%	1,060,747	90.1%
2009	3,482,220	4,564,111	1,081,891	76.3%	1,084,154	99.8%
2010	3,612,700	4,850,457	1,237,757	74.5%	1,076,467	115.0%
2011	3,728,241	5,122,501	1,394,260	72.8%	1,087,587	128.2%
2012	3,808,934	5,357,492	1,548,558	71.1%	1,019,241	151.9%
2013	3,922,041	5,663,756	1,741,715	69.2%	1,033,189	168.6%
2014	4,105,308	5,905,828	1,800,520	69.5%	1,076,885	167.2%
2015	4,266,794	6,162,095	1,895,301	69.2%	1,105,703	171.4%
2016	4,354,853	6,567,397	2,212,544	66.3%	1,187,195	186.4%

[1] Covered payroll does not include payroll attributable to working retirees.

Summary of Principle Assumptions and Methods

Below is a summary of the principle economic assumptions, cost method, and the method for financing the unfunded actuarial accrued liability:

Valuation date:	July 1, 2016
Actuarial cost method:	Entry Age Normal
Amortization method:	Level percentage of payroll
Amortization period for contribution rate:	30-year open period[1]
Asset valuation method:	5-Year Smoothing
Actuarial assumptions:	
Investment rate of return[2]	7.50%
Projected salary increases	3.50% to 9.50% (varies by service)
Inflation	2.25%
Post-retirement benefit adjustments[3]	1.00%
Retiree mortality	The 2016 Public Retirees of South Carolina Mortality Table projected at Scale AA from the year 2016. Male rates are multiplied by 125% and female rates are multiplied by 111%.

[1] The employer and member contribution rates are determined in accordance with Section 9-11-225 of the South Carolina Code. The funding period, determined on an actuarial value of asset basis, may not exceed 30 years. Contribution rates are not permitted to decreased until the ratio of the actuarial value of assets and the actuarial accrued liability is at least 90%.

[2] This is a prescribed assumption in Section 9-16-335 of South Carolina State Code.

[3] The benefit increase is the lesser of 1.00% or $500 annually.

DRAFT

Solvency Test
(Dollar amounts expressed in thousands)

	Actuarial Accrued Liability				Portion of Aggregate Accrued Liabilities Covered by Assets		
July 1,	Active Member Contributions	Retirants & Beneficiaries	Active & Inactive Members (Employer Financed)	Valuation Assets	Active	Retirants	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2002	492,178	1,136,998	898,700	2,351,100	100.0%	100.0%	80.3%
2003	516,313	1,265,173	963,363	2,511,369	100.0%	100.0%	75.8%
2004	548,699	1,415,627	1,020,258	2,616,835	100.0%	100.0%	64.0%
2005	585,701	1,530,199	1,058,030	2,774,606	100.0%	100.0%	62.0%
2006	622,008	1,668,449	1,175,824	2,935,841	100.0%	100.0%	54.9%
2007	658,023	1,818,914	1,253,607	3,160,240	100.0%	100.0%	54.5%
2008	697,423	2,183,645	1,437,887	3,363,136	100.0%	100.0%	33.5%
2009	726,214	2,348,685	1,489,212	3,482,220	100.0%	100.0%	27.4%
2010	758,695	2,577,772	1,513,990	3,612,700	100.0%	100.0%	18.2%
2011	786,724	2,784,144	1,551,633	3,728,241	100.0%	100.0%	10.1%
2012	773,710	3,118,016	1,465,766	3,808,934	100.0%	97.3%	0.0%
2013	793,414	3,385,496	1,484,846	3,922,041	100.0%	92.4%	0.0%
2014	850,383	3,490,161	1,565,284	4,105,308	100.0%	93.3%	0.0%
2015	905,768	3,624,713	1,631,614	4,266,794	100.0%	92.7%	0.0%
2016	968,722	3,881,514	1,717,161	4,354,853	100.0%	87.2%	0.0%

DRAFT

SECTION D

MEMBERSHIP DATA

DRAFT

MEMBERSHIP TABLES

DRAFT

Summary of Membership Data

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Active members		
a.	Males	19,888	19,914
b.	Females	6,763	6,661
c.	Total members	26,651	26,575
d.	Total annualized prior year pay	$ 1,136,401,231	$ 1,053,009,549
e.	Average pay	$ 42,640	$ 39,624
f.	Average age	39.5	39.4
g.	Average service	9.8	9.7
h.	Member contributions with interest	$ 858,789,147	$ 801,795,864
i.	Average contributions with interest	$ 32,224	$ 30,171
2.	Vested inactive members		
a.	Number	2,450	2,364
b.	Total annual deferred benefits	$ 19,422,226	$ 18,916,899
c.	Average annual deferred benefit	$ 7,927	$ 8,002
3.	Nonvested inactive members		
a.	Number	12,551	11,785
b.	Member contributions with interest	$ 31,246,437	$ 27,911,054
c.	Average refund due	$ 2,490	$ 2,368
4.	Service retirees		
a.	Number	13,361	12,941
b.	Total annual benefits	$ 276,148,284	$ 265,095,859
c.	Average annual benefit	$ 20,668	$ 20,485
d.	Average age at the valuation date	64.9	64.6
5.	Disabled retirees		
a.	Number	2,578	2,475
b.	Total annual benefits	$ 53,142,503	$ 50,548,301
c.	Average annual benefit	$ 20,614	$ 20,424
d.	Average age at the valuation date	54.8	54.5
6.	Beneficiaries		
a.	Number	1,349	1,293
b.	Total annual benefits	$ 16,583,402	$ 15,684,378
c.	Average annual benefit	$ 12,293	$ 12,130
d.	Average age at the valuation date	67.7	67.5

DRAFT

Summary of Contributing Membership Data
(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Active Members		
	a. Number of State Employees	9,134	9,442
	Total Annual Compensation	$ 361,065	$ 349,087
	b. Number of Public School Employees	0	0
	Total Annual Compensation	$ 0	$ 0
	c. Number of Other Agency Employees	17,517	17,133
	Total Annual Compensation	$ 775,337	$ 703,923
	Total Number of Active Members	26,651	26,575
	Total Annual Compensation	$ 1,136,402	$ 1,053,010
2.	Rehired Retired Participants		
	a. Number of State Employees	765	777
	Total Annual Compensation	$ 27,753	$ 27,017
	b. Number of Public School Employees	53	53
	Total Annual Compensation	$ 2,202	$ 2,242
	c. Number of Other Agency Employees	1,941	2,032
	Total Annual Compensation	$ 95,048	$ 93,773
	Total Number of Rehired Retired Members	2,759	2,862
	Total Annual Compensation	$ 125,004	$ 123,032

Note: Total compensation is the annualized pay for the prior year.

DR

Summary of Historical Active Membership

July 1,	Number of Employers[2]	Active Members: Number	Active Members: Percent Increase /(Decrease)	Covered Payroll[1]: Amount in Thousands	Covered Payroll[1]: Percent Increase /(Decrease)	Average Annual Pay: Amount	Average Annual Pay: Percent Increase /(Decrease)	Average Age	Average Service
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2002	302	23,963	-3.5%	757,393	0.0%	31,607	3.59%	N/A	N/A
2003	314	23,871	-0.4%	800,394	5.7%	33,530	6.08%	N/A	N/A
2004	314	23,734	-0.6%	822,448	2.8%	34,653	3.35%	N/A	N/A
2005	314	23,795	0.3%	850,610	3.4%	35,747	3.16%	N/A	N/A
2006	314	24,813	4.3%	931,815	9.5%	37,554	5.05%	N/A	N/A
2007	313	25,645	3.4%	992,849	6.6%	38,715	3.09%	N/A	N/A
2008	313	26,427	3.0%	1,060,747	6.8%	40,139	3.68%	N/A	N/A
2009	318	26,598	0.6%	1,084,154	2.2%	40,761	1.55%	39.6	8.4
2010	322	26,568	-0.1%	1,076,467	-0.7%	40,517	-0.60%	39.8	8.7
2011	356	26,650	0.3%	1,087,587	1.0%	40,810	0.72%	39.8	9.6
2012	325	26,179	-1.8%	1,019,241	-6.3%	38,934	-4.60%	39.6	9.5
2013	356	26,194	0.1%	1,033,189	1.4%	39,444	1.31%	39.5	9.4
2014	310	26,697	1.9%	1,076,885	4.2%	40,337	2.27%	39.5	9.5
2015	312	26,575	-0.5%	1,105,703	2.7%	41,607	3.15%	39.4	9.7
2016	288	26,651	0.3%	1,187,195	7.4%	44,546	7.06%	39.5	9.8

[1] Covered payroll does not include payroll attributable to members in working retirees.

[2] Number of employers and agencies that cover employees earning benefits in PORS and that contributed to the system during the last fiscal year.

DRAFT

Distribution of Active Members by Age and by Years of Service

	Years of Credited Service												
Attained Age	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 20	28	3	0	0	0	0	0	0	0	0	0	0	31
	$25,251	$33,111	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$26,012
20-24	850	443	235	85	35	16	0	0	0	0	0	0	1,664
	$28,431	$33,381	$35,556	$36,580	$36,059	$34,092	$0	$0	$0	$0	$0	$0	$31,386
25-29	743	725	752	663	432	917	34	0	0	0	0	0	4,266
	$29,680	$34,672	$36,753	$38,045	$39,035	$41,072	$42,673	$0	$0	$0	$0	$0	$36,575
30-34	379	324	344	319	290	1,814	726	26	0	0	0	0	4,222
	$30,024	$35,362	$38,072	$38,400	$40,933	$42,862	$44,796	$45,518	$0	$0	$0	$0	$40,623
35-39	215	195	173	201	179	1,021	1,211	533	19	0	0	0	3,747
	$30,181	$35,333	$37,058	$38,425	$39,661	$42,423	$46,498	$49,683	$50,429	$0	$0	$0	$43,148
40-44	161	150	135	130	106	682	676	1,219	490	24	0	0	3,773
	$30,406	$36,307	$38,557	$37,124	$41,960	$41,276	$45,477	$50,884	$54,586	$53,896	$0	$0	$46,059
45-49	155	127	116	119	104	543	524	729	976	318	9	0	3,720
	$30,126	$36,710	$37,341	$39,182	$40,142	$42,051	$44,990	$49,151	$55,581	$60,854	$61,889	$0	$48,090
50-54	117	84	86	68	79	430	360	401	454	375	86	4	2,544
	$33,101	$36,653	$40,155	$36,680	$39,248	$40,187	$42,302	$47,607	$49,921	$59,166	$68,928	$53,663	$46,617
55-59	51	51	40	59	58	274	245	250	232	169	85	28	1,542
	$27,577	$32,513	$40,002	$37,302	$40,097	$39,808	$42,088	$47,704	$50,073	$52,130	$62,169	$76,930	$45,526
60-64	14	27	29	42	42	174	126	127	96	83	37	30	827
	$37,144	$37,553	$37,968	$41,854	$35,416	$40,750	$43,612	$43,451	$49,110	$52,704	$58,640	$65,365	$44,987
65 & Over	11	7	9	5	12	69	48	38	44	36	17	19	315
	$36,417	$32,996	$34,512	$31,494	$36,227	$49,203	$48,113	$48,485	$48,981	$49,179	$64,781	$72,109	$49,137
Total	2,724	2,136	1,919	1,691	1,337	5,940	3,950	3,323	2,311	1,005	234	81	26,651
	$29,574	$34,860	$37,261	$38,087	$39,690	$41,908	$45,049	$49,323	$53,268	$57,500	$64,274	$70,367	$42,640

DRAFT

Schedule of Annuitants by Type of Benefit

Type of Benefit/ Form of Payment	Number		Annual Benefits Amount		Average Monthly Benefit
(1)	(2)		(3)		(4)
Service :					
Maximum & QDRO	8,208	$	166,049,625	$	1,686
100% J&S	2,574		49,958,266		1,617
50% J&S	1,668		42,149,406		2,106
Level Income	911		17,990,987		1,646
Subtotal:	13,361	$	276,148,284		1,722
Disability:					
Maximum	2,068	$	44,218,086	$	1,782
100% J&S	289		4,244,887		1,224
50% J&S	221		4,679,530		1,765
Subtotal:	2,578	$	53,142,503		1,718
Beneficiaries:	1,349	$	16,583,402	$	1,024
Total:	17,288	$	345,874,189	$	1,667

DRAFT

Distribution of Annuitants by Monthly Benefit

Monthly Benefit Amount	Number of Annuitants	Female	Male	Average Service
(1)	(2)	(3)	(4)	(5)
Under $200	858	390	468	2.20
$ 200 - 399	1,180	492	688	7.00
400 - 599	1,252	521	731	9.08
600 - 799	1,269	570	699	11.51
800 - 999	1,190	468	722	13.34
1,000 - 1,199	1,104	394	710	15.02
1,200 - 1,399	1,088	374	714	17.16
1,400 - 1,599	1,044	319	725	19.19
1,600 - 1,799	1,077	286	791	20.81
1,800 - 1,999	1,146	218	928	21.73
2,000 - 2,199	1,075	234	841	22.56
2,200 - 2,399	942	171	771	23.45
2,400 - 2,599	808	117	691	23.90
2,600 - 2,799	733	100	633	24.70
2,800 - 2,999	541	67	474	25.48
3,000 - 3,199	409	57	352	26.26
3,200 - 3,399	323	49	274	26.72
3,400 - 3,599	259	27	232	27.23
3,600 - 3,799	206	18	188	27.74
3,800 - 3,999	176	19	157	28.36
4,000 & Over	608	55	553	31.04
Total	17,288	4,946	12,342	17.82

DRAFT

Distribution of Average Annual Benefit by Age and Employee Type

	State		Other		Total	
Current Age	Number of Annuitants	Average Annual Benefit Amount	Number of Annuitants	Average Annual Benefit Amount	Number of Annuitants	Average Annual Benefit Amount
(1)	(4)	(5)	(6)	(7)	(8)	(9)
Under 40	80	$ 12,324	183	$ 18,793	263	$ 16,825
40 - 44	82	19,189	247	22,148	329	21,411
45 - 49	238	21,883	638	24,581	876	23,848
50 - 54	647	23,284	1,215	26,578	1,862	25,433
55 - 59	1,044	20,215	1,581	23,877	2,625	22,421
60 - 64	1,484	18,769	1,734	21,613	3,218	20,302
65 - 69	1,603	17,406	1,700	19,846	3,303	18,662
70 - 74	932	15,605	1,320	18,522	2,252	17,315
75 - 79	398	14,145	888	17,127	1,286	16,204
80 - 84	109	13,317	655	16,927	764	16,412
85 - 89	12	15,229	341	15,752	353	15,735
90 And Over	2	12,054	155	15,372	157	15,329
Total	6,631	$ 18,327	10,657	$ 21,052	17,288	$ 20,007

DRAFT

Schedule of Retirants Added to And Removed from Rolls

(Dollar amounts except average allowance expressed in thousands)

Year Ending June 30,	Added to Rolls Number	Added to Rolls Annual Benefits	Removed from Rolls Number	Removed from Rolls Annual Benefits	Rolls End of the Year Number	Rolls End of the Year Annual Benefits	% Increase in Annual Benefit	Average Annual Benefit
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2002	956	17,378	220	2,639	7,706	117,134	14.4%	15,200
2003	947	18,614	226	2,733	8,427	133,015	13.6%	15,784
2004	894	16,256	265	2,923	9,056	146,348	10.0%	16,114
2005	778	12,576	173	2,147	9,661	160,756	9.8%	16,640
2006	678	16,880	205	2,691	10,134	174,945	8.8%	17,263
2007	772	16,474	205	2,745	10,701	188,674	7.8%	17,631
2008	779	17,458	194	2,691	11,286	203,441	7.8%	18,026
2009	931	17,937	267	3,879	11,950	217,499	6.9%	18,201
2010	943	21,877	327	5,000	12,566	234,376	7.8%	18,652
2011	1,042	22,580	250	2,970	13,358	253,986	8.4%	19,014
2012	1,566	34,086	271	4,143	14,653	283,929	11.8%	19,377
2013	1,278	27,584	314	5,106	15,617	306,407	7.9%	19,620
2014	818	16,881	332	5,650	16,103	317,638	3.7%	19,725
2015	968	19,767	362	6,076	16,709	331,329	4.3%	19,829
2016	928	19,940	349	5,394	17,288	345,874	4.4%	20,007

Annual benefits added to rolls includes the benefit adjustments for continuing retirees.

APPENDIX A

ACTUARIAL ASSUMPTIONS AND METHODS

DRAFT

Summary of Actuarial Methods and Assumptions

The following presents a summary of the actuarial assumptions and methods used in the valuation of the South Carolina Police Officers Retirement System.

Investment Rate of Return

Assumed annual rate of 7.50% net of investment and administrative expenses composed of a 2.25% inflation component and a 5.25% real rate of return, net of investment expenses.

This is a prescribed assumption in Section 9-16-335 of the South Carolina State Code.

Rates of Annual Salary Increase

Rates of annual salary increase are assumed to vary for the first 15 years of service to include anticipated merit and promotional increases. The assumed annual rate of increase is 3.50% for all members with 15 or more years of service.

The 3.50% rate of increase is composed of a 2.25% inflation component and a 1.25% real rate of wage increase (productivity) component.

Active Male & Female Salary Increase Rate		
	PORS	
Years of Service	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.50% Wage Inflation
1	6.00%	9.50%
2	5.50%	9.00%
3	3.00%	6.50%
4	1.50%	5.00%
5	1.25%	4.75%
6	1.00%	4.50%
7	1.00%	4.50%
8	0.75%	4.25%
9	0.75%	4.25%
10	0.50%	4.00%
11	0.50%	4.00%
12	0.50%	4.00%
13	0.50%	4.00%
14	0.25%	3.75%
15	0.00%	3.50%
16	0.00%	3.50%
17	0.00%	3.50%
18	0.00%	3.50%
19	0.00%	3.50%
20+	0.00%	3.50%

DRAFT

Active Member Decrement Rates

a. Assumed rates of Service Retirement are shown in the following tables. The first table is for members who attain age 55 before attaining 25 years of service (27 years of service for Class Three Members). The second table is based on service and is for members who attain 25 years of service (27 years of service for Class Three Members) before age 55.

Annual Age Based Retirement Rates		
Age	PORS	
	Male	Female
55	20%	20%
56	20%	20%
57	20%	20%
58	10%	10%
59	10%	10%
60	10%	10%
61	25%	25%
62	25%	25%
63	25%	25%
64	25%	25%
65	25%	25%
66	25%	25%
67	25%	25%
68	25%	25%
69	25%	25%
70	100%	100%
71	100%	100%
72	100%	100%
73	100%	100%
74	100%	100%
75	100%	100%

Annual Service Based Retirement Rates			
Years of Service		PORS	
Class Two	Class Three	Male	Female
25	27	40%	40%
26	28	10%	10%
27	29	10%	10%
28	30	10%	10%
29	31	10%	10%
30	32	10%	10%
31	33	10%	10%
32	34	10%	10%
33	35	10%	10%
34	36	10%	10%
35	37	10%	10%
36	38	10%	10%
37	39	10%	10%
38	40	10%	10%
39	41	10%	10%
40	42	100%	100%

DRAFT

b. Assumed rates of disability are shown in the following table. 25% of disabilities are assumed to be duty-related.

Disability Rates		
Age	PORS	
	Males	Females
25	0.1740%	0.1740%
30	0.2320%	0.2320%
35	0.4350%	0.4350%
40	0.5800%	0.5800%
45	0.8700%	0.8700%
50	1.0875%	1.0875%
55	0.0000%	0.0000%
60	0.0000%	0.0000%
64	0.0000%	0.0000%

c. Active Member Mortality

Rates of active member mortality are based upon the RP-2014 Mortality Table for Employees with applicable multipliers to better reflect anticipated experience and provide margin for future improvement in mortality.

Active Mortality Rates (Multiplier Applied)		
Age	**PORS**	
	Males	**Females**
25	0.0460%	0.0164%
30	0.0429%	0.0207%
35	0.0497%	0.0272%
40	0.0597%	0.0376%
45	0.0924%	0.0624%
50	0.1602%	0.1047%
55	0.2649%	0.1589%
60	0.4454%	0.2320%
64	0.7008%	0.3220%
Multiplier	95%	95%

For purposes of determining active death benefits, 5% of active deaths for general employees are assumed to be duty related.

d. Rates of Withdrawal

Rates of withdrawal are service related. Sample rates are shown in the tables below.

Annual Withdrawal Rate		
Years of Service	**PORS**	
	Male	**Female**
0	25.00%	25.00%
1	18.00%	18.00%
2	14.00%	14.00%
3	12.00%	12.00%
4	10.70%	10.70%
5	9.54%	9.54%
6	8.50%	8.50%
7	7.58%	7.58%
8	6.75%	6.75%
9	6.02%	6.02%
10	5.37%	5.37%
11	4.78%	4.78%
12	4.26%	4.26%
13	3.80%	3.80%
14	3.39%	3.39%
15	3.02%	3.02%
16	2.69%	2.69%
17	2.40%	2.40%
18	2.14%	2.14%
19	1.91%	1.91%
20	1.70%	1.70%
21	1.51%	1.51%
22	1.35%	1.35%
23	1.20%	1.20%

DRAFT

DRAFT

Post Retirement Mortality

a. Healthy retirees and beneficiaries – The 2016 Public Retirees of South Carolina Mortality Table for Males and the 2016 Public Retirees of South Carolina Mortality Table for Females. Future mortality improvements are assumed each year using Scale AA from the year 2016 and multipliers applied to the base table to appropriately fit with plan experience. The following are sample rates:

Nondisabled Annuitant Mortality Rates Before Projection (Multiplier Applied)		
Age	**PORS**	
	Males	**Females**
50	0.2548%	0.1454%
55	0.4006%	0.2465%
60	0.7329%	0.4265%
65	1.2748%	0.5924%
70	1.9648%	0.9640%
75	3.3994%	1.8534%
80	6.3116%	3.7276%
85	11.4493%	7.0538%
90	19.8803%	12.3489%
Multiplier	125%	111%

Life Expectancy for an Age 65 Retiree in Years				
	Year of Retirement			
Member	**2020**	**2025**	**2030**	**2035**
Male	18.9	19.3	19.7	20.0
Female	22.7	22.8	23.0	23.2

b. A separate table of mortality rates is used for disabled retirees based on the RP-2014 Disabled Mortality Table projected using the AA projection table from the year 2014 with multipliers applied to appropriate fit to plan experience. The following are sample rates:

Disabled Annuitant Mortality Rates (Multiplier Applied)		
Age	**PORS**	
	Males	**Females**
50	1.7336%	1.0121%
55	1.9864%	1.2307%
60	2.2613%	1.4449%
65	2.6932%	1.7731%
70	3.4294%	2.3973%
75	4.6144%	3.4888%
80	6.5124%	5.1881%
85	9.6308%	7.6857%
90	14.7054%	11.2754%
Multiplier	85%	85%

Asset Valuation Method

The actuarial value of assets is equal to the market value, adjusted for the five-year phase in of the actual investment return in excess of (or less than) the expected investment return on a market value of asset basis. This five-year phase in begins with the investment experience for the fiscal year ending June 30, 2016. The actual return is calculated net of investment expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's market value of assets, adjusted for contributions, benefits paid, and refunds.

Actuarial Cost Method

The Entry Age Normal actuarial cost method allocates the System's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level percent of payroll necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

An unfunded accrued liability exists in the amount equal to the excess of accrued liability over valuation assets. The amortization period of the System is the number of years required to fully amortize the unfunded accrued liability, on an actuarial value of asset basis, with the expected amount of employer contributions in excess of the employers' portion of the normal cost.

Note, the principle financial measurement calculations in this actuarial valuation, which include the unfunded actuarial accrued liability, funded ratio, contributions rates, and funding period, are based on an actuarial value of assets (smoothed value) basis. The actuarial value of assets is a calculated asset value which may be greater than or less than the market value of assets and is used to dampen some of the volatility in the market value of assets. As a result, many of these measures would be different if they were determined on a market value of asset basis.

Development of the Contribution Rate and Funding Period

The calculation of the employer and member contribution rate as well as the derived funding period takes into account a couple differences in contributions paid by the various members as well as the delayed timing (if any) in the effective date of the new contribution rate. Specifically, the factors that are reflected in the calculation of the contribution rate include:

1) The anticipated difference in expected contributions received by the System from members and employers as a result of a 24-month delay in effective date of the contribution rate increase after the valuation date.

DRAFT

2) Member and employer contributions made on the payroll of working retirees are being used to finance the unfunded actuarial accrued liability since these members do not have a normal cost. Also, the number of working retirees is expected to decrease due to changes in working after retirement provisions enacted with Act 278.

3) For purposes of calculating the amortization cost and funding period, discrete pay increases and continuous interest was assumed, with amortization payments made at the end of each month.

Unused Annual Leave

To account for the effect of unused annual leave in Annual Final Compensation (AFC) of Class Two members, the AFC for Class Two members is increased 3.75% at their projected date of termination or retirement. Unused annual leave is not included in the calculation of the AFC for Class Three members.

Unused Sick Leave

To account for the effect of unused sick leave on credited service for Class Two members, the service of active Class Two members who retire is increased 3 months. Unused sick leave is not included in determining the credited service for Class Three members.

Future Post-Retirement Benefit Adjustments

Benefits are assumed to increase by the lesser of 1.00% annually or $500 beginning on the July 1st following the receipt of 12 monthly benefit payments. The $500 limit in the annual increase is not indexed to escalate in future years.

Payroll Growth Rate

The total annual payroll of all contributing members is assumed to increase at an annual rate of 3.00%.

Other Assumptions

1. Valuation payroll (used for determining the amortization contribution rate): Prior fiscal year payroll projected forward one year using the overall payroll growth rate. This was determined separately for active employees and return to work employees by dividing the actual member contributions received during the prior fiscal year by the applicable member contribution rate for that fiscal year, and then projecting forward at 3.00%.
2. Individual salaries used to project benefits: Actual salaries from the past fiscal year are used to determine the final average salary as of the valuation date. For future salaries, the salary from the last fiscal year is projected forward with one year's salary scale.
3. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported salaries represent amounts paid to members during the year ended on the valuation date.

DRAFT

4. Percent married: 100% of male and 100% of female employees are assumed to be married.
5. Age difference: Males are assumed to be four years older than their spouses.
6. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an immediate life annuity.
7. Inactive Population: All non-vested members are assumed to take an immediate refund. Vested benefit are assumed to elect a refund or a deferred benefit commencing at age 65, whichever is more valuable at the valuation date
8. There will be no recoveries once disabled.
9. Decrement timing: Decrements of all types are assumed to occur mid-year.
10. 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.
11. Decrement relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
12. 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. For valuation purposes, the member contribution rate projected to be in effect after FY 2016 is 9.32% of pay.
13. Benefit service: All members are assumed to accrue 1 year of eligibility service each year.
14. All calculations were performed without regard to the compensation limit in IRC Section 401(a)(17) and the benefit limit under IRC Section 415.

Participant Data

Participant data was securely supplied in electronic text files. There were separate files for (i) active and inactive members, and (ii) members and beneficiaries receiving benefits.

The data for active members included birth date, gender, service with the current city and total vesting service, salary, and employee contribution account balances. For retired members and beneficiaries, the data included date of birth, gender, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and form of payment code.

Salary supplied for the current year was based on the annualized earnings for the year preceding the valuation date.

Assumptions were made to correct for missing or inconsistent data. These had no material impact on the results presented.

DRAFT

APPENDIX B

BENEFIT PROVISIONS

DRAFT

SUMMARY OF BENEFIT PROVISIONS FOR SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM (PORS)

Effective Date: July 1, 1962.

Administration: The South Carolina Retirement System, organizationally aligned as a Division of the South Carolina Public Employee Benefit Authority, is responsible for the general administrative operations and day to day management of the Plan.

Type of Plan: This is a qualified governmental defined benefit retirement plan. Under GASB No. 27 and 67, it is considered to be a cost-sharing multiple-employer plan.

Eligibility: This System covers police officers and firefighters employed by the state, and any participating political subdivision, agency, or department of the state. With the exception for magistrates and probate judges, eligible public safety employees must earn at least $2,000 per year and devote at least 1,600 hours per year, unless exempted by statute.

Employee Contributions: Members are contributing 9.24% of earnable compensation for FY 2017. In the event that these contribution rates are insufficient to maintain a 30-year amortization period, the Board shall increase the employer and member contribution rates by an equal amount (i.e. maintain at least a 5.00% differential between the employer and member rates) as necessary to maintain a 30-year funding period. The employer and member contribution rates may not decrease until the plan attains a 90% funded ratio. These contributions are "picked-up" under Section 414(h) of the Internal Revenue Code. Contributions are credited with interest at the rate of 4.0% per annum while the member is active. Members do not earn interest on their employee contribution account balance while they are inactive.

Average Final Compensation (AFC): The monthly average of the member's highest twelve (12) consecutive quarters of earnable compensation (20 consecutive quarters for Class Three members, members who are hired after June 30, 2012). Earnable compensation is the compensation that would be payable to a member if the member worked a full, normal working time, which includes gross salary, overtime, sick pay, and deferrals. The calculation of a Class Two member’s AFC also includes up to 45 days pay for unused annual leave paid at termination.

Members joining the System after January 1, 1996, have their compensation limited in accordance with IRC Section 401(a)(17) for determining benefits.

DRAFT

Service Retirement:

a. Eligibility: A Class Two member may retire with an unreduced benefit at age 55 or after 25 years of creditable service, if earlier. The member must also have a minimum of 5 years of "earned" service to qualify for retirement. Class Three members may retire with an unreduced benefit at age 55 or after 27 years of creditable service, if earlier. Class Three members must also have a minimum of 8 years of "earned" service to qualify for retirement.

b. Monthly Benefit: 2.14% times Average Final Compensation (AFC) times years of creditable service. Class Two members will receive service credit for up to 90 days of unused sick leave where twenty days of sick leave constitutes one month of service credit.

c. Payment Form: Maximum retirement allowance (Option A) and survivor allowances under Options B and C.

Disability Retirement:

a. Eligibility: Member must have five or more years of earned service (8 years for Class Three members), unless the disability is due to performing his or her job duties.

b. Monthly Benefit:

   The monthly benefit is equal to the member's service retirement benefit that would have been payable based on the member's AFC determined as of the date of his disability and a projected credited service amount that assumes the member continued employment to age 55, not to exceed their current service or 25 years. However, a member must receive a disability retirement allowance equal to at least 15% of his AFC.

c. Payment Form: Maximum retirement allowance (Option A) and survivor allowances under Options B and C.

d. Death while Disabled: A disabled member is treated as a retired member for purposes of determining a death benefit.

***Vesting and Refunds*:**

a. Eligibility: All members who are not vested are eligible for a refund when they terminate service. Class Two members are vested after five years of earned service. Class Three members are vested after eight years of earned service. Vested members may also elect to receive a refund in lieu of the deferred termination benefit described below.

b. Amount: The refund benefit is the accumulated value of the member's contributions plus interest credited by the fund. Members do not earn interest on their employee contribution account balance while they are inactive.

DRAFT

Deferred Termination Benefit:

a. Eligibility: Member must be vested (5 years of earned service) and must elect to leave his/her contributions on deposit.

b. Monthly Benefit: Same as the unreduced or reduced service retirement benefit, based on service and AFC at termination, and commencing once the member is eligible.

c. Payment Form: Maximum retirement allowance (Option A) and survivor allowances under Options B and C.

d. Death Benefit: The beneficiary of an inactive member who dies is entitled to receive the amount of the member's accumulated contributions (with interest). In accordance with administrative policy, if the member met service eligibility requirements at their time of death, the beneficiary is eligible for a monthly survivor annuity benefit.

Death while an Active Member:

Members who die while actively employed will receive the regular death benefit described below. If the member was an employee of an employer participating in the Accidental Death Benefit Program and/or the Preretirement Death Benefit Program, then the beneficiary will receive additional death benefits.

Regular Death Benefit:

a. Refund: In the event of the death of an active member (duty or non-duty related), a refund of the member's accumulated contributions (with interest), subject to a minimum refund of $1,000, is paid to the beneficiary of a deceased member.

b. Beneficiary Annuity: If the deceased member (i) has 5 or more years of earned service and (ii) attained age 55 or accumulated 15 or more years of creditable service, the beneficiary may elect to receive, in lieu of the accumulated contributions, a monthly benefit for life of the beneficiary determined under "Option B" described under the Optional Forms of Benefit. For purposes of the benefit calculation, a member under the age of 55 is assumed to be 55 years of age.

Accidental Death Benefit Program:

The statutory beneficiary (i.e. surviving spouse, child, or parent of the member) of an active employee of an employer participating in the Accidental Death Benefit Program who dies as a result of a duty related event is entitled to the following beneficiary annuity.

a. Beneficiary Annuity: In the event a member dies as a result of a duty related event, a monthly benefit is payable for the lifetime of the member's spouse or parent (or a child until age 18) equal to 50% of the member's compensation at the time of death.

DRAFT

Optional Forms of Benefit: The System permits members to elect from three forms of benefit at retirement. In each case the benefit amount is adjusted to be actuarially equivalent to the "Option A" form. The optional forms are:

a. Option A (Maximum Retirement Allowance): A life annuity. Upon the member's death, any remaining member contributions will be paid to the member's designated beneficiary.

b. Option B (100% Joint & Survivor with Pop-up): A reduced annuity payable as long as either the member or his/her beneficiary is living. In the event the member's designated beneficiary predeceases the member, then the member shall receive a retirement allowance equal to the maximum retirement allowance (Option A), plus any applicable benefit adjustments that would have been granted.

c. Option C (50% Joint & Survivor with Pop-up): A reduced annuity payable during the member's life, and continues after the member's death at 50% of the rate paid to the member for the life of the member's designated beneficiary. In the event the member's designated beneficiary predeceases the member, then the member shall receive a retirement allowance equal to the maximum retirement allowance (Option A), plus any applicable benefit adjustments that would have been granted.

DRAFT

Incidental Death Benefit:

a. Active Employees: The beneficiary (or estate) of an active employee of an employer participating in the Preretirement Death Benefit Program who completes at least one full year of membership service, will receive a death benefit equal to the member's annual earnable compensation at the time of death.

The one full year membership requirement is waived for members whose death is a result of an injury arising out of and in the course of performing his duties.

For purposes of determining eligibility for incidental death benefits, active employees include those members who are actively reemployed and contributing as a working retiree with a participating employer.

b. Post Employment: The beneficiary (or estate) of a retiree, both current and future, will receive a one-time payment upon the retiree's death if the employer was participating in the Preretirement Death Benefit Program at the time of the retired member's death. The amount of the one-time payment is based on the retiree's years of credited service at retirement.

Years of Service Credit	Death Benefit
10 or more, but less than 20	$2,000
20 or more, but less than 25	$4,000
25 or more	$6,000

Postretirement Benefit Increases: Benefits paid to retired members or surviving spouses are increased annually in an amount equal to the lesser of 1.00% of the pension benefit or $500 beginning on the July 1st following the receipt of 12 monthly benefit payments. The $500 limit in the annual increase is not indexed to escalate in future years.

DRAFT

APPENDIX C

GLOSSARY

DRAFT

GLOSSARY

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or ***Funding Method:*** A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ADC.

Actuarial Gain or ***Actuarial Loss:*** A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the Fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)

DRAFT

b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and

c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial valuation for a governmental retirement system typically also includes calculations that provide the financial information of the plan, such as the funded ratio, unfunded actuarial accrued liability and the ADC.

Actuarial Value of Assets or ***Valuation Assets:*** The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: That portion of the pension plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

DRAFT

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan that is not a Defined Contribution Plan. Typically a defined benefit plan is one in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA, although GASB 25 reporting requires the use of the AVA.

Funding Period or ***Amortization Period:*** The term "Funding Period" is used two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ADC. This funding period is chosen by the Board of Trustees. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 67 and ***GASB 68***: Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting and reporting rules for public retirement systems and the employers that sponsor, participate in, or contribute to them. Statement No. 67 sets the accounting rules for the financial reporting of the retirement systems, while Statement No. 68 sets the rules for the employers that sponsor, participate in, or contribute to public retirement systems.

DRAFT

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but may not decrease by exactly one year in the subsequent year's actuarial valuation. In some instances, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In other instances, such as the case with the South Carolina Retirement System (SCRS) and Police Officers Retirement System (PORS), the amortization period denotes the expected number of years until the plan attains a 100% funded ratio (on an actuarial value of asset basis), based on the contribution rate that is in effect. In this instance, the amortization period may "float" from year to year, meaning it could increase, decrease, or remain relatively unchanged from the amortization period in the prior year's valuation.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

DRAFT

GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

DRAFT

RETIREMENT SYSTEM FOR MEMBERS OF THE GENERAL ASSEMBLY OF THE STATE OF SOUTH CAROLINA (GARS)

ACTUARIAL VALUATION REPORT

AS OF JULY 1, 2016

GRS

Gabriel Roeder Smith & Company
Consultants & Actuaries

5605 N. MacArthur Blvd.
Suite 870
Irving, TX 75038-2631

469.524.0000 phone
469.524.0003 fax
www.gabrielroeder.com

DRAFT

November 28, 2016

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

Subject: Actuarial Valuation as of July 1, 2016

Dear Members of the Board:

This report describes the current actuarial condition of the Retirement System for Members of the General Assembly of the State of South Carolina (GARS), determines the calculated employer contribution requirement, and changes in the System's financial condition. In addition, the report provides various summaries of the data. A separate report is issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements 67 and 68. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of July 1, the first day of the plan year for GARS. This report was prepared at the request of the Board of Directors of the South Carolina Public Employee Benefit Authority (Board) and is intended for use by the Public Employee Benefit Authority (PEBA) staff and those designated or approved by the Board.

Under SCRS statutes, the Board must certify the employer contribution annually. This amount is determined actuarially, based on the Board's funding policy. The contribution is determined by a given actuarial valuation and becomes effective twenty-four months after the valuation date. In other words, the contribution determined by this July 1, 2016 actuarial valuation will be used by the Board when certifying the employer contribution amount for the year beginning July 1, 2018. If new legislation is enacted between the valuation date and the date the contribution becomes effective, the Board may adjust the calculated amount before certifying them, in order to reflect this new legislation. Such adjustments are based on information supplied by the actuary.

Financing Objectives and Funding Policy

The principle objectives in the funding policy that is maintained by the Board include:

- Establish a contribution amount that remains relatively level over time.
- To set an amount so that the measures of the System's funding progress which include the unfunded actuarial accrued liability, funded ratio, and funding period will be maintained or improved.

- To set a contribution amount that will result in the unfunded actuarial accrued liability (UAAL) to be amortized over a period from the current valuation date that does not exceed 30 years (as of the valuation date there are 11 years remaining in the funding period).

For GARS, the Board's funding policy is to determine an employer contribution amount equal to the sum of the employer normal cost (which pays the current year's cost) and an amortization amount which will result in the UAAL to be funded by June 30, 2027.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVES

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches at least 100%.

The funded ratio of the retirement system decreased from 50.1% to 47.9%. This decrease was primarily due to the recognition of investment losses (i.e. investment returns less than the 7.50% return assumption) that have occurred the last two years. We expect the funded ratio to remain relatively constant for the next couple years then gradually improve each year thereafter.

If market value of assets had been used in the calculation instead of actuarial (smoothed) value of assets, the funded ratio for the System would have been 40.3%, compared to 43.6% in the prior year. The decrease in the funded ratio on a market value basis is primarily due to the use of updated actuarial assumptions and unfavorable investment experience during the last fiscal year. Specifically, the market value of assets earned a -0.47% return determined using the method specified by GASB 67 and reported in the financial statement of the South Carolina Retirement Systems for the year ending June 30, 2016. The -0.8% return documented in this report was determined on a dollar-weighted basis and is net of expenses and assumed mid-year cash flows.

ASSUMPTIONS AND METHODS

South Carolina State Code requires that an experience analysis that reviews the economic and demographic assumptions be performed every five years. An experience study was conducted for the five-year period ending June 30, 2015. The following is a summary of the assumptions that were adopted by the Board and used in preparing this actuarial valuation:

- Decrease the price inflation assumption from 2.75% to 2.25%.
- Adopt new post-retirement mortality tables specific to South Carolina retiree experience. Mortality for retirees is assumed to improve based on generational projection Scale AA.
- Minor adjustments to the pre-retirement mortality assumption.
- Modify the disability rates for some groups. The rates of disability incidence were generally decreased for those groups.
- Modify the asset method such that each year's investment gain or loss (determined on a market value of asset basis) is recognized over a closed five-year period at the rate of 20% per year.

DRAFT

The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.50% investment return assumption.

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can, and almost certainly will, differ as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rate, and funding periods. The actuarial calculations are intended to provide information for rational decision making.

BENEFIT PROVISIONS

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2016. There were no legislative changes enacted since the previous valuation that had a measurable effect on the current valuation.

DATA

Member data for retired, active and inactive members was supplied as of July 1, 2016, by the PEBA staff. The staff also supplied asset information as of July 1, 2016. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. GRS is not responsible for the accuracy or completeness of the information provided to us by PEBA.

CERTIFICATION

We certify that the information presented herein is accurate and fairly portrays the actuarial position of GARS as of July 1, 2016.

All of our work conforms with generally accepted actuarial principles and practices, and is in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of South Carolina Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

DRAFT

The undersigned are independent actuaries and consultants. Mr. Newton and Mr. White are Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Both are experienced in performing valuations for large public retirement systems.

Sincerely,

Gabriel, Roeder, Smith & Co.

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

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

DRAFT

TABLE OF CONTENTS

DRAFT

SECTION A

EXECUTIVE SUMMARY

DRAFT

Executive Summary

(Dollar amounts expressed in thousands)

Valuation Date:	July 1, 2016	July 1, 2015
Membership		
• Number of		
- Active positions	102	104
- Special contributors	17	16
- Retirees and beneficiaries	358	362
- Inactive members	32	36
- Total	509	518
• Projected payroll	$2,316	$2,338
Contribution Requirement		
• Member contribution rate	11.00%	11.00%
• Employer contribution requirement[1]	$5,428	$4,777
Assets		
• Market value	$30,188	$32,482
• Actuarial value	35,926	37,312
• Return on market value	-0.8%	1.4%
• Return on actuarial value	1.6%	4.4%
• Ratio - actuarial value to market value	119.0%	114.9%
• External cash flow %	-6.4%	-6.1%
Actuarial Information		
• Normal cost %	22.91%	21.08%
• Actuarial accrued liability (AAL)	$ 74,996	$74,509
• Unfunded actuarial accrued liability (UAAL)	39,070	37,197
• Funded ratio	47.9%	50.1%
• Funding period from the valuation date	11 Years	12 years
Reconciliation of UAAL		
• Beginning of Year UAAL	$37,197	$36,868
- Interest on UAAL	2,790	2,765
- Amortization payment	(4,542)	(4,153)
- Assumption change	808	0
- Asset experience	2,099	1,207
- Liability experience	718	510
- Legislative changes	0	0
• End of Year UAAL	39,070	$37,197

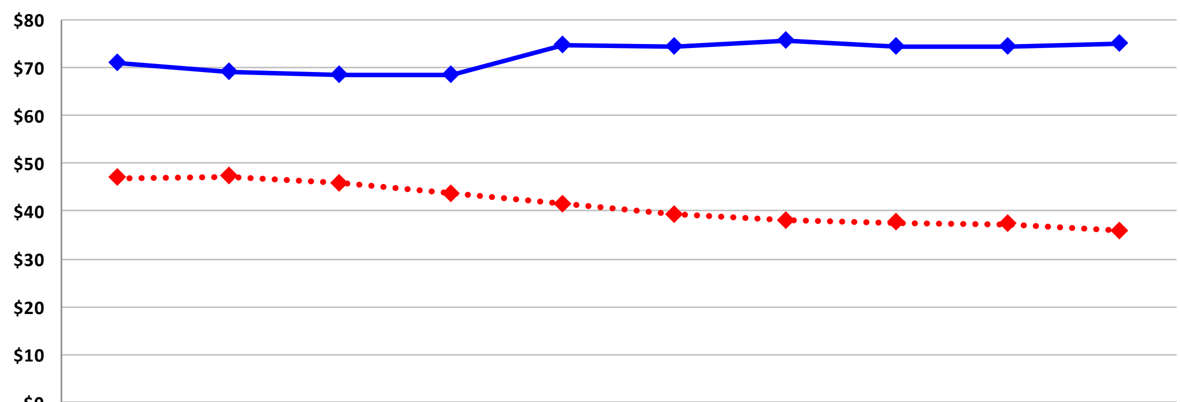
[1] The contribution requirement determined by the July 1, 2016 actuarial valuation is subject to approval and adoption by the Public Employee Benefit Authority before becoming effective for the fiscal year beginning July 1, 2018.

DRAFT

EXECUTIVE SUMMARY (CONTINUED)

The unfunded actuarial accrued liability increased by $1.9 million since the prior year's valuation to $39.1 million. The single largest source of this increase is due to recognition of investment losses. Below is a chart with the historical actuarial value of assets and actuarial accrued liability for GARS.

Chart 1. - History of Actuarial Assets vs. Actuarial Accrued Liability
(Dollars in Millions)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AAL	$71.0	$69.1	$68.5	$68.7	$74.6	$74.3	$75.6	$74.5	$74.5	$75.0
AVA	$46.9	$47.2	$45.9	$43.7	$41.5	$39.2	$38.0	$37.6	$37.3	$35.9

There remains $5.7 million in deferred investment losses as of the valuation date. Due to unfavorable investment experience during the fiscal year ending June 30, 2016, this is a $1.1 million increase in deferred investment loss compared to the amount that existed at July 1, 2015. Absent favorable investment experience, these deferred losses will be reflected in the actuarial value of assets over the next several years.

The recommended employer contribution requirement increased from $4.777 million in FY 2018 to $5.428 million in FY 2019. Absent legislative changes or demographic or investment experience that is significantly different than assumed, we expect the recommended contribution to increase for the next several years as existing deferred investment losses become recognized in the actuarial value of assets. Also, due to level of the current contributions, we expect the funded ratio (on an actuarial value of asset basis) and the dollar amount of the unfunded actuarial liability to remain relatively unchanged for the next couple years, before improving.

SECTION B

DISCUSSION

DRAFT

DISCUSSION

The results of the July 1, 2016 actuarial valuation of the Retirement System for Members of the General Assembly are presented in this report. The purposes of the valuation report is to depict the current financial condition of the System, determine the annual required contribution, and analyze changes in the System's financial condition. In addition, the report provides various summaries of the members participating in the plan.

This section discusses the determination of the current funding requirements and the System's funded status, as well as changes in financial condition of the retirement system. The valuation results for the prior year are shown in this report for comparison purposes.

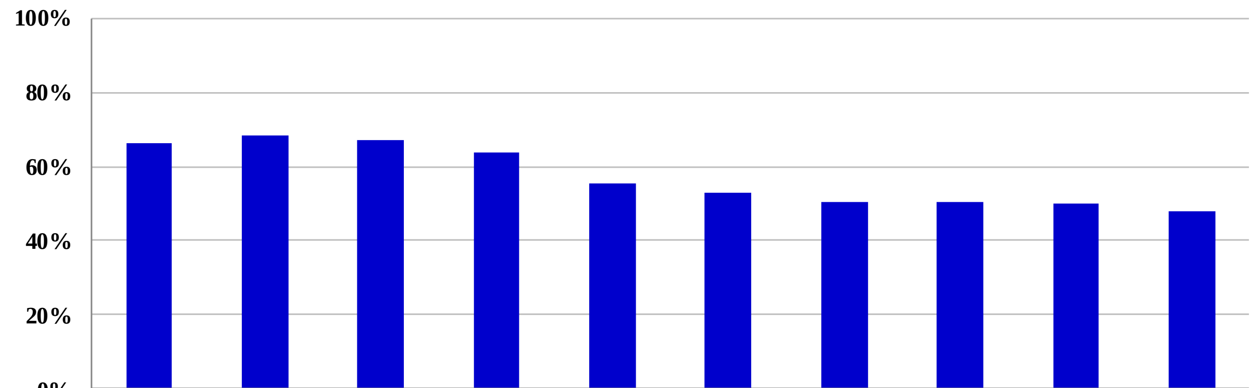
All of the actuarial and financial tables referenced by the other sections of this report appear in Section C. Section D provides member data and statistical information. Appendices A and B provide summaries of the principle actuarial assumptions and methods and plan provisions. Finally, Appendix C provides a glossary of technical terms that are used throughout this report.

DRAFT

Funding Progress

The funded ratio slightly decreased from 50.1% to 47.9% since the prior valuation. Table 10, Schedule of Funding Progress, in the following section of the report provides additional detail regarding the funding progress of the Retirement System.

Chart 2. - Funded Ratio
Actuarial Assets as a percentage of Actuarial Accrued Liabilities



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Funded Ratio	66.1%	68.3%	67.0%	63.7%	55.6%	52.8%	50.3%	50.5%	50.1%	47.9%

The Board's funding policy for this plan is to fully amortize the unfunded actuarial accrued liability (UAAL) by June 30, 2027. Under this funding policy, there are 11 years remaining in the funding period from the valuation date.

DRAFT

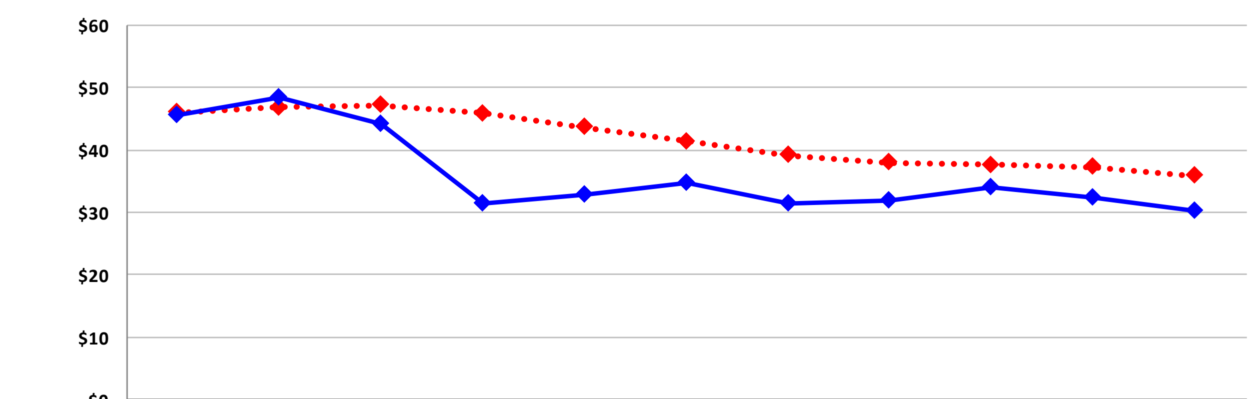
Asset Gains/ (Losses)

The actuarial value of assets ("AVA") is based on a smoothed market value of assets, using a systematic approach to phase-in the difference between the actual and expected investment return on a market value of asset basis (adjusted for receipts and disbursements during the year). This is appropriate because it dampens the short-term volatility inherent in investment markets. The returns are computed net of investment expenses. The actuarial value of assets decreased from $37.3 million to $35.9 million since the prior valuation. Table 8 in the following section of the report provides the development of the actuarial value of assets.

The rate of return on the mean market value of assets in 2016 was -0.8%; which is less than the 7.50% expected annual return. The return on an actuarial (smoothed) asset value was 1.6%. This difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.

The market value of assets is less than the actuarial value of assets, which signifies that the retirement system is in a position of deferred losses. Therefore, unless the System experiences investment returns in excess of the assumed rate of return, these deferred losses will be recognized over the next four years.

Chart 3. - History of Actuarial Value and Market Value of Assets
(Dollars in Millions)



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AVA	46.1	46.9	47.2	45.9	43.7	41.5	39.2	38.0	37.6	37.3	35.9
MVA	45.7	48.5	44.2	31.5	32.8	34.7	31.4	31.9	34.0	32.5	30.2

Assets as of July 1,

Tables 6 and 7 in the following section of this report provide asset information that was included in the annual financial statements of the System. Also, Table 9 shows the estimated yield on a market value basis and on the actuarial asset valuation method.

Actuarial Gains/ (Losses) and the Contribution Requirement

The annual actuarial valuation is a snapshot analysis of the benefit liabilities, assets and funded position of the System as of the first day of the plan year. In any one fiscal year, the experience can be better or worse from that which is assumed or expected. The actuarial assumptions do not necessarily attempt to model what the experience will be for any one given fiscal year, but instead try to model the overall experience on average over many years. The demographic experience for the last year is briefly summarized in the chart below.

The unfunded actuarial accrued liability (UAAL) has increased from $37.2 million in 2015 to $39.1 million in 2016. The table below shows the source of the gains and losses and the impact of those gains and losses on the UAAL.

Reconciliation of UAAL
(Dollars in thousands)

• Beginning of Year UAAL	$37,197
- Interest on UAAL	$2,790
- Amortization payment	(4,542)
- Assumption change	808
- Asset experience	2,099
- Liability experience	718
- Legislative changes	0
- Total change	$1,873
• End of Year UAAL	$39,070

DRAFT

The following table provides a reconciliation of the change in the recommended contribution from 2015 to 2016 valuation. The plan's investment experience, on an actuarial asset basis, had the largest single impact on the change in the recommended contribution.

Change in Recommended Employer Contribution
(Dollars in thousands)

• Prior year valuation	$4,777
- Expected change	38
- Assumption change	152
- Asset experience	354
- Liability experience	107
- Legislative changes	0
- Total change	651
• Current year valuation	$5,428

This funding method and contribution policy is designed to result in relatively level contribution requirements from year to year. However, absent favorable investment experience, we expect that the contribution requirement will increase over the next several years as existing deferred investment losses become fully recognized in the actuarial value of assets and calculation of the recommended contribution.

DRAFT

Actuarial Assumptions and Methods

In determining costs and liabilities, actuaries use assumptions about the future, such as probabilities of retirement, termination, death and disability, and an annual investment return assumption. South Carolina State Code requires that an experience analysis that reviews the economic and demographic assumptions be performed every five years. An experience study was conducted for the five-year period ending June 30, 2015. The following is a summary of the assumptions that were adopted by the Board and used in preparing this actuarial valuation:

- Decrease the price inflation assumption from 2.75% to 2.25%.
- Adopt new post-retirement mortality tables specific to South Carolina retiree experience. Mortality for retirees is assumed to improve based on generational projection Scale AA.
- Minor adjustments to the pre-retirement mortality assumption.
- Modify the disability rates for some groups. The rates of disability incidence were generally decreased for those groups.
- Modify the asset method such that each year's investment gain or loss (determined on a market value of asset basis) is recognized over a closed five-year period at the rate of 20% per year.

The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.50% investment return assumption.

Appendix A includes a summary of the actuarial assumptions and methods used in this valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code.

It is our opinion that the recommended assumptions are internally consistent and are reasonable and reflect anticipated future experience of the System. The next experience study will be conducted no later than June 30, 2020.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. This report 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.

DRAFT

DRAFT

Benefit Provisions

Appendix B of this report includes a summary of the benefit provisions for GARS. There were no legislative changes enacted since the previous valuation that had a measurable effect on the current valuation.

Summary of Retirement Provisions

- Membership was closed to new members after the 2012 general election.
- Earnable compensation is comprised of $10,400 annually plus 40 times the daily rate of remuneration (i.e. $22,400 in total earnable compensation annually). Certain line-item additional compensation for specified offices is also included. Monthly benefits are based on one-twelfth of this amount.
- The member contribution rate is 11% of earnable compensation.
- The retirement benefit amount is equal to the 4.82% of the member's earnable compensation times the member's credited service (years).
- Members are eligible for retirement after they have (i) attained age 60, or (ii) completed 30 years of creditable service. Members may commence their benefit before retiring from service upon the attainment of age 70 or after accruing 30 years of service.
- Members with eight or more years of credited service that cease membership in the General Assembly may elect to continue earning future service in the system by contributing the required membership contributions (i.e. a special contributing member).

DRAFT

SECTION C

ACTUARIAL TABLES

DRAFT

ACTUARIAL TABLES

DRAFT

Summary of Cost Items

(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Projected payroll of active members	$ 2,316	$ 2,338
2.	Present value of future pay	$ 12,671	$ 14,429
3.	Normal cost		
	a. Total normal cost	$ 531	$ 493
	b. Less: member contribution	(255)	(257)
	c. Employer normal cost	$ 276	$ 236
4.	Actuarial accrued liability for active members		
	a. Present value of future benefits	$ 17,458	$ 15,786
	b. Less: present value of future normal costs	(2,568)	(2,740)
	c. Actuarial accrued liability	$ 14,890	$ 13,046
5.	Total actuarial accrued liability for:		
	a. Retirees and beneficiaries	$ 57,314	$ 58,384
	b. Inactive members	2,792	3,079
	c. Active members (Item 4c)	14,890	13,046
	d. Total	$ 74,996	$ 74,509
6.	Actuarial value of assets	$ 35,926	$ 37,312
7.	Unfunded actuarial accrued liability (UAAL) (Item 5d - Item 6)	$ 39,070	$ 37,197
8.	Annual Required Contribution		
	a. Employer normal cost	$ 276	$ 236
	b. Employer contribution to amortize the UAAL	5,152	4,541
	c. Total employer contribution	$ 5,428	$ 4,777

DRAFT

Actuarial Present Value of Future Benefits
(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Active members		
	a. Service retirment	$ 16,701	$ 14,825
	b. Disability retirement	369	484
	c. Survivors' benefits	388	477
	d. Total	$ 17,458	$ 15,786
2.	Retired members		
	a. Service retirement	$ 50,104	$ 50,789
	b. Disability retirement	0	0
	c. Beneficiaries	7,008	7,394
	d. Incidental death benefits	202	201
	e. Total	$ 57,314	$ 58,384
3.	Inactive members		
	a. Vested terminations	$ 2,039	$ 2,251
	b. Nonvested terminations	753	828
	c. Total	$ 2,792	$ 3,079
4.	Total actuarial present value of future benefits	$ 77,564	$ 77,249

DRAFT

Analysis of Normal Cost
(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Total normal cost rate		
	a. Service retirement	20.77%	18.71%
	b. Survivor benefits	0.88%	1.02%
	c. Disability benefits	1.14%	1.35%
	d. Total	22.79%	21.08%
2.	Admin expenses	0.12%	N/A
3.	Less: member contribution rate	11.00%	11.00%
4.	Net employer normal cost rate	11.91%	10.08%
5.	Projected valuation payroll	$2,316	$2,338
6.	Projected employer normal cost contribution	$276	$236

DRAFT

Results of July 1, 2016 Valuation

(Dollar amounts expressed in thousands)

			July 1, 2016 (1)
1.	Actuarial Present Value of Future Benefits		
	a. Present retired members and beneficiaries	$	57,314
	b. Present active and inactive members		20,250
	c. Total actuarial present value	$	77,564
2.	Present Value of Future Normal Contributions		
	a. Employee	$	1,394
	b. Employer		1,174
	c. Total future normal contributions	$	2,568
3.	Actuarial Liability	$	74,996
4.	Current Actuarial Value of Assets	$	35,926
5.	Unfunded Actuarial Liability	$	39,070
6.	Unfunded Actuarial Liability Liquidation Period from from the Valuation Date		11 years

DRAFT

Actuarial Balance Sheet

(Dollar amounts expressed in thousands)

	July 1, 2016 (1)	July 1, 2015 (2)
1. Assets		
a. Current Assets (Actuarial Value)		
i. Employee annuity savings fund	$ 7,334	$ 7,295
ii. Employer annuity accumulation fund	28,592	30,017
iii. Total current assets	$ 35,926	$ 37,312
b. Present Value of Future Member Contributions[1]	$ 1,394	$ 1,587
c. Present Value of Future Employer Contributions		
i. Normal contributions	$ 1,174	$ 1,153
ii. Accrued liability contributions	39,070	37,197
iii. Total future employer contributions	$ 40,244	$ 38,350
d. Total Assets	$ 77,564	$ 77,249
2. Liabilities		
a. Employee Annuity Savings Fund		
i. Past member contributions	$ 7,334	$ 7,295
ii. Present value of future member contributions[1]	1,394	1,587
iii. Total contributions to employee annuity savings fund	$ 8,728	$ 8,882
b. Employer Annuity Accumulation Fund		
i. Benefits currently in payment	$ 57,314	$ 58,384
ii. Benefits to be provided to other members	11,522	9,983
iii. Total benefits payable from employer annuity accumulation fund	$ 68,836	$ 68,367
c. Total Liabilities	$ 77,564	$ 77,249

[1] Includes expected contributions from special contributors.

System Net Assets
Assets at Market or Fair Value
(Dollar amounts expressed in thousands)

Item (1)	July 1, 2016 (2)	July 1, 2015 (3)
1. Cash and cash equivalents (operating cash)	$ 6,171	$ 4,744
2. Receivables	830	630
3. Investments		
a. Short-term securities	$ 790	$ 804
b. Fixed income (global)	5,834	8,383
c. Public equities (global)	7,185	7,496
d. Global tactical asset allocation	1,959	2,336
e. Alternative investments	8,966	9,423
f. Total investments	$ 24,734	$ 28,442
4. Securities lending cash collateral invested	$ 56	$ 74
5. Prepaid administrative expenses	4	4
6. Capital assets, net of accumulated depreciation	7	7
7. Total assets	$ 31,802	$ 33,901
8. Liabilities		
a. Due to other systems	$ 0	$ 0
b. Accounts payable	1,436	1,258
c. Investment fees payable	9	9
d. Obligations under securities lending	56	74
e. Deferred retirement benefits	0	0
f. Due to employee insurance program	0	0
g. Benefit payable	0	2
h. Other liabilities	113	76
i. Total liabilities	$ 1,614	$ 1,419
9. Total market value of assets available for benefits (Item 7. - Item 8.i.)	$ 30,188	$ 32,482
10. Asset allocation (investments)[1]		
a. Net invested cash	20.7%	14.9%
b. Fixed income	19.3%	25.9%
c. Public equities	23.8%	23.1%
d. Global tactical asset allocation	6.5%	7.2%
e. Alternative investments	29.7%	28.9%
f. Total investments	100.0%	100.0%

[1] These asset allocations are calculated based on the dollar amounts shown in items 1. through 9. above and, due to cash flow and rebalancing timing, may be slightly different than the allocation percentages reported by the South Carolina Retirement System Investment Commission.

DRAFT

Reconciliation of System Net Assets

(Dollar amounts expressed in thousands)

	Year Ending July 1, 2016 (1)		Year Ending July 1, 2015 (2)	
1. Value of Assets at Beginning of Year	$	32,482	$	34,034
2. Revenue for the Year				
a. Contributions				
i. Member contributions	$	292	$	369
ii. Employer contributions		4,501		4,275
iii. Total	$	4,793	$	4,644
b. Income				
i. Interest, dividends, and other income	$	421	$	377
ii. Investment expenses		(265)		(380)
iii. Net	$	156	$	(3)
c. Net realized and unrealized gains (losses)	$	(422)	$	503
d. Total revenue	$	4,527	$	5,144
3. Expenditures for the Year				
a. Disbursements				
i. Refunds	$	22	$	-
ii. Regular annuity benefits		6,625		6,639
iii. Other benefit payments		9		21
iv. Transfers to other Systems		147		18
v. Total	$	6,803	$	6,678
b. Administrative expenses and depreciation		18		18
c. Total expenditures	$	6,821	$	6,696
4. Increase in Net Assets (Item 2. - Item 3.)	$	(2,294)	$	(1,552)
5. Value of Assets at End of Year (Item 1. + Item 4.)	$	30,188	$	32,482
6. Net External Cash Flow				
a. Dollar amount	$	(2,010)	$	(2,034)
b. Percentage of market value		-6.4%		-6.1%

DRAFT

Development of Actuarial Value of Assets
(Dollar amounts expressed in thousands)

		Year Ending June 30, 2016
1.	Actuarial value of assets at beginning of year	$ 37,312
2.	Market value of assets at beginning of year	$ 32,482
3.	Net new investments	
	a. Contributions	$ 4,793
	b. Disbursements[1]	(6,803)
	c. Subtotal	(2,010)
4.	Market value of assets at end of year	$ 30,188
5.	Net earnings (Item 4. - Item 2. - Item 3.c.)	$ (284)
6.	Assumed investment return rate for fiscal year	7.50%
7.	Expected return	$ 2,361
8.	Excess return (Item 5. - Item 7.)	$ (2,645)
9.	Excess return on assets as of June 30, 2016:	

	Fiscal Year Ending June 30, (1)	Excess Return (2)	Percent Deferred (3)	Deferred Amount (4)
a.	2016	$ (2,645)	80%	$ (2,116)
b.	2015	(6,037)	60%	(3,622)
c.	2014	N/A	40%	N/A
d.	2013	N/A	20%	N/A
e.	2012	N/A	0%	N/A
f.	Total			$ (5,738)

10.	Actuarial value of assets as of June 30, 2016 (Item 4. - Item 9.f.)	$ 35,926
11.	Expected actuarial value as of June 30, 2016	$ 38,025
12.	Asset gain (loss) for year (Item 10. - Item 11.)	$ (2,099)
13.	Asset gain (loss) as % of the actuarial value of assets	-5.8%
14.	Ratio of actuarial value to market value	119.0%

[1] For the year ending June 30, 2016, the investment return assumption was net of administration and investment expenses. Beginning July 1, 2016, the investment return assumption is only net of investment expenses.

DRAFT

Estimation of Yields
(Dollar amounts expressed in thousands)

		Year Ending	
		July 1, 2016	July 1, 2015
		(1)	(2)
1.	Market Value Yield		
a.	Beginning of year market assets	$ 32,482	$ 34,034
b.	Contributions to fund during the year	4,793	4,644
c.	Disbursements	(6,803)	(6,678)
d.	Investment income (net of investment and administrative expenses)	(284)	482
e.	End of year market assets	$ 30,188	$ 32,482
f.	Estimated dollar weighted market value yield	-0.8%	1.4%
2.	Actuarial Value Yield		
a.	Beginning of year actuarial assets	$ 37,312	$ 37,646
b.	Contributions to fund during the year	4,793	4,644
c.	Disbursements	(6,803)	(6,678)
d.	Investment income (net of investment and administrative expenses)	624	1,700
e.	End of year actuarial assets	$ 35,926	$ 37,312
f.	Estimated actuarial value yield	1.6%	4.4%

DRAFT

Schedule of Funding Progress
(Dollar amounts expressed in thousands)

July 1,	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll[1]	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2002	43,841	73,046	29,205	60.0%	4,515	646.9%
2003	44,682	66,619	21,937	67.1%	3,844	570.8%
2004	45,087	68,332	23,245	66.0%	3,839	605.5%
2005	46,316	69,161	22,845	67.0%	3,853	592.9%
2006	46,075	69,734	23,659	66.1%	3,854	613.9%
2007	46,925	71,014	24,089	66.1%	3,854	625.0%
2008	47,189	69,122	21,933	68.3%	3,854	569.1%
2009	45,891	68,491	22,600	67.0%	3,854	586.4%
2010	43,712	68,671	24,959	63.7%	3,854	647.6%
2011	41,484	74,604	33,120	55.6%	3,854	859.4%
2012	39,233	74,332	35,099	52.8%	3,854	910.7%
2013	38,033	75,639	37,606	50.3%	2,688	1,399.0%
2014	37,646	74,514	36,868	50.5%	2,601	1,417.5%
2015	37,312	74,509	37,197	50.1%	2,338	1,591.0%
2016	35,926	74,996	39,070	47.9%	2,316	1,686.9%

[1] For valuations prior to 2013 the annual covered payroll included the payroll of filled and unfilled positions.

DRAFT

Summary of Principle Assumptions and Methods

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation date	July 1, 2016
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar
Amortization period for contribution requirement	11-year closed period
Asset valuation method	5-Year Smoothed
Actuarial assumptions:	
Investment rate of return[1]	7.50%
Projected salary increases	None.
Inflation	2.25%
Cost-of-living adjustments	0.00%
Retiree mortality	2016 Public Retirees of South Carolina Mortality Table for Males and Females, projected using Scale AA from the year 2016. Male rates are multiplied by 100% and female rates are multiplied by 111%.

[1] This is a prescribed assumption in Section 9-16-335 of South Carolina State Code.

DRAFT

Solvency Test

(Dollar amounts expressed in thousands)

	Actuarial Accrued Liability				Portion of Aggregate Accrued Liabilities Covered by Assets		
July 1,	Active Member Contributions	Retirants & Beneficiaries	Active & Inactive Members (Employer Financed)	Valuation Assets	Active	Retirants	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2002	9,470	47,485	16,091	43,841	100.0%	72.4%	0.0%
2003	8,324	46,781	11,515	44,682	100.0%	77.7%	0.0%
2004	8,485	48,126	11,721	45,087	100.0%	76.1%	0.0%
2005	8,024	51,353	9,784	46,316	100.0%	74.6%	0.0%
2006	8,094	51,870	9,770	46,075	100.0%	73.2%	0.0%
2007	7,735	54,115	9,164	46,925	100.0%	72.4%	0.0%
2008	7,265	53,240	8,617	47,189	100.0%	75.0%	0.0%
2009	6,822	54,586	7,083	45,891	100.0%	71.6%	0.0%
2010	7,265	53,486	7,920	43,712	100.0%	68.1%	0.0%
2011	7,100	58,291	9,213	41,484	100.0%	59.0%	0.0%
2012	7,267	58,213	8,852	39,233	100.0%	54.9%	0.0%
2013	7,164	59,592	8,883	38,033	100.0%	51.8%	0.0%
2014	7,358	58,098	9,058	37,646	100.0%	52.1%	0.0%
2015	7,295	58,384	8,830	37,312	100.0%	51.4%	0.0%
2016	7,334	57,314	10,348	35,926	100.0%	49.9%	0.0%

DRAFT

SECTION D

MEMBERSHIP DATA

DRAFT

MEMBERSHIP TABLES

DRAFT

Summary of Membership Data

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Active Members		
a.	Males	88	90
b.	Females	14	14
c.	Total members	102	104
d.	Total annualized prior year pay	$ 2,316,400	$ 2,338,187
e.	Average pay	$ 22,710	$ 22,483
f.	Average age	56.4	55.6
g.	Average service	14.3	13.4
h.	Member contributions with interest	$ 5,215,963	$ 4,973,630
i.	Average contributions with interest	$ 51,137	$ 47,823
2.	Special Contributors		
a.	Males	15	14
b.	Females	2	2
c.	Total members	17	16
d.	Member contributions with interest	$ 855,187	$ 847,513
e.	Average contributions with interest	50,305	52,970
3.	Vested Inactive Members		
a.	Number	5	6
b.	Total annual deferred benefits	$ 228,395	$ 258,939
c.	Average annual deferred benefit	$ 45,679	$ 43,157
4.	Nonvested Inactive Members		
a.	Number	27	30
b.	Member contributions with interest	$ 753,103	$ 827,816
c.	Average contributions with interest	$ 27,893	$ 27,594
5.	Service Retirees		
a.	Number	279	281
b.	Total annual benefits	$ 5,498,678	$ 5,510,955
c.	Average annual benefit	$ 19,709	$ 19,612
d.	Average age at the valuation date	73.5	72.6
6.	Disabled Retirees		
a.	Number	0	0
b.	Total annual benefits	$ 0	$ 0
c.	Average annual benefit	$ 0	$ 0
d.	Average age at the valuation date	N/A	N/A
7.	Beneficiaries		
a.	Number	79	81
b.	Total annual benefits	$ 1,115,212	$ 1,154,786
c.	Average annual benefit	$ 14,117	$ 14,257
d.	Average age at the valuation date	76.9	77.7

DRAFT

Summary of Historical Active Membership

		Active Members		Covered Payroll		Average Annual Pay			
July 1,	Number of Employers	Number[1]	Percent Increase /(Decrease)	Amount in Thousands[1]	Percent Increase /(Decrease)	Amount	Percent Increase /(Decrease)	Average Age	Average Service
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2002	2	200	-4.3%	4,515	-5.2%	22,573	-0.9%	N/A	N/A
2003	2	170	-15.0%	3,844	-14.9%	22,612	0.2%	N/A	N/A
2004	2	170	0.0%	3,839	-0.1%	22,582	-0.1%	N/A	N/A
2005	2	170	0.0%	3,853	0.4%	22,668	0.4%	N/A	N/A
2006	2	170	0.0%	3,854	0.0%	22,671	0.0%	N/A	N/A
2007	2	170	0.0%	3,854	0.0%	22,671	0.0%	N/A	N/A
2008	2	170	0.0%	3,854	0.0%	22,671	0.0%	N/A	N/A
2009	2	170	0.0%	3,854	0.0%	22,671	0.0%	51.4	9.0
2010	2	170	0.0%	3,854	0.0%	22,671	0.0%	52.3	10.2
2011	2	170	0.0%	3,854	0.0%	22,671	0.0%	52.7	9.8
2012	2	170	0.0%	3,854	0.0%	22,671	0.0%	53.3	10.8
2013	2	119	-30.0%	2,688	-30.3%	22,588	-0.4%	53.7	11.8
2014	2	115	-3.4%	2,601	-3.2%	22,617	0.1%	54.7	12.4
2015	2	104	-9.6%	2,338	-10.1%	22,481	-0.6%	55.6	13.4
2016	2	102	-1.9%	2,316	-0.9%	22,710	1.0%	56.4	14.3

DRAFT

Distribution of Active Members by Age and Service

Attained Age	Years of Credited Service												
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total
Under 20	-	-	-	-	-	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	1	-	-	-	-	-	-	1
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	1	2	-	-	-	-	-	-	3
40-44	-	-	-	-	-	3	4	-	-	-	-	-	7
45-49	-	-	-	-	-	2	5	5	1	1	-	-	14
50-54	-	-	-	-	-	8	2	5	3	1	1	-	20
55-59	-	-	-	-	-	7	5	5	2	2	-	-	21
60-64	-	-	-	-	-	4	5	1	2	1	1	-	14
65 & Over	-	-	-	-	-	6	5	5	2	4	-	-	22
Total	-	-	-	-	1	33	26	21	10	9	2	-	102

DRAFT

Schedule of Annuitants by Type of Benefit

Type of Benefit/ Form of Payment	Number		Annual Benefits Amount		Average Monthly Benefit
(1)	(2)		(3)		(4)
Service :					
Maximum & QDRO	135	$	2,629,963	$	1,623
100% J&S	58		1,217,539		1,749
100% Pop-up	39		751,020		1,605
50% J&S	25		496,013		1,653
50% Pop-up	22		404,143		1,531
Subtotal:	279	$	5,498,678		1,642
Disability:					
Maximum	0	$	0	$	0
Beneficiaries:	79	$	1,115,212	$	1,176
Total:	358	$	6,613,890	$	1,540

DRAFT

Distribution of Annuitants by Monthly Benefit

Monthly Benefit Amount	Number of Annuitants	Female	Male	Average Service
(1)	(2)	(3)	(4)	(5)
Under $200	12	5	7	2.00
$ 200 - 399	14	8	6	10.64
400 - 599	15	6	9	7.00
600 - 799	24	9	15	13.88
800 - 999	35	16	19	14.34
1,000 - 1,199	30	12	18	16.10
1,200 - 1,399	26	5	21	18.58
1,400 - 1,599	34	9	25	19.62
1,600 - 1,799	41	6	35	20.98
1,800 - 1,999	42	9	33	22.67
2,000 - 2,199	21	9	12	29.14
2,200 - 2,399	12	2	10	27.25
2,400 - 2,599	16	2	14	30.63
2,600 - 2,799	13	3	10	33.46
2,800 - 2,999	6	1	5	32.17
3,000 - 3,199	6	1	5	32.50
3,200 - 3,399	5	3	2	43.40
3,400 - 3,599	1	0	1	41.00
3,600 - 3,799	1	1	0	30.00
3,800 - 3,999	2	0	2	29.50
4,000 & Over	2	0	2	30.00
Total	358	107	251	20.16

DRAFT

Schedule of Retirants Added to And Removed from Rolls

	Added to Rolls		Removed from Rolls		Rolls End of the Year		% Increase	Average
July 1,	Number	Annual Benefits($000)	Number	Annual Benefits($000)	Number	Annual Benefits($000)	in Annual Benefit	Annual Benefit
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2002	24	453	9	160	266	4,674	6.7%	17,571
2003	40	839	12	226	294	5,287	13.1%	17,983
2004	12	185	9	119	297	5,353	1.2%	18,024
2005	22	486	7	125	312	5,716	6.8%	18,321
2006	13	238	8	179	317	5,775	1.0%	18,218
2007	18	321	2	13	333	6,083	5.3%	18,267
2008	19	337	10	134	342	6,286	3.3%	18,380
2009	26	505	15	266	353	6,525	3.8%	18,484
2010	7	148	14	261	346	6,412	-1.7%	18,532
2011	12	238	5	108	353	6,542	2.0%	18,534
2012	16	251	11	130	358	6,663	1.8%	18,611
2013	22	444	17	353	363	6,754	1.4%	18,606
2014	12	200	20	358	355	6,596	-2.3%	18,581
2015	15	262	8	193	362	6,666	1.1%	18,414
2016	7	109	11	161	358	6,614	-0.8%	18,475

APPENDIX A

ACTUARIAL ASSUMPTIONS AND METHODS

DRAFT

Summary of Actuarial Methods and Assumptions

The following presents a summary of the actuarial assumptions and methods used in the valuation of the Retirement System for Members of the General Assembly of South Carolina.

Investment Rate of Return

Assumed annual rate of 7.50% net of investment and administrative expenses composed of a 2.25% inflation component and a 5.25% real rate of return, net of investment expenses.

This is a prescribed assumption in Section 9-16-335 of the South Carolina State Code.

Rates of Annual Salary Increase

No increases in salary are assumed.

Active Member Decrement Rates

a. Assumed rates of service retirement are shown in the following table. In addition to the rates in the table below, members with 30 years of service are assumed to immediately commence their retirement benefit. Special contributors are assumed to retire at the earlier of attaining age 60 or attaining 22 years of service.

Age Based Retirement Rates	
Age	**Assumed Rate**
60 & Under	50.00%
61 - 64	10.00%
65 - 69	20.00%
70 & older	100.00%

DRAFT

b. An abbreviated table with the assumed rates of disability and mortality while employed is shown below. There is no active employment withdrawal assumption.

	Disability Rates		Pre-Retirement Mortality	
Age	**Males**	**Females**	**Males**	**Females**
25	0.0419%	0.0458%	0.0460%	0.0164%
30	0.0629%	0.0616%	0.0429%	0.0207%
35	0.0838%	0.0616%	0.0497%	0.0272%
40	0.1572%	0.1074%	0.0597%	0.0376%
45	0.2620%	0.2200%	0.0924%	0.0624%
50	0.4192%	0.3520%	0.1602%	0.1047%
55	0.6812%	0.5720%	0.2649%	0.1589%
60	1.0480%	0.8800%	0.4454%	0.2320%
Multiplier	101%	88%	95%	95%

Note: The multiplier has been applied to the decrement in the illustrative table.

Post Retirement Mortality

a. Healthy retirees and beneficiaries – The 2016 Public Retirees of South Carolina Mortality Table for Males and the 2016 Public Retirees of South Carolina Mortality Table for Females multiplied projected using the AA projection table from the year 2016 with multipliers based on plan experience. The following are sample rates:

Healthy Annuitant Mortality Rates Before Projection		
Age	**Males**	**Females**
50	0.2038%	0.1454%
55	0.3205%	0.2465%
60	0.5863%	0.4265%
65	1.0198%	0.5924%
70	1.5718%	0.9640%
75	2.7195%	1.8534%
80	5.0493%	3.7276%
85	9.1594%	7.0538%
90	15.9042%	12.3489%
Multiplier	100%	111%

Note: The multiplier has been applied to the decrement in the illustrative table.

The following table provides the life expectancy for individuals retiring in future years based on the assumption with full generational projection:

Life Expectancy for an Age 65 Retiree in Years				
	Year of Retirement			
Gender	**2020**	**2025**	**2030**	**2035**
Male	20.6	20.9	21.3	21.6
Female	22.7	22.8	23.0	23.2

DRAFT

b. A separate table of mortality rates is used for disabled retirees based on the RP-2014 Disabled Mortality table projected using the AA projection table from the year 2014 and with multipliers based on plan experience. The following are sample rates of the base table:

Disabled Annuitant Mortality Rates		
Age	**Males**	**Females**
50	2.5494%	1.4884%
55	2.9211%	1.8099%
60	3.3255%	2.1249%
65	3.9606%	2.6075%
70	5.0433%	3.5254%
75	6.7859%	5.1306%
80	9.5770%	7.6295%
85	14.1629%	11.3025%
90	21.6256%	16.5815%
Multiplier	125%	125%

Note: The multiplier has been applied to the decrement in the illustrative table.

Asset Valuation Method

The actuarial value of assets is equal to the market value, adjusted for the five-year phase in of the actual investment return in excess of (or less than) the expected investment return on a market value of asset basis. This five-year phase in begins with the investment experience for the fiscal year ending June 30, 2016. The actual return is calculated net of investment expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's market value of assets, adjusted for contributions, benefits paid, and refunds.

Actuarial Cost Method

The Entry Age Normal actuarial cost method allocates the System's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level dollar amount necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

An unfunded accrued liability exists in the amount equal to the excess of accrued liability over valuation assets. The amortization period of the System is the number of years required to fully amortize the unfunded accrued liability, on an actuarial value of asset basis, with the expected amount of employer contributions in excess of the employers' portion of the normal cost.

DRAFT

Note, the principle financial measurement calculations in this actuarial valuation, which include the unfunded actuarial accrued liability, funded ratio, contributions rates, and funding period, are based on an actuarial value of assets (smoothed value) basis. The actuarial value of assets is a calculated asset value which may be greater than or less than the market value of assets and is used to dampen some of the volatility in the market value of assets. As a result, many of these measures would be different if they were determined on a market value of asset basis.

Future Cost-of-living Increases

No increases are assumed.

Payroll Growth Rate

None assumed.

Other Assumptions

1. The normal cost is increased by $15,000 to account for administrative expenses that are paid with plan assets.

Percent married: 100% of active members are assumed to be married.

2. Age difference: Males are assumed to be four years older than their spouses.
3. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an immediate life annuity.
4. Inactive Population: All non-vested members are assumed to take an immediate refund. Members with a vested benefit are assumed to elect a refund or a deferred benefit commencing at age 60, whichever is more valuable at the valuation date.
5. It is assumed there will be no recoveries once disabled.
6. Decrement timing: Decrements of all types are assumed to occur mid-year.
7. 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.
8. Benefit Service: All active and special contributing members are assumed to accrue one year of eligibility service each year.

Participant Data

Participant data was securely supplied in electronic text files. There were separate files for (i) active and inactive members, and (ii) members and beneficiaries receiving benefits.

DRAFT

The data for active members included birth date, gender, service with the current city and total vesting service, salary, and employee contribution account balances. For retired members and beneficiaries, the data included date of birth, gender, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and form of payment code.

Salary supplied for the current year was based on the annualized earnings for the year preceding the valuation date. Assumptions were made to correct for missing or inconsistent data. These had no material impact on the results presented.

DRAFT

APPENDIX B

BENEFIT PROVISIONS

DRAFT

SUMMARY OF BENEFIT PROVISIONS FOR SOUTH CAROLINA GENERAL ASSEMBLY RETIREMENT SYSTEM (GARS)

Effective Date: January 1, 1966.

Administration: The South Carolina Public Employee Benefit Authority is responsible for the general administrative operations and day to day management of the Plan.

Type of Plan: This is a qualified governmental defined benefit retirement plan.

Eligibility: All members of the General Assembly who acquired office prior to the 2012 general election are required to participate, unless exempted by Statute. Members with eight (8) or more years of credited service that cease membership in the General Assembly may elect to continue earning future service in the system by contributing the required membership contributions (i.e. special contributing member).

Employee Contributions: Effective January 1, 2013, the active member contribution rate increased from 10% to 11% of compensation. Member contributions are credited with interest at the rate of 4.0% per annum. Retired members who are serving in office do not make employee contributions to the system.

Earnable Compensation: $10,400 annually plus 40 times the daily rate of remuneration (i.e. $22,400 in total earnable compensation annually). Certain line-item additional compensation for specified offices is also included.

Service Retirement:

a. Eligibility: A member may retire upon the attainment of age 60 or completing 30 years of credited service, if earlier. Members may commence their benefit before retiring from service upon the attainment of age 70 or after accruing 30 years of service.

b. Monthly Benefit: 4.82% of earnable compensation times credited service.

c. Payment Form: Standard annuity payment

DRAFT

Disability Retirement:

a. Eligibility: Members must have five or more years of credited service, unless the disability is due to performing his or her duties.

b. Monthly Benefit: The member will receive a service retirement benefit if they become disabled after attaining the age of 60 or completed at least 35 years of credited service. Otherwise the member will receive a benefit that is equal to the larger of 1. or 2. below.

   1. 50% of the retirement benefit that would have been payable had he continued service to the earlier of age 60 or 35 years of credited service and his earnable compensation had remained unchanged.
   2. 100% of the retirement benefit based on the member's service and earnable compensation at the time of his disability.

c. Payment Form: Standard annuity payment

d. Death while Disabled: A disabled member is treated as a retired member for purposes of determining a death benefit.

Vesting and Refunds:

a. Eligibility: All members who are not vested are eligible for a refund when they terminate service. Members are vested after eight (8) years of credited service. Vested members may also elect to receive a refund in lieu of the deferred termination benefit described below.

b. Amount: The refund benefit is the accumulated value of the member's contributions plus interest credited by the fund. Members do not earn interest on their employee contribution account balance while they are inactive.

Deferred Termination Benefit:

a. Eligibility: Member must be vested (8 years of credited service) and must elect to leave his/her contributions on deposit.

b. Monthly Benefit: Same as the service retirement benefit, based on service and earnable compensation at termination, and commencing once the member is eligible. Note, special contributors continue to accrue benefits under the system until the earlier of 22 years of creditable service or age 60.

c. Payment Form: Standard annuity payment

d. Death Benefit: The beneficiary of an inactive member who dies is entitled to receive the amount of the member's accumulated contributions (with interest).

DRAFT

Death while an Active Member:

a. In General: A refund of the member's accumulated contributions (with interest) is paid to the beneficiary of a deceased member.

b. Beneficiary Annuity: If the deceased member had attained the age of 60 or had accumulated 15 or more years of creditable service, may elect to receive, in lieu of the accumulated contributions, a monthly benefit for life of the beneficiary.

Optional Forms of Benefit: The System permit members to elect certain optional forms of benefit at retirement. In each case the benefit amount is adjusted to be actuarially equivalent to the "Maximum Option" form. The optional forms of payment include:

a. Maximum Option: A life annuity. Upon the member’s death, any remaining member contributions and interest will be paid to the member’s designated beneficiary.

b. Option 1 (100% Joint & Survivor): A reduced annuity payable as long as either the member or his/her beneficiary is living.

c. Option 1A (100% Joint & Survivor with a revert to Maximum Option feature): A reduced annuity payable as long as either the member or his/her beneficiary is living. In the event the member’s designated beneficiary predeceases the member, then the member shall receive a retirement allowance equal to the maximum option.

d. Option 2 (50% Joint & Survivor): A reduced annuity payable during the member’s life, and continues after the member’s death at 50% of the rate paid to the member for the life of the member’s designated beneficiary.

e. Option 2B (50% Joint & Survivor with a revert to Maximum Option feature): A reduced annuity payable during the member’s life, and continues after the member’s death at 50% of the rate paid to the member for the life of the member’s designated beneficiary. In the event the member’s designated beneficiary predeceases the member, then the member shall receive a retirement allowance equal to the maximum option.

DRAFT

Incidental Death Benefit:

a. Active Employees: The beneficiary (or estate) of an active employee who completes at least one full year of membership service, will receive a death benefit equal to the member's annual earnable compensation at the time of death.

The one full year membership requirement is waived for members whose death is a result of an injury arising out of and in the course of performing his duties.

b. Post Employment: The beneficiary (or estate) of a retiree, both current and future, will receive a one-time payment upon the retiree's death. The amount of the one-time payment is based on the retiree's credited service.

Years of Service Credit	Death Benefit
10 or more, but less than 20	$1,000
20 or more, but less than 30	$2,000
30 or more	$3,000

Postretirement Benefit Increases: Retired members and beneficiaries will receive an adjustment to their benefit equal to the same percentage increase that the General Assembly approves in earnable compensation for active GARS members.

DRAFT

APPENDIX C

GLOSSARY

DRAFT

GLOSSARY

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or ***Funding Method:*** A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ADC.

Actuarial Gain or ***Actuarial Loss:*** A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the Fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)

DRAFT

b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and

c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial valuation for a governmental retirement system typically also includes calculations that provide the financial information of the plan, such as the funded ratio, unfunded actuarial accrued liability and the ADC.

Actuarial Value of Assets or ***Valuation Assets:*** The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: That portion of the pension plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan that is not a Defined Contribution Plan. Typically a defined benefit plan is one in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA, although GASB 25 reporting requires the use of the AVA.

Funding Period or ***Amortization Period:*** The term "Funding Period" is used two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ADC. This funding period is chosen by the Board of Trustees. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 67 and ***GASB 68***: Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting and reporting rules for public retirement systems and the employers that sponsor, participate in, or contribute to them. Statement No. 67 sets the accounting rules for the financial reporting of the retirement systems, while Statement No. 68 sets the rules for the employers that sponsor, participate in, or contribute to public retirement systems.

DRAFT

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

DRAFT

DRAFT

RETIREMENT SYSTEM FOR JUDGES AND SOLICITORS OF THE STATE OF SOUTH CAROLINA (JSRS)

ACTUARIAL VALUATION REPORT

AS OF JULY 1, 2016

GRS
Gabriel Roeder Smith & Company
Consultants & Actuaries
5605 N. MacArthur Blvd.
Suite 870
Irving, TX 75038-2631
469.524.0000 phone
469.524.0003 fax
www.gabrielroeder.com

November 28, 2016

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

Subject: Actuarial Valuation as of July 1, 2016

Dear Members of the Board:

This report describes the current actuarial condition of the Retirement System for Judges and Solicitors of the State of South Carolina (JSRS), determines the calculated employer contribution requirement, and analyzes changes in the System's financial condition. In addition, the report provides various summaries of the data. A separate report is issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements 67 and 68. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of July 1, the first day of the plan year for JSRS. This report was prepared at the request of the Board of Directors of the South Carolina Public Employee Benefit Authority (Board) and is intended for use by the Public Employee Benefit Authority (PEBA) staff and those designated or approved by the Board.

Under South Carolina State statutes, the Board must certify the employer contribution annually. This amount is determined actuarially, based on the Board's funding policy. The contribution rate is determined by a given actuarial valuation and becomes effective twenty-four months after the valuation date. In other words, the contribution rate determined by this July 1, 2016 actuarial valuation will be used by the Board when certifying the employer contribution rate for the year beginning July 1, 2018. If new legislation is enacted between the valuation date and the date the contribution rate becomes effective, the Board may adjust the calculated amount before certifying them, in order to reflect this new legislation. Such adjustments are based on information supplied by the actuary.

FINANCING OBJECTIVES AND FUNDING POLICY

The principle objectives in the funding policy that are maintained by the Board include:

- Establish a contribution rate that remains relatively level over time.
- To set a rate so that the measures of the System's funding progress which includes the unfunded actuarial accrued liability, funded ratio, and funding period will be maintained or improved.

DRAFT

- To set a contribution rate that will amortize the unfunded actuarial accrued liability (UAAL) over a period that does not exceed 30 years.

For JSRS, the Board's funding policy is to determine an employer contribution rate that is at least equal to the sum of the employer normal cost rate (which pays the current year's cost) and an amortization rate which results in the UAAL to be funded over a period that does not exceed 30 years in installments that increase at the assumed rate of growth in payroll for JSRS.

The employer contribution rates that have been certified by the Board to become effective July 1, 2016 are no longer sufficient to maintain a 30 year funding period. As a result, the employer contribution will increase to 49.42% effective July 1, 2018 as a result of this actuarial valuation.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVES

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches at least 100%.

The funded ratio of the System slightly decreased from 58.6% to 56.1%. Absent experience that is significantly different than assumed, we expect the funded ratio to remain relatively constant for the next several years before it begins to gradually improve.

If market value of assets had been used in the calculation instead of actuarial (smoothed) value of assets, the funded ratio for the System would have been 49.7%, compared to 54.3% in the prior year. The decrease in the funded ratio on a market value basis is primarily due to the use of updated actuarial assumptions and unfavorable investment experience during the last fiscal year. Specifically, the market value of assets earned a -0.47% return determined using the method specified by GASB 67 and reported in the financial statement of the South Carolina Retirement Systems for the year ending June 30, 2016. The -0.7% return documented in this report was determined on a dollar-weighted basis and is net of expenses and assumed mid-year cash flows.

ASSUMPTIONS AND METHODS

South Carolina State Code also requires that an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. An experience study was conducted for the five-year period ending June 30, 2015. The following is a summary of the assumptions that were adopted by the Board and used in preparing this actuarial valuation:

- Decrease the price inflation assumption from 2.75% to 2.25%.
- Decrease in the assumed rate of salary increases for individual members and the COLA provided to retirees from 3.00% to 2.75% per year.
- Decrease the payroll growth assumption from 3.00% to 2.75%.
- Adopt new post-retirement mortality tables specific to South Carolina retiree experience. Mortality for retirees is assumed to improve based on generational projection Scale AA.

DRAFT

- Minor adjustments to the pre-retirement mortality assumption.
- Modify the rates of retirement and disability.
- Modify the asset method such that each year's investment gain or loss (determined on a market value of asset basis) is recognized over a closed five-year period at the rate of 20% per year.

The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.50% investment return assumption.

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can, and almost certainly will, differ as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rate, and funding periods. The actuarial calculations are intended to provide information for rational decision making.

BENEFIT PROVISIONS

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2016. There were no legislative changes enacted since the previous valuation that had a measureable effect on the current valuation.

DATA

Census data for retired, active and inactive members was supplied as of July 1, 2016, by the PEBA staff. The staff also supplied asset information as of July 1, 2016. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. GRS is not responsible for the accuracy or completeness of the information provided to us by PEBA.

CERTIFICATION

We certify that the information presented herein is accurate and fairly portrays the actuarial position of JSRS as of July 1, 2016.

All of our work conforms with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of South Carolina Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

DRAFT

The undersigned are independent actuaries and consultants. Mr. Newton and Mr. White are Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Both are experienced in performing valuations for large public retirement systems.

Sincerely,

Gabriel, Roeder, Smith & Co.

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

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

DRAFT

TABLE OF CONTENTS

DRAFT

SECTION A

EXECUTIVE SUMMARY

DRAFT

Executive Summary

(Dollar amounts expressed in thousands)

Valuation Date:	July 1, 2016	July 1, 2015
Membership		
• Number of		
- Active members[1]	157	157
- Retirees and beneficiaries	187	186
- DROP and Retired-in-Place members	23	20
- Inactive members	2	2
- Total	346	345
• Projected payroll of active members	$21,958	$21,267
Contribution Rates		
• Employer contribution rate	49.42% [2]	47.97%
• Member	10.00%	10.00%
Assets		
• Market value	$140,717	$146,353
• Actuarial value	158,837	157,983
• Return on market value	-0.7%	1.5%
• Return on actuarial value	3.6%	5.6%
• Ratio of actuarial to market value of assets	112.9%	107.9%
• External cash flow %	-3.3%	-2.2%
Actuarial Information		
• Normal cost %	27.69%	27.68%
• Actuarial accrued liability (AAL)	$283,304	$269,675
• Unfunded actuarial accrued liability (UAAL)	124,467	111,692
• Funded ratio	56.1%	58.6%
• Funding period (years)	30	27
Reconciliation of UAAL		
• Beginning of Year UAAL	$111,692	$111,454
- Interest on UAAL	8,377	8,359
- Amortization payment	(7,609)	(7,104)
- Assumption/method changes	6,102	0
- Asset experience	6,129	3,104
- COLA	907	(5,377)
- Salary experience	(2,346)	(594)
- Other liability experience	1,215	1,381
- Legislative Changes	0	469
• End of Year UAAL	$124,467	$111,692

[1] Active member counts include unfilled positions and members in DROP or Retired-in-Place.

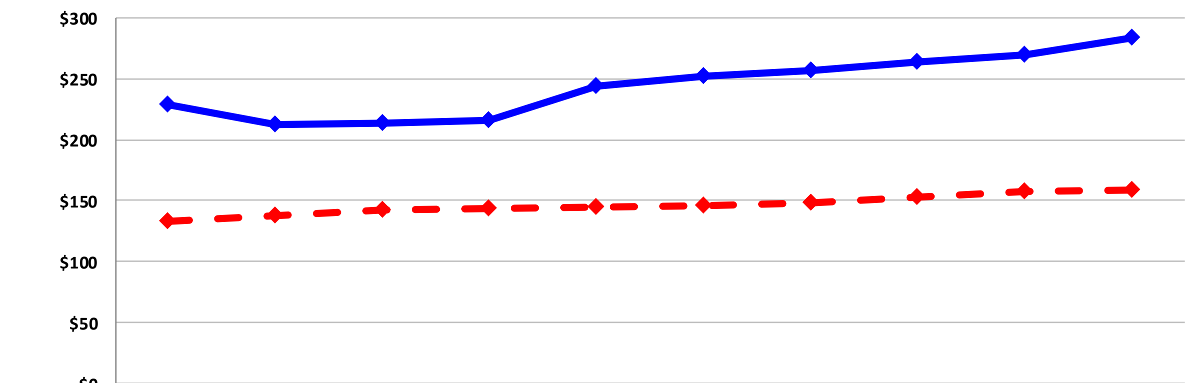
[2] The contribution rate determined by the July 1, 2016 actuarial valuation is subject to approval and adoption by the Public Employee Benefit Authority before becoming effective for the fiscal year beginning July 1, 2018. The contribution rate includes the cost of incidental death benefits.

DRAFT

EXECUTIVE SUMMARY (CONTINUED)

The unfunded actuarial accrued liability increased by $12.8 million since the prior year's valuation to $124.5 million. The largest source of this increase is the $6.1 million increase because of the recognition of investment losses that were incurred in prior years (including a portion of the FY 2016 investment loss). Below is a chart with the historical actuarial value of assets and actuarial accrued liability for JSRS.

Chart 1. - History of Actuarial Assets vs. Actuarial Accrued Liability
(Dollars in Millions)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AAL	$229	$213	$214	$216	$244	$252	$257	$264	$270	$283
AVA	$133	$138	$142	$143	$145	$146	$148	$153	$158	$159

Due to the investment return for the fiscal year ending June 30, 2016, the deferred investment loss increased from $11.6 million in the prior year's valuation to $18.1 million in this year's actuarial valuation. Absent favorable investment experience, those deferred losses will be reflected in the actuarial value of assets over the next few years.

The required employer contribution rate will increase to 49.42% of pay for fiscal year 2019 (i.e. effective July 1, 2018). Absent legislative changes or significantly favorable investment experience, we expect the required contribution rate will need to increase in each of the next four or five years as the $18.1 million in deferred investment loss becomes recognized in the actuarial value of assets.

SECTION B

DISCUSSION

DRAFT

DISCUSSION

The results of the July 1, 2016 actuarial valuation of the Retirement System for Judges and Solicitors are presented in this report. The purposes of the valuation report are to depict the current financial condition of the System, determine the amortization period resulting from the current contribution rates, and analyze changes in the System's financial condition. In addition, the report provides various summaries of the members participating in the plan.

This section discusses the determination of the current funding requirements and the System's funded status, as well as changes in the financial condition of the retirement system.

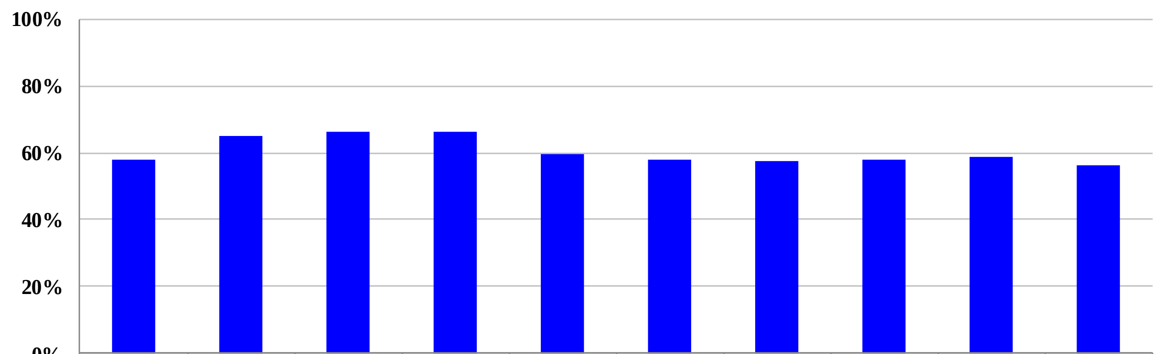
All of the actuarial and financial tables referenced by the other sections of this report appear in Section C. Section D provides member data and statistical information. Appendices A and B provide summaries of the principle actuarial assumptions and methods and plan provisions. Finally, Appendix C provides a glossary of technical terms that are used throughout this report.

DRAFT

Funding Progress

The funded ratio slightly decreased from 58.6% to 56.1% since the prior valuation. As shown in the table below, the funding ratio (on a smoothed asset basis) has been relatively level over the past 10 years. Table 10, Schedule of Funding Progress, in the following section of the report provides additional detail regarding the funding progress of the Retirement System.

Chart 2. - Funded Ratio
Actuarial Assets as a percentage of Actuarial Accrued Liabilities



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Funded Ratio	58.0%	64.8%	66.1%	66.2%	59.5%	57.8%	57.5%	57.8%	58.6%	56.1%

It is expected that the funded ratio (on an actuarial value of asset basis) will remain relatively constant for the next few years, then gradually improve. Also, based on the current funding policy and contribution rates, we expect the dollar amount of the unfunded actuarial accrued liability, or the difference between the actuarial accrued liability and the actuarial value of assets, to gradually increase for the next eight to ten years before beginning to decrease.

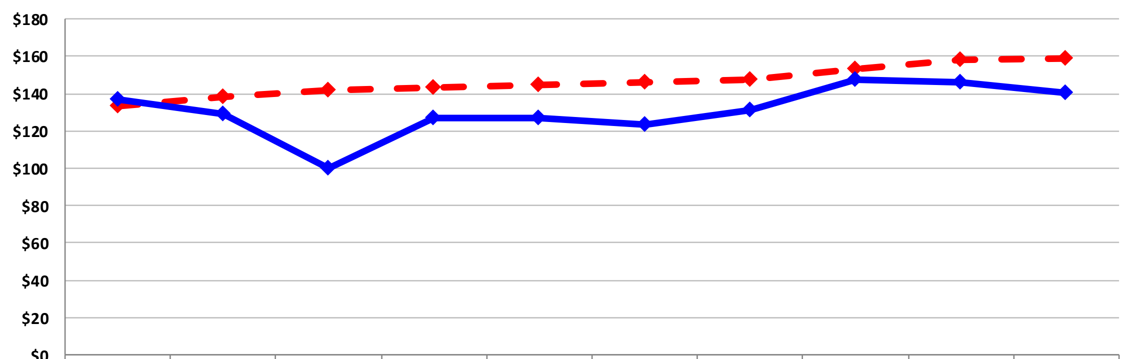
Asset Gains/(Losses)

The actuarial value of assets ("AVA") is based on a smoothed market value of assets, using a systematic approach to phase-in the difference between the actual and expected investment return on the market value of assets (adjusted for receipts and disbursements during the year). This is appropriate because it dampens the short-term volatility inherent in investment markets. The returns are computed net of investment expenses. The actuarial value of assets increased from $158.0 million to $158.8 million since the prior valuation. Table 8 in the following section of the report provides the development of the actuarial value of assets.

The rate of return on the mean market value of assets in 2016 was -0.7%. Additionally, because of the recognition of prior investment experience, the actuarial (smoothed) asset value returned only 3.6%. This difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.

The market value of assets is less than the actuarial value of assets, which signifies that the retirement system is in a position of deferred losses. Therefore, unless the System experiences investment returns in excess of the assumed rate of return, the future recognition of these deferred losses is expected to increase the unfunded actuarial accrued liability and decrease the System's funded ratio over the next few years.

Chart 3. - History of Actuarial Value and Market Value of Assets
(Dollars in Millions)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AVA	$133	$138	$142	$143	$145	$146	$148	$153	$158	$159
MVA	$137	$129	$100	$127	$127	$123	$131	$147	$146	$141

Assets as of July 1,

Tables 6 and 7 in the following section of this report provide asset information that was included in the annual financial statements of the System. Also, Table 9 shows the estimated yield on a market value basis and on the actuarial asset valuation method.

DRAFT

Actuarial Gains/(Losses) and the Contribution Requirement

The annual actuarial valuation is a snapshot analysis of the benefit liabilities, assets and funded position of the System as of the first day of the plan year. In any one fiscal year, the experience can be better or worse from that which is assumed or expected. The actuarial assumptions do not necessarily attempt to model what the experience will be for any one given fiscal year, but instead try to model the overall experience over many years. The demographic experience for the last year is briefly summarized in the chart below.

The unfunded actuarial accrued liability (UAAL) has increased from $111.7 million in 2015 to $124.5 million in 2016. The table below shows the source of the gains and losses and the impact of those gains and losses on the UAAL.

Reconciliation of UAAL
(Dollars in thousands)

• Beginning of Year UAAL	$111,692
- Interest on UAAL	8,377
- Amortization payment	(7,609)
- Assumption/method changes	6,102
- Asset Experience	6,129
- COLA	907
- Salary Experience	(2,346)
- Other Liability Experience	1,215
- Legislative Changes	0
• End of Year UAAL	$124,467

DRAFT

The following table provides a reconciliation of the change in the funding period from 2015 to 2016 based on the current employer contribution rate of 47.97%. The liability experience providing the largest positive impact to the funding period includes the impact of deferred losses and other negative demographic experience.

Change in Funding Period (Years)
Based on a 47.97% Contribution Rate

• Prior Year	26.7
- Expected Experience	(1.0)
- Assumption Change	3.8
- Asset Experience	3.8
- COLA Experience	0.6
- Salary Experience	(1.8)
- Other Demographic Experience	1.2
- Legislative Changes	0.0
- Total Change	6.6
• Current Year Valuation (before reflecting an increase in the contribution rate)	33.3

This funding method and contribution policy is designed to result in relatively level contribution requirements from year to year. However, absent favorable future investment or liability experience, it is possible the contribution requirement will increase over the next several years as existing deferred investment losses become fully recognized in the actuarial value of assets and the calculation of the recommended contribution rate.

Also, note that the current funding policy utilizes a level percentage of payroll amortization method, which assumes that covered payroll will increase at the rate of 2.75% per year in the future (it does not assume an increase in active membership). As a result, the amortization payments will not be sufficient to cover all of the interest cost on the UAAL until the funding period decreases to approximately 20 years. Therefore, stakeholders should expect the dollar amount of the unfunded actuarial accrued liability to gradually increase until the funding period decreases below 20 years.

DRAFT

Actuarial Assumptions and Methods

In determining costs and liabilities, actuaries use assumptions about the future, such as probabilities of retirement, termination, death and disability, and an annual investment return assumption. South Carolina State Code also requires that an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. An experience study was conducted for the five-year period ending June 30, 2015. The following is a summary of the assumptions that were adopted by the Board and used in preparing this actuarial valuation:

- Decrease the price inflation assumption from 2.75% to 2.25%.
- Decrease in the assumed rate of salary increases for individual members and the COLA provided to retirees from 3.00% to 2.75% per year.
- Decrease the payroll growth assumption from 3.00% to 2.75%.
- Adopt new post-retirement mortality tables specific to South Carolina retiree experience. Mortality for retirees is assumed to improve based on generational projection Scale AA.
- Minor adjustments to the pre-retirement mortality assumption.
- Modify the rates of retirement and disability.
- Modify the asset method such that each year's investment gain or loss (determined on a market value of asset basis) is recognized over a closed five-year period at the rate of 20% per year.

The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.50% investment return assumption.

Appendix A includes a summary of the actuarial assumptions and methods used in this valuation. It is our opinion that the assumptions are internally consistent and are reasonable and reflect anticipated future experience of the System. The next experience study will be conducted no later than as of June 30, 2020.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. This report 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.

DRAFT

Benefit Provisions

Appendix B of this report includes a summary of the benefit provisions for JSRS. There were no legislative changes enacted since the previous valuation that had a measurable effect on the current valuation.

Below is a summary of the retirement provisions for members in the Retirement System.

Summary of Retirement Provisions

- A retirement benefit equal to 71.3% of the current active salary of the position from which the member retired plus an additional 2.67% of compensation for each year of service beyond 25 years for judges and 24 years for solicitors and public defenders (subject to a maximum retirement allowance that does not exceed 90% of salary).
- The normal form of payment for a married member is a 33 1/3 joint and survivor annuity.
- Active members contribute 10% of compensation.
- Members are eligible for retirement after they have (i) attained age 70 with 15 years of service, or (ii) attained age 65 with 20 years of service or (iii) completed 25 years of creditable service for judges and 24 years for solicitors and public defenders regardless of age.
- Members who have accrued a retirement allowance that is 90% of salary may elect to "retire in place" and begin to receive their accrued retirement benefits while remaining employed. Members who have retired in place but have not attained age 60 will have their retirement benefit paid into a deferred retirement option program (DROP) and receive the balance of their DROP account upon attaining age 60.
- The mandatory retirement age is 72.

DRAFT

SECTION C

ACTUARIAL TABLES

DRAFT

ACTUARIAL TABLES

DRAFT

Summary of Cost Items

(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Projected payroll of active members[1]	$ 21,958	$ 21,267
2.	Present value of future pay	$ 140,075	$ 150,870
3.	Normal cost rate		
	a. Total normal cost rate	27.69%	27.68%
	b. Less: member contribution rate	-10.00%	-10.00%
	c. Employer normal cost rate	17.69%	17.68%
4.	Actuarial accrued liability for active members		
	a. Present value of future benefits	$ 119,772	$ 123,305
	b. Less: present value of future normal costs	(36,850)	(40,170)
	c. Actuarial accrued liability	$ 82,922	$ 83,135
5.	Total actuarial accrued liability for:		
	a. Retirees and beneficiaries	$ 200,323	$ 186,481
	b. Inactive members	59	59
	c. Active members (Item 4c)	82,922	83,135
	d. Total	$ 283,304	$ 269,675
6.	Actuarial value of assets	$ 158,837	$ 157,983
7.	Unfunded actuarial accrued liability (UAAL) (Item 5d - Item 6)	$ 124,467	$ 111,692
8.	Applicable required contribution rate		
	a. Employer normal cost rate	17.69%	17.68%
	b. Employer contribution rate available to amortize the UAAL	31.73%	30.29%
	c. Total employer contribution rate[2]	49.42%	47.97%
9.	Funding period based on the current employer contribution rate (years)	30	27

[1] The projected payroll is based on all filled and unfilled positions.

[2] The contribution rate of 49.42% is scheduled to become effective July 1, 2018.

DRAFT

Actuarial Present Value of Future Benefits
(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Active members		
	a. Service retirement	$ 110,239	$ 111,951
	b. Survivor benefits	1,840	3,418
	c. Disability benefits	7,693	7,936
	d. Total	$ 119,772	$ 123,305
2.	Retired members		
	a. Service retirement	$ 184,248	$ 170,481
	b. Disability retirement	0	0
	c. Beneficiaries	16,075	16,000
	d. Total	$ 200,323	$ 186,481
3.	Inactive members		
	a. Vested terminations	$ 0	$ 0
	b. Nonvested terminations	59	59
	c. Total	$ 59	$ 59
4.	Total actuarial present value of future benefits	$ 320,154	$ 309,845

DRAFT

Analysis of Normal Cost

	July 1, 2016 (1)	July 1, 2015 (2)
1. Total normal cost rate		
a. Service retirement	23.04%	22.23%
b. Survivor benefits	0.69%	1.67%
c. Disability benefits	3.84%	3.78%
d. Total	27.57%	27.68%
2. Admin expense	0.12%	N/A
3. Less: member contribution rate	10.00%	10.00%
4. Net employer normal cost rate	17.69%	17.68%

Note: The normal cost includes the cost for incidental death benefits.

DRAFT

Results of July 1, 2016 Valuation
(Dollar amounts expressed in thousands)

		July 1, 2016 (1)
1.	Actuarial Present Value of Future Benefits	
	a. Present retired members and beneficiaries	$ 200,323
	b. Present active and inactive members	119,831
	c. Total actuarial present value	$ 320,154
2.	Present Value of Future Normal Contributions	
	a. Employee	$ 14,008
	b. Employer	22,842
	c. Total future normal contributions	$ 36,850
3.	Actuarial Liability	$ 283,304
4.	Current Actuarial Value of Assets	$ 158,837
5.	Unfunded Actuarial Liability	$ 124,467
6.	UAAL Amortization rates based on a 49.42% employer contribution rate	
	a. Active members	31.73%
	b. DROP and Retired-in-Place Members (including employee contributions)	59.42%
7.	Unfunded Actuarial Liability Liquidation Period	30 Years

Note: The employer contribution rate includes the cost for incidental death benefits.

DRAFT

Actuarial Balance Sheet

(Dollar amounts expressed in thousands)

	July 1, 2016 (1)	July 1, 2015 (2)
1. Assets		
a. Current assets (actuarial value)		
i. Employee annuity savings fund	$ 25,082	$ 24,650
ii. Employer annuity accumulation fund	133,755	133,333
iii. Total current assets	$ 158,837	$ 157,983
b. Present value of future member contributions	$ 14,008	$ 15,087
c. Present value of future employer contributions		
i. Normal contributions	$ 22,842	$ 25,083
ii. Accrued liability contributions	124,467	111,692
iii. Total future employer contributions	$ 147,309	$ 136,775
d. Total assets	$ 320,154	$ 309,845
2. Liabilities		
a. Employee annuity savings fund		
i. Past member contributions	$ 25,082	$ 24,650
ii. Present value of future member contributions	14,008	15,087
iii. Total contributions to employee annuity savings fund	$ 39,090	$ 39,737
b. Employer annuity accumulation fund		
i. Benefits currently in payment	$ 200,323	$ 186,481
ii. Benefits to be provided to other members	80,741	83,627
iii. Total benefits payable from employer annuity accumulation fund	$ 281,064	$ 270,108
c. Total liabilities	$ 320,154	$ 309,845

System Net Assets
Assets at Market or Fair Value
(Dollar amounts expressed in thousands)

Item	July 1, 2016	July 1, 2015
(1)	(2)	(3)
1. Cash and cash equivalents (operating cash)	$ 21,386	$ 16,640
2. Receivables	4,477	3,249
3. Investments		
a. Short-term securities	$ 3,913	$ 3,753
b. Fixed income (global)	28,906	39,115
c. Public equity (global)	35,597	34,975
d. Global tactical asset allocation	9,707	10,896
e. Alternative investments	44,424	43,964
f. Total investments	$ 122,547	$ 132,703
4. Securities lending cash collateral invested	$ 275	$ 344
5. Prepaid administrative expenses	18	15
6. Capital assets, net of accumulated depreciation	12	13
7. Total assets	$ 148,715	$ 152,964
8. Liabilities		
a. Due to other systems	$ 0	$ 0
b. Accounts payable	7,117	5,870
c. Investment fees payable	47	41
d. Obligations under securities lending	275	344
e. Deferred retirement benefits	0	0
f. Due to employee insurance program	0	0
g. Benefit payable	0	0
h. Other liabilities	559	356
i. Total liabilities	$ 7,998	$ 6,611
9. Total market value of assets available for benefits (Item 7. - Item 8.i.)	$ 140,717	$ 146,353
10. Asset allocation (investments)[1]		
a. Net invested cash	15.7%	11.9%
b. Fixed income	20.5%	26.8%
c. Public equity	25.3%	23.9%
d. Global tactical asset allocation	6.9%	7.4%
e. Alternative investments	31.6%	30.0%
f. Total investments	100.0%	100.0%

[1] These asset allocations are calculated based on the dollar amounts shown in items 1. through 9. above and, due to cash flow and rebalancing timing, may be slightly different than the allocation percentages reported by the South Carolina Retirement System Investment Commission.

DRAFT

Reconciliation of System Net Assets

(Dollar amounts expressed in thousands)

	Year Ending	
	July 1, 2016	July 1, 2015
	(1)	(2)
1. Value of assets at beginning of year	$ 146,353	$ 147,496
2. Revenue for the year		
a. Contributions		
i. Member contributions	$ 2,303	$ 3,153
ii. Employer contributions	10,202	10,109
iii. Total	$ 12,505	$ 13,262
b. Income		
i. Interest, dividends, and other income	$ 2,005	$ 1,723
ii. Investment expenses	(1,299)	(236)
iii. Net	$ 706	$ 1,487
c. Net realized and unrealized gains (losses)	(1,577)	729
d. Total revenue	$ 11,634	$ 15,478
3. Expenditures for the year		
a. Disbursements		
i. Refunds	$ 60	$ 0
ii. Regular annuity benefits	16,989	16,832
iii. Other benefit payments	143	4
iv. Transfers to other systems	3	(286)
v. Total	$ 17,195	$ 16,550
b. Administrative expenses and depreciation	75	71
c. Total expenditures	$ 17,270	$ 16,621
4. Increase in net assets (Item 2. - Item 3.)	$ (5,636)	$ (1,143)
5. Value of assets at end of year (Item 1. + Item 4.)	$ 140,717	$ 146,353
6. Net external cash flow		
a. Dollar amount	$ (4,690)	$ (3,288)
b. Percentage of market value	-3.3%	-2.2%

DRAFT

Development of Actuarial Value of Assets
(Dollar amounts expressed in thousands)

		Year Ending June 30, 2016
1.	Actuarial value of assets at beginning of year	$ 157,983
2.	Market value of assets at beginning of year	$ 146,353
3.	Net new investments	
	a. Contributions	$ 12,505
	b. Disbursements[1]	(17,195)
	c. Subtotal	(4,690)
4.	Market value of assets at end of year	$ 140,717
5.	Net earnings (Item 4. - Item 2. - Item 3.c.)	$ (946)
6.	Assumed investment return rate for fiscal year	7.50%
7.	Expected return	$ 10,801
8.	Excess return (Item 5. - Item 7.)	$ (11,747)

9. Excess return on assets as of June 30, 2016:

	Fiscal Year Ending June 30, (1)	Excess Return (2)	Percent Deferred (3)	Deferred Amount (4)
a.	2016	$ (11,747)	80%	$ (9,398)
b.	2015	(14,537)	60%	(8,722)
c.	2014	N/A	40%	N/A
d.	2013	N/A	20%	N/A
e.	2012	N/A	0%	N/A
f.	Total			$ (18,120)

10.	Actuarial value of assets as of June 30, 2016 (Item 4. - Item 9.f.)	$ 158,837
11.	Expected actuarial value as of June 30, 2016	$ 164,966
12.	Asset gain (loss) for year (Item 10. - Item 11.)	$ (6,129)
13.	Asset gain (loss) as % of the actuarial value of assets	-3.9%
14.	Ratio of actuarial value to market value	112.9%

[1] For the year ending June 30, 2016, the investment return assumption was net of administration and investment expenses. Beginning July 1, 2016, the investment return assumption is only net of investment expenses.

DRAFT

Estimation of Yields
(Dollar amounts expressed in thousands)

	Year Ending July 1, 2016 (1)	Year Ending July 1, 2015 (2)
1. Market value yield		
a. Beginning of year market assets	$ 146,353	$ 147,496
b. Contributions to fund during the year	12,505	13,262
c. Disbursements	(17,195)	(16,550)
d. Investment income (net of investment and administrative expenses)	(946)	2,145
e. End of year market assets	$ 140,717	$ 146,353
f. Estimated dollar weighted market value yield	-0.7%	1.5%
2. Actuarial value yield		
a. Beginning of year actuarial assets	$ 157,983	$ 152,839
b. Contributions to fund during the year	12,505	13,262
c. Disbursements	(17,195)	(16,550)
d. Investment income (net of investment and administrative expenses)	5,544	8,432
e. End of year actuarial assets	$ 158,837	$ 157,983
f. Estimated actuarial value yield	3.6%	5.6%

DRAFT

Schedule of Funding Progress
(Dollar amounts expressed in thousands)

July 1,	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2002	100,074	166,440	66,366	60.1%	14,211	467.0%
2003	106,114	166,655	60,541	63.7%	14,437	419.3%
2004	112,016	185,052	73,036	60.5%	14,870	491.2%
2005	118,888	204,847	85,959	58.0%	15,465	555.8%
2006	124,837	211,384	86,547	59.1%	15,929	543.3%
2007	132,990	229,388	96,398	58.0%	16,407	587.5%
2008	138,323	213,406	75,083	64.8%	18,661	402.4%
2009	141,797	214,363	72,566	66.1%	18,661	388.9%
2010	142,871	215,823	72,952	66.2%	18,661	390.9%
2011	144,927	243,514	98,587	59.5%	18,661	528.3%
2012	145,604	251,729	106,125	57.8%	19,221	552.1%
2013	147,648	256,988	109,340	57.5%	20,407	535.8%
2014	152,839	264,293	111,454	57.8%	20,815	535.4%
2015	157,983	269,675	111,692	58.6%	21,267	525.2%
2016	158,837	283,304	124,467	56.1%	21,958	566.8%

DRAFT

Summary of Principle Assumptions and Methods

Below is a summary of the principle economic assumptions, cost method, and the method for financing the unfunded actuarial accrued liability:

Valuation date:	July 1, 2016
Actuarial cost method:	Entry Age Normal
Amortization method:	Level percentage of payroll
Amortization period for contribution rate:	30-year open period[1]
Asset valuation method:	5-Year Smoothing
Actuarial assumptions:	
Investment rate of return[2]	7.50%
Projected salary increases	2.75%
Inflation	2.25%
Cost-of-living adjustments	2.75%
Retiree mortality	The 2016 Public Retirees of South Carolina Mortality Table projected at Scale AA from the year 2016. Male rates are multiplied by 92% and female rates are multiplied by 98%.

[1] The Board will maintain the prior year's contribution rate to the extent the amortization period does not exceed 30 years.

[2] This is a prescribed assumption in Section 9-16-335 of South Carolina State Code.

DRAFT

Solvency Test

(Dollar amounts expressed in thousands)

	Actuarial Accrued Liability				Portion of Aggregate Accrued Liabilities Covered by Assets		
July 1,	Active Member Contributions	Retirants & Beneficiaries	Active & Inactive Members (Employer Financed)	Valuation Assets	Active	Retirants	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2002	$ 16,162	$ 101,716	$ 48,562	$ 100,074	100.0%	82.5%	0.0%
2003	16,545	96,409	53,701	106,114	100.0%	92.9%	0.0%
2004	17,640	106,159	61,253	112,016	100.0%	88.9%	0.0%
2005	20,005	110,876	73,966	118,888	100.0%	89.2%	0.0%
2006	21,857	112,823	76,704	124,837	100.0%	91.3%	0.0%
2007	18,999	149,435	60,954	132,990	100.0%	76.3%	0.0%
2008	17,367	141,510	54,529	138,323	100.0%	85.5%	0.0%
2009	18,431	144,464	51,468	141,797	100.0%	85.4%	0.0%
2010	17,816	150,696	47,311	142,871	100.0%	83.0%	0.0%
2011	18,864	169,841	54,809	144,927	100.0%	74.2%	0.0%
2012	20,005	177,483	54,241	145,604	100.0%	70.8%	0.0%
2013	21,369	178,526	57,093	147,648	100.0%	70.7%	0.0%
2014	22,926	184,625	56,742	152,839	100.0%	70.4%	0.0%
2015	24,650	186,481	58,544	157,983	100.0%	71.5%	0.0%
2016	25,082	200,323	57,899	158,837	100.0%	66.8%	0.0%

DRAFT

SECTION D

MEMBERSHIP DATA

DRAFT

MEMBERSHIP TABLES

DRAFT

Summary of Membership Data

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Active members		
a.	Males	113	115
b.	Females	44	42
c.	Total members[1]	157	157
d.	Total annualized pay[2]	$ 21,958,224	$ 21,267,185
e.	Average pay[2]	$ 138,102	$ 133,756
f.	Average age	57.2	56.5
g.	Average credited service	15.4	15.1
h.	Member contributions with interest	$ 25,082,000	$ 24,650,000
i.	Average contributions with interest	$ 159,758	$ 157,006
2.	Vested inactive members		
a.	Number	0	0
b.	Total annual deferred benefits	$ 0	$ 0
c.	Average annual deferred benefit	$ 0	$ 0
3.	Nonvested inactive members		
a.	Number	2	2
b.	Member contributions with interest	$ 59,482	$ 59,482
c.	Average contributions with interest	$ 29,741	$ 29,741
4.	Service retirees		
a.	Number[1]	155	151
b.	Total annual benefits	$ 16,123,054	$ 15,075,781
c.	Average annual benefit	$ 104,020	$ 99,840
d.	Average age at the valuation date	71.1	70.5
5.	Disabled retirees		
a.	Number	0	0
b.	Total annual benefits	$ 0	$ 0
c.	Average annual benefit	$ 0	$ 0
d.	Average age at the valuation date	N/A	N/A
6.	Beneficiaries		
a.	Number	55	55
b.	Total annual benefits	$ 1,593,995	$ 1,586,613
c.	Average annual benefit	$ 28,982	$ 28,848
d.	Average age at the valuation date	69.8	69.9

[1] Includes members in DROP and Retired-in-Place. It does not include unfilled positions.

[2] Based on filled and unfilled positions.

DRAFT

Summary of Historical Active Membership

	Active Members		Covered Payroll	Average Annual Pay			
July 1,	Number of Employers	Number[1]	Amount in Thousands[1]	Amount	Percent Increase /(Decrease)	Average Age	Average Service
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2002	2	128	14,211	111,026	0.73%	53	16
2003	2	128	14,437	112,789	1.59%	54	17
2004	2	128	14,870	116,172	3.00%	54	18
2005	2	128	15,465	120,820	4.00%	55	19
2006	2	128	15,929	124,445	3.00%	55	20
2007	2	128	16,407	128,176	3.00%	55	19
2008	3	144	18,661	129,590	1.10%	54	15
2009	3	144	18,661	129,590	0.00%	55.0	15.4
2010	3	144	18,661	129,590	0.00%	54.9	15.0
2011	3	144	18,661	129,590	0.00%	55.1	14.3
2012	3	144	19,221	133,476	3.00%	55.6	15.1
2013	3	153	20,407	133,381	-0.07%	56.0	15.5
2014	3	153	20,815	136,048	2.00%	56.3	15.1
2015	3	157	21,267	133,756	0.28%	56.5	15.1
2016	3	157	21,958	139,861	4.56%	57.2	15.4

[1] Includes filled and unfilled positions and members in DROP or Retired-in-Place.

DRAFT

Distribution of Active Members by Age and by Years of Service

	Years of Credited Service												
Attained Age	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
20-24	0	0	0	0	0	0	0	0	0	0	0	0	0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
25-29	0	0	0	0	0	0	0	0	0	0	0	0	0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
30-34	0	0	0	0	0	0	0	0	0	0	0	0	0
	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
35-39	1	3	0	0	0	0	0	0	0	0	0	0	4
	$135,432	$135,704	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$135,636
40-44	0	0	0	2	0	2	2	1	0	0	0	0	7
	$0	$0	$0	$135,103	$0	$136,905	$135,103	$136,905	$0	$0	$0	$0	$135,875
45-49	1	0	1	5	1	7	1	3	4	0	0	0	23
	$135,432	$0	$133,302	$135,464	$133,302	$135,876	$136,905	$136,905	$136,905	$0	$0	$0	$135,901
50-54	0	2	0	4	2	7	2	2	5	1	0	0	25
	$0	$136,168	$0	$134,203	$135,103	$134,846	$135,103	$140,014	$136,184	$136,905	$0	$0	$135,653
55-59	0	3	1	3	0	8	5	3	7	4	0	0	34
	$0	$131,141	$133,302	$133,302	$0	$135,103	$134,050	$136,414	$134,846	$138,706	$0	$0	$134,873
60-64	0	1	0	0	0	6	1	5	5	4	1	0	23
	$0	$136,905	$0	$0	$0	$135,103	$133,302	$135,464	$135,890	$136,905	$144,111	$0	$136,058
65 & Over	1	0	0	0	0	8	2	2	3	1	1	0	18
	$135,432	$0	$0	$0	$0	$135,554	$136,905	$133,302	$135,704	$136,905	$140,508	$0	$135,822
Total	3	9	2	14	3	38	13	16	24	10	2	0	134
	$135,432	$134,420	$133,302	$134,589	$134,503	$135,388	$134,975	$136,301	$135,793	$137,625	$142,310	$0	$135,601

Information shown above is for members in JSRS earning retirement benefits. It does not include unfilled positions or members that are retired-in-place.

Distribution of Annuitants by Monthly Benefit

Monthly Benefit Amount	Number of Annuitants	Female	Male	Average Service
(1)	(2)	(3)	(4)	(5)
Under $500	0	0	0	0.00
$ 500 - 999	10	10	0	25.37
1,000 - 1,499	1	1	0	12.00
1,500 - 1,999	5	5	0	23.87
2,000 - 2,499	3	3	0	13.53
2,500 - 2,999	25	25	0	21.13
3,000 - 3,499	13	12	1	29.28
3,500 - 3,999	4	4	0	27.08
4,000 - 4,499	2	1	1	22.21
4,500 - 4,999	3	1	2	13.61
5,000 - 5,499	3	0	3	18.75
5,500 - 5,999	1	1	0	16.50
6,000 - 6,499	4	2	2	21.48
6,500 - 6,999	4	0	4	19.29
7,000 - 7,499	4	0	4	23.50
7,500 - 7,999	2	0	2	22.42
8,000 - 8,499	43	3	40	22.56
8,500 - 8,999	16	1	15	26.05
9,000 - 9,499	12	2	10	28.40
9,500 - 9,999	7	0	7	30.01
10,000 & Over	48	3	45	31.81
Total	210	74	136	25.56

DRAFT

Schedule of Retirants Added to and Removed from Rolls

(Dollar amounts except average allowance expressed in thousands)

	Added to Rolls		Removed from Rolls		Rolls End of the Year		% Increase	Average
July 1,	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits	in Annual Benefit	Annual Benefit
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2002	13	706	5	248	126	8,052	6.0%	63,905
2003	11	716	7	493	130	8,275	2.8%	63,654
2004	11	925	2	139	139	9,061	9.5%	65,190
2005	3	581	1	27	141	9,615	6.1%	68,191
2006	4	464	1	28	144	10,051	4.5%	69,799
2007	32	2,690	1	30	175	12,711	26.5%	72,634
2008	6	545	3	156	178	13,100	3.1%	73,596
2009	10	903	4	259	184	13,744	4.9%	74,696
2010	18	1,210	8	593	194	14,361	4.5%	74,025
2011	9	827	5	196	198	14,992	4.4%	75,717
2012	6	912	4	184	200	15,720	4.9%	78,600
2013	10	279	9	42	201	15,957	1.5%	79,388
2014	7	637	4	192	204	16,402	2.8%	80,402
2015	8	757	6	497	206	16,662	1.6%	80,883
2016	10	1,355	6	300	210	17,717	6.3%	84,367

Beginning July 1, 2007, includes participants who have retired in place.
Annual benefits added to rolls include COLAs for continuing retirees.
The removed from rolls count does not include members who are replaced by beneficiaries.

APPENDIX A

ACTUARIAL ASSUMPTIONS AND METHODS

DRAFT

Summary of Actuarial Methods and Assumptions

The following presents a summary of the actuarial assumptions and methods used in the valuation of the Retirement System for Judges and Solicitors of South Carolina.

Investment Rate of Return

Assumed annual rate of 7.50% net of investment expenses composed of a 2.25% inflation component and a 5.25% real rate of return, net of investment expenses.

This is a prescribed assumption by in Section 9-16-335 of the South Carolina State Code.

Rates of Annual Salary Increase

Rates of salary are assumed to increase at an annual rate of 2.75%.

Active Member Decrement Rates

a. Assumed rates of service retirement are shown in the following table. In addition to the rates in the table below, all participants are assumed to retire upon reaching the mandatory retirement age of 72.

Service Based Retirement Rates		
Years of Service	**Male**	**Female**
15-19	10.00%	10.00%
20-24	40.00%	40.00%
25-31	15.00%	15.00%
32+	100.00%	100.00%

*Reitrement rate wil be 100% at 31 years of service for solicitors.

DRAFT

b. An abbreviated table with the assumed rates of disability incidence and pre-retirement mortality is shown below. The pre-retirement mortality assumption is based upon the RP-2014 Mortality Table for Employees with applicable multipliers to better reflect anticipated experience and provide margin for future improvement in mortality.

	Disability Incidence Rates		Pre-Retirement Mortality	
Age	**Males**	**Females**	**Males**	**Females**
25	0.0419%	0.0458%	0.0460%	0.0147%
30	0.0629%	0.0616%	0.0429%	0.0185%
35	0.0838%	0.0616%	0.0497%	0.0243%
40	0.1572%	0.1074%	0.0597%	0.0337%
45	0.2620%	0.2200%	0.0924%	0.0558%
50	0.4192%	0.3520%	0.1602%	0.0937%
55	0.6812%	0.5720%	0.2649%	0.1422%
60	1.0480%	0.8800%	0.4454%	0.2076%
Multiplier	105%	88%	95%	85%

Note: The multiplier has been applied to the decrement in the illustrative table.

c. There is no active employment withdrawal assumption.

Post Retirement Mortality

a. Healthy retirees and beneficiaries – The 2016 Public Retirees of South Carolina Mortality Table for Males and the 2016 Public Retirees of South Carolina Mortality Table for Females, both projected used the AA projection table from the year 2016 with multipliers based on plan experience. The following are sample rates:

Healthy Annuitant Mortality Rates Before Projection		
Age	**Males**	**Females**
50	0.1875%	0.1284%
55	0.2949%	0.2177%
60	0.5394%	0.3765%
65	0.9382%	0.5230%
70	1.4461%	0.8511%
75	2.5019%	1.6363%
80	4.6454%	3.2910%
85	8.4266%	6.2277%
90	14.6319%	10.9026%
Multiplier	92%	98%

Note: The multiplier has been applied to the decrement in the illustrative table.

DRAFT

The following table provides the life expectancy for individuals retiring in future years based on the assumption with full generational projection:

Life Expectancy for an Age 65 Retiree in Years				
	Year of Retirement			
Gender	**2020**	**2025**	**2030**	**2035**
Male	21.2	21.5	21.9	22.2
Female	23.6	23.8	24.0	24.1

b. A separate table of mortality rates is used for disabled retirees based on the RP-2014 Disabled Mortality table projected using the AA projection table from the year 2016 and with multipliers based on plan experience. The following are sample rates:

Disabled Annuitant Mortality Rates		
Age	**Males**	**Females**
50	2.5494%	1.4884%
55	2.9211%	1.8099%
60	3.3255%	2.1249%
65	3.9606%	2.6075%
70	5.0433%	3.5254%
75	6.7859%	5.1306%
80	9.5770%	7.6295%
85	14.1629%	11.3025%
90	21.6256%	16.5815%
Multiplier	125%	125%

Note: The multiplier has been applied to the decrement in the illustrative table.

Asset Valuation Method

The actuarial value of assets is equal to the market value, adjusted for the five-year phase in of the actual investment return in excess of (or less than) the expected investment return on a market value of asset basis. This five-year phase in begins with the investment experience for the fiscal year ending June 30, 2016. The actual return is calculated net of investment expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's market value of assets, adjusted for contributions, benefits paid, and refunds.

Actuarial Cost Method

The Entry Age Normal actuarial cost method allocates the System's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level percent of payroll necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions

DRAFT

with the remainder funded by employer contributions.

An unfunded accrued liability exists in the amount equal to the excess of accrued liability over valuation assets. The amortization period of the System is the number of years required to fully amortize the unfunded accrued liability, on an actuarial value of asset basis, with the expected amount of employer contributions in excess of the employers' portion of the normal cost.

The calculation of the amortization period takes into account scheduled increases to contribution rates applicable to future years and payroll growth. Also, the calculation of the amortization period reflects additional contributions the System receives with respect to members in DROP and who are retired-in-place. These contributions are assumed to grow at the same payroll growth rate as for active employees. It is assumed that amortization payments are made monthly at the end of the month.

Note, the principle financial measurement calculations in this actuarial valuation, which include the unfunded actuarial accrued liability, funded ratio, contributions rates, and funding period, are based on an actuarial value of assets (smoothed value) basis. The actuarial value of assets is a calculated asset value which may be greater than or less than the market value of assets and is used to dampen some of the volatility in the market value of assets. As a result, many of these measures would be different if they were determined on a market value of asset basis.

Future Cost-of-living Increases

Future benefits are assumed to increase at an annual rate of 2.75%.

Payroll Growth Rate

The total annual payroll of active members (including DROP and RIP participants) is assumed to increase at an annual rate of 2.75%. This rate represents the underlying expected annual rate of wage inflation and does not anticipate increases in the number of members.

Other Assumptions

1. The normal cost rate is increased by 0.12% to account for administrative expenses that are paid with plan assets.
2. Percent married: 95% of male and female employees are assumed to be married.
2. Age difference: Males are assumed to be four years older than their spouses.
3. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an immediate life annuity.
4. Inactive Population: All non-vested members are assumed to take an immediate refund. Members with a vested benefit are assumed to elect a deferred benefit commencing at their earliest possible commencement age.
5. There will be no recoveries once disabled.

6. Decrement timing: Decrements of all types are assumed to occur mid-year.
7. 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.
8. Benefit Service: All active and members are assumed to accrue one year of eligibility service each year.

Participant Data

Participant data was securely supplied in electronic text files. There were separate files for (i) active and inactive members, and (ii) members and beneficiaries receiving benefits.

The data for active members included birth date, gender, service with the current city and total vesting service, salary, and employee contribution account balances. For retired members and beneficiaries, the data included date of birth, gender, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and form of payment code.

Salary supplied for the current year was based on the annualized earnings for the year preceding the valuation date. Assumptions were made to correct for missing or inconsistent data. These had no material impact on the results presented.

DRAFT

APPENDIX B

BENEFIT PROVISIONS

DRAFT

SUMMARY OF BENEFIT PROVISIONS FOR RETIREMENT SYSTEM FOR JUDGES AND SOLICITORS FOR THE STATE OF SOUTH CAROLINA RETIREMENT SYSTEM (JSRS)

Effective Date: July 1, 1979.

Administration: The South Carolina Public Employee Benefit Authority, is responsible for the general administrative operations and day to day management of the Plan.

Type of Plan: This is a qualified governmental defined benefit retirement plan and considered to be a single employer plan under GASB No. 67.

Eligibility: This System covers all solicitors, circuit public defenders, judges of a Circuit or Family Court, Administrative Law Judges who elect to participate in the System, and justices of the Court of Appeals and Supreme Court who take office prior to age 72 are required to participate upon taking office unless exempted by statute.

Employee Contributions: Members contribute 10.00% of compensation per year. Contributions are credited with interest at the rate of 4.0% per annum.

Service Retirement:

a. Eligibility: There is a mandatory retirement age of 72. Members may retire if they have met one of the following eligibility conditions:
   i. Age 65 with 20 years of credited service.
   ii. Age 70 with 15 years of credited service.
   iii. Completed 25 years of credited service as a judge or 24 years as a solicitor or public defender.

b. Monthly Benefit: The monthly benefit is equal to one-twelfth ($1/12^{th}$) of the member's current salary, times 71.3% plus 2.67% of pay for each year of credited service beyond 25 for judges and 24 for solicitors and public defenders. The monthly benefit may not exceed one-twelfth of 90% of the member's current salary.

c. Payment Form: Standard Annuity Payment.

A JSRS member whose annuity as calculated at retirement exceeds the 90 percent maximum annuity will receive an additional lump-sum benefit at retirement. The additional benefit is equal to the member's contributions and interest paid in to the system after the member attained sufficient service credit to be eligible to receive the maximum annuity of 90 percent of the current active salary. The 90 percent maximum annuity amount is generally reached when the following JSRS service credit is obtained: 32 years for justices and judges; and 31 years for solicitors and circuit public defenders.

Disability Retirement:

a. Eligibility: Member must have five or more years of earned service.

b. Monthly Benefit: The monthly disability benefit payable is determined the same as a service retirement benefit and payable immediately.

c. Payment Form: Standard Annuity Payment.

d. Death while Disabled: A disabled member is treated as a retired member for purposes of determining a death benefit.

***Vesting and Refunds*:**

a. Eligibility: Judges are vested in the system after attaining ten (10) years of earned service. Solicitors and public defenders are vested in the system after attaining eight (8) years of earned service. Vested members may also elect to receive a refund in lieu of the deferred termination benefit described below.

b. Amount: The refund benefit is the accumulated value of the member's contributions plus interest credited by the fund. Members do not earn interest on their employee contribution account balance while they are inactive.

***Deferred Termination Benefit*:**

a. Eligibility: Member must be vested and must elect to leave his/her contributions on deposit. Members who began service before July 1, 2004 are eligible for a monthly benefit beginning at age 55. Members hired after July 1, 2004 are eligible to commence their deferred monthly benefit at age 65.

b. Monthly Benefit: The member's benefit is determined by multiplying the base benefit by a fraction, in which the numerator is the member's total credited service and twenty-four is the denominator.

c. Payment Form: Standard Annuity Payment.

d. Death Benefit: The beneficiary of an inactive member who dies is entitled to receive the amount of the member's accumulated contributions (with interest). A beneficiary of an inactive member who was eligible to commence his retirement annuity at the time of his death may elect a monthly survivor annuity equal to one-third the annuity that would have been payable to the deceased member.

***Death while an Active Member*:**

a. In General: A refund of the member's accumulated contributions (with interest) is paid to the beneficiary of a deceased member.

b. Beneficiary Annuity: If the deceased member was married and eligible to commence his retirement annuity at the time of his death, then his beneficiary may elect a monthly survivor annuity equal to one-third the annuity that would have been payable to the deceased member.

Standard Annuity Payment: The monthly retirement benefit will be paid as follows. Other, reduced optional forms of payment are also available to a member to elect at retirement.

a. Unmarried Retiree: A life annuity. Upon the member's death, any remaining member contributions plus interest will be paid to the member's designated beneficiary.

b. Married Retiree (One-third Joint & Survivor): An unreduced annuity is payable during the member's life, and continues after the member's death at one-third of the rate paid to the member for the life of the surviving spouse, unless a contingent non-spousal beneficiary is named.

c. Optional Allowance: A reduced lifetime annuity is payable during the member's life, and continues after the member's death at one-third of the rate paid to the member for the life of the non-spousal beneficiary (or in equal shares to multiple beneficiaries).

Incidental Death Benefit:

a. Active Employees: The beneficiary (or estate) of an active employee who completes at least one full year of membership service, will receive a death benefit equal to the member's annual earnable compensation at the time of death.

   The one full year membership requirement is waived for members whose death is a result of an injury arising out of and in the course of performing his duties.

b. Post Employment: The beneficiary (or estate) of a retiree, both current and future, will receive a one-time payment upon the retiree's death. The amount of the one-time payment is based on the retiree's credited service.

Years of Service Credit	Death Benefit
10 or more, but less than 20	$1,000
20 or more, but less than 30	$2,000
30 or more	$3,000

Retire in Place: Members who have accrued their maximum monthly benefit (i.e. 90% of salary) may elect to "retire in place". These members will receive their monthly retirement benefit while they remain employed. Members who retire in place under the age of 60 will have his retirement benefit accumulated into a deferred retirement option program (DROP). These members will receive a distribution of their DROP balance upon reaching the age of 60 or retirement (if earlier).

Postretirement Benefit Increases: Benefits paid to retired members or surviving spouses are increased annually by an amount equal to the percentage increase in the current salary paid to the respective position from which the member retired. The cost of living adjustment for non-spousal beneficiaries is based on the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W), and said beneficiaries will receive a 4.00% increase in their benefit in years in which the annual increase in CPI-W exceeds 3.00%.

DRAFT

APPENDIX C

GLOSSARY

DRAFT

GLOSSARY

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or ***Funding Method:*** A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ADC.

Actuarial Gain or ***Actuarial Loss:*** A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the Fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)

DRAFT

b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and

c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial valuation for a governmental retirement system typically also includes calculations that provide the financial information of the plan, such as the funded ratio, unfunded actuarial accrued liability and the ADC.

Actuarial Value of Assets or ***Valuation Assets:*** The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: That portion of the pension plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

DRAFT

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan that is not a Defined Contribution Plan. Typically a Defined Benefit Plan is one in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the Actuarial Value of Assets (AVA) to the Actuarial Accrued Liability (AAL). Plans sometimes calculate a market Funded Ratio, using the Market Value of Assets (MVA), rather than the AVA, although GASB 25 reporting requires the use of the AVA.

Funding Period or ***Amortization Period:*** The term "Funding Period" is used two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ADC. This funding period is chosen by the Board of Trustees. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 67 and ***GASB 68***: Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting and reporting rules for public retirement systems and the employers that sponsor, participate in, or contribute to them. Statement No. 67 sets the accounting rules for the financial reporting of the retirement systems, while Statement No. 68 sets the rules for the employers that sponsor, participate in, or contribute to public retirement systems.

DRAFT

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but may not decrease by exactly one year in the subsequent year's actuarial valuation. In some instances, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In other instances, such as the case with the South Carolina Retirement System (SCRS), Police Officers Retirement System (PORS), and the Retirement System for Judges and Solicitors (JSRS) the amortization period denotes the expected number of years until the plan attains a 100% funded ratio (on an actuarial value of asset basis), based on the contribution rate that is in effect. In this instance, the amortization period may "float" from year to year, meaning it could increase, decrease, or remain relatively unchanged from the amortization period in the prior year's valuation.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

DRAFT

GRS Gabriel Roeder Smith & Company
Consultants & Actuaries

DRAFT

SOUTH CAROLINA NATIONAL GUARD SUPPLEMENTAL RETIREMENT PLAN (SCNG)

ACTUARIAL VALUATION REPORT

AS OF JULY 1, 2016

GRS
Gabriel Roeder Smith & Company
Consultants & Actuaries
5605 N. MacArthur Blvd.
Suite 870
Irving, TX 75038-2631
469.524.0000 phone
469.524.0003 fax
www.gabrielroeder.com

November 28, 2016

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

Subject: Actuarial Valuation as of July 1, 2016

Dear Members of the Board:

This report describes the current actuarial condition of the South Carolina National Guard Supplemental Retirement Plan (SCNG), determines the calculated employer contribution requirement, and analyzes changes in the System's financial condition. In addition, the report provides various summaries of the data. A separate report is issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements 67 and 68. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of July 1, the first day of the plan year for SCNG. This report was prepared at the request of the Board of Directors of the South Carolina Public Employee Benefit Authority (Board) and is intended for use by the Public Employee Benefit Authority (PEBA) staff and those designated or approved by the Board.

Under South Carolina State statutes, the Board must certify the employer contribution annually. This amount is determined actuarially, based on the Board's funding policy. The contribution is determined by a given actuarial valuation and becomes effective twelve months after the valuation date. In other words, the contribution amount determined by this July 1, 2016 actuarial valuation will be used by the Board when certifying the employer contribution amount for the year beginning July 1, 2017. If new legislation is enacted between the valuation date and the date the contribution becomes effective, the Board may adjust the calculated amount before certifying them, in order to reflect this new legislation. Such adjustments are based on information supplied by the actuary.

FINANCING OBJECTIVES AND FUNDING POLICY

The principle objectives in the funding policy that is maintained by the Board include:

- Establish a contribution amount that remains relatively level over time.
- To set an amount so that the measures of the System's funding progress which include the unfunded actuarial accrued liability, funded ratio, and funding period will be maintained or improved.

DRAFT

- To set a contribution amount that will result in the unfunded actuarial accrued liability (UAAL) to be amortized over a period from the current valuation date that does not exceed 30 years (as of the valuation date there are 20-years remaining in the funding period of the experience gains and losses).

The contribution amounts are based on the Board's current funding policy, which is expected to completely amortize the unfunded actuarial accrued liability by June 30, 2036.

PROGRESS TOWARD REALIZATION OF FINANCING OBJECTIVES

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan's funded status. In the absence of benefit improvements, it should increase over time, until it reaches at least 100%.

The funded ratio of the System increased from 41.4% to 41.5%. If market value of assets had been used in the calculation instead of actuarial (smoothed) value of assets, the funded ratio for the System would have been 36.2%, compared to 37.3% in the prior year. The decrease in the funded ratio on a market value basis is primarily due to the use of updated actuarial assumptions and unfavorable investment experience during the last fiscal year. Specifically, the market value of assets earned a -0.47% return determined using the method specified by GASB 67 and reported in the financial statement of the South Carolina Retirement Systems for the year ending June 30, 2016. The -0.6% return documented in this report was determined on a dollar-weighted basis and is net of expenses and assumed mid-year cash flows.

ASSUMPTIONS AND METHODS

South Carolina State Code requires that an experience analysis of the economic and demographic assumptions be performed at least every five years. An experience study was conducted for the five-year period ending June 30, 2015. The following is a summary of the assumptions that were adopted by the Board and used in preparing this actuarial valuation:

- Decrease the price inflation assumption from 2.75% to 2.25%.
- Slight decrease in the assumed rate of salary increases for individual members.
- Decrease the payroll growth assumption from 3.50% to 3.00%.
- Adopt new post-retirement mortality tables specific to South Carolina retiree experience. Mortality for retirees is assumed to improve based on generational projection Scale AA.
- Minor adjustments to the pre-retirement mortality assumption.
- Modify the rates of withdrawal, disability, and retirement.
- Modify the asset method such that each year's investment gain or loss (determined on a market value of asset basis) is recognized over a closed five-year period at the rate of 20% per year.

DRAFT

The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.50% investment return assumption.

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can, and almost certainly will, differ as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rate, and funding periods. The actuarial calculations are intended to provide information for rational decision making.

BENEFIT PROVISIONS

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2016. There have been no changes in plan provisions since the preceding actuarial valuation.

DATA

Member data for retired, active and inactive members was supplied as of July 1, 2016, by the PEBA staff. The staff also supplied asset information as of July 1, 2016. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable for use in preparing the actuarial valuation. GRS is not responsible for the accuracy or completeness of the information provided to us by PEBA.

CERTIFICATION

We certify that the information presented herein is accurate and fairly portrays the actuarial position of SCNG as of July 1, 2016.

All of our work conforms with generally accepted actuarial principles and practices and complies with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of South Carolina Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

DRAFT

The undersigned are independent actuaries and consultants. Mr. Newton and Mr. White are Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Both are experienced in performing valuations for large public retirement systems.

Sincerely,

Gabriel, Roeder, Smith & Co.

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

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

DRAFT

TABLE OF CONTENTS

DRAFT

SECTION A

EXECUTIVE SUMMARY

DRAFT

Executive Summary

(Dollar amounts expressed in thousands)

Valuation Date:	July 1, 2016	July 1, 2015
Membership		
• Number of		
- Active Members	12,253	12,165
- Retirees and Beneficiaries	4,709	4,647
- Inactive Members	1,969	2,052
- Total	18,931	18,864
Annual Required Contribution		
• Member	$0	$0
• Employer contribution[1]	$4,814	$4,509
Assets		
• Market value	$23,350	$23,202
• Actuarial value	26,751	25,727
• Return on market value	-0.6%	1.3%
• Return on actuarial value	2.9%	5.6%
• Ratio - actuarial value to market value	114.6%	110.9%
• External cash flow %	1.2%	1.5%
Actuarial Information		
• Normal cost	$763	$689
• Actuarial accrued liability (AAL)	64,445	62,141
• Unfunded actuarial accrued liability (UAAL)	37,694	36,414
• Funded ratio	41.5%	41.4%
• Amortization period (blended)	17	17
Reconciliation of UAAL		
• Beginning of Year UAAL	$36,414	$38,071
- Interest on UAAL	2,731	2,855
- Amortization payment	(4,194)	(4,193)
- Assumption/method changes	2,276	0
- Asset experience	1,197	631
- Other liability experience	(730)	(950)
- Legislative changes	0	0
• End of Year UAAL	$37,694	$36,414

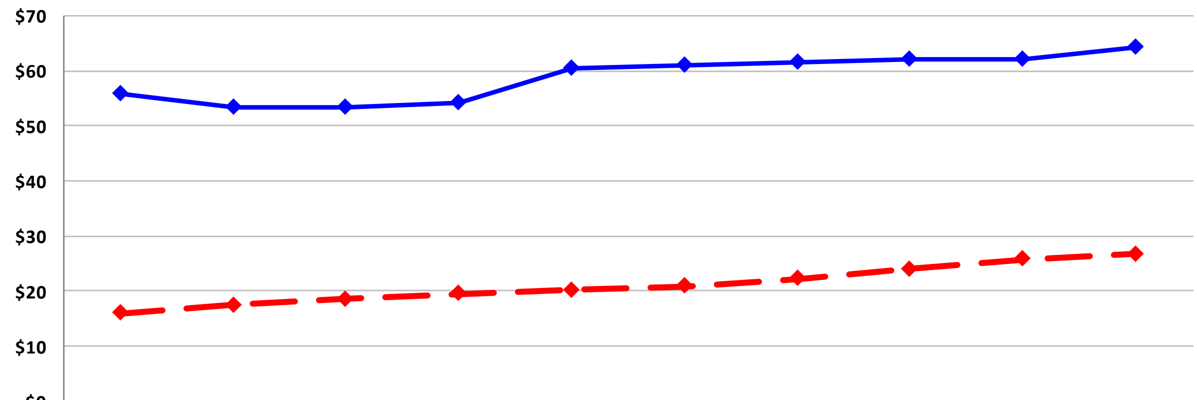
[1] The contribution amount determined by the actuarial valuation is effective for the following fiscal year.

DRAFT

Executive Summary (Continued)

The unfunded actuarial accrued liability increased by $1.3 million since the prior year's valuation to $37.7 million. Below is a chart with the historical actuarial value of assets and actuarial accrued liability for SCNG.

Chart 1. - History of Actuarial Assets vs. Actuarial Accrued Liability
(Dollars in Millions)



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
AAL	55.9	53.5	53.4	54.2	60.4	60.9	61.6	62.1	62.1	64.4
AVA	15.9	17.4	18.6	19.5	20.1	20.8	22.2	24.0	25.7	26.8

There is $3.4 million in deferred investment losses as of the valuation date. Absent favorable investment experience, those losses will be reflected in the actuarial value of assets over the next several years. However, due to the Board's funding policy to finance the unfunded actuarial accrued liability over a closed funding period, we expect the unfunded actuarial liability for the System and the funded ratio to steadily improve in future years.

The recommended employer contribution increased by $0.306 million dollars to $4.814 million for the fiscal year ending June 30, 2017. Absent legislative changes or significantly favorable investment experience, we expect the contribution requirement to gradually increase over the next four years as existing deferred investment losses become recognized in the actuarial value of assets.

SECTION B

DISCUSSION

DRAFT

Discussion

The results of the July 1, 2016 actuarial valuation of the South Carolina National Guard Supplemental Retirement Plan are presented in this report. The purposes of the valuation report is to depict the current financial condition of the System, determine the annual required contribution, and analyze changes in the System's financial condition. In addition, the report provides various summaries of the members participating in the plan.

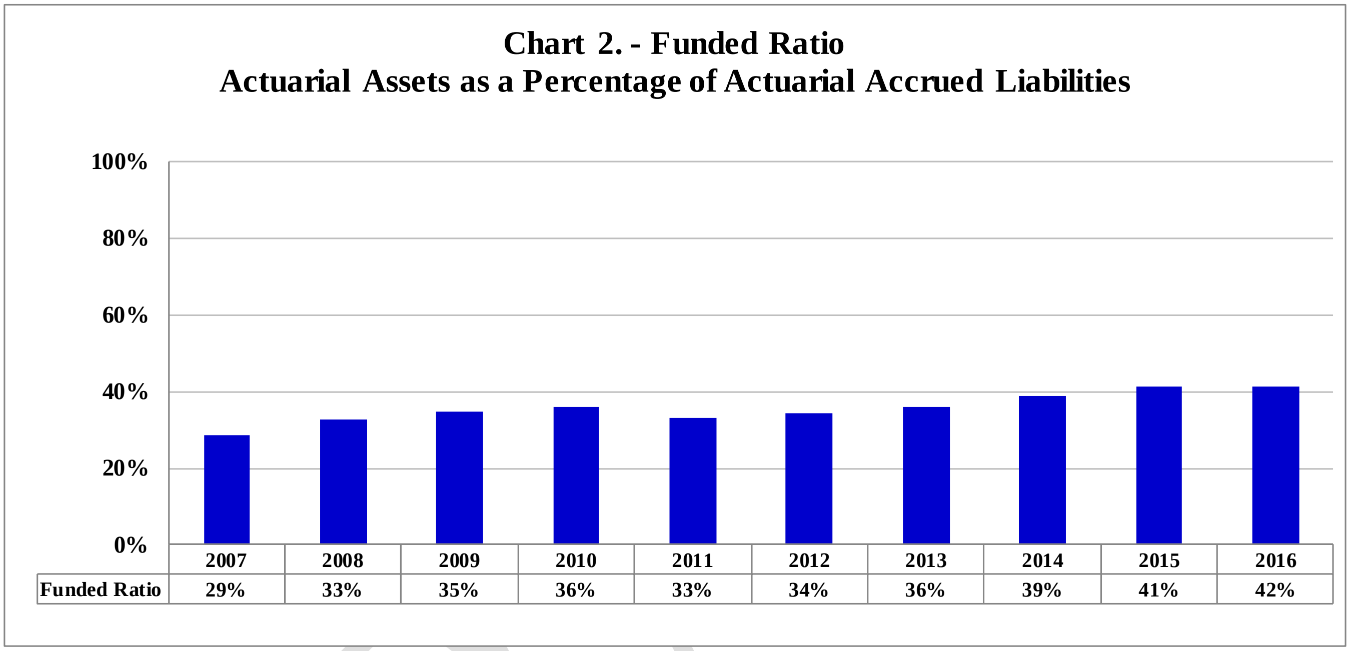
This section discusses the determination of the current funding requirements and the System's funded status, as well as changes in financial condition of the retirement system.

All of the actuarial and financial tables referenced by the other sections of this report appear in Section C. Section D provides member data and statistical information. Appendices A and B provide summaries of the principle actuarial assumptions and methods and plan provisions. Finally, Appendix C provides a glossary of technical terms that are used throughout this report.

DRAFT

Funding Progress

The funded ratio slightly increased from 41.4% to 41.5% since the prior valuation and has generally trended slightly upward over the last 10 years as shown in the graph below. Table 10, Schedule of Funding Progress, in the following section of the report provides additional detail regarding the funding progress of the Retirement System.



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Funded Ratio	29%	33%	35%	36%	33%	34%	36%	39%	41%	42%

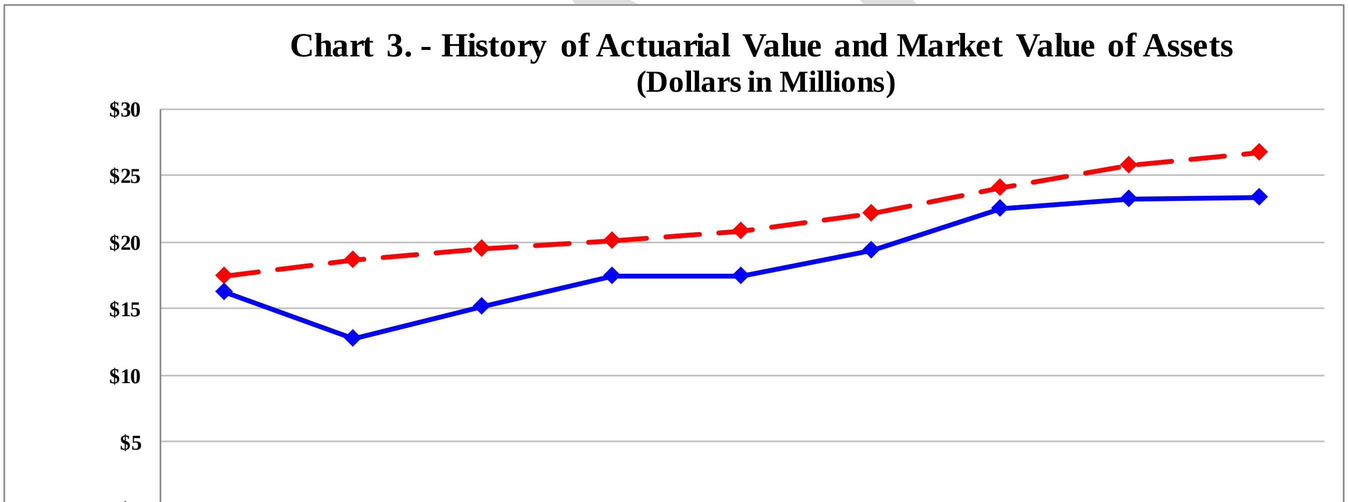
The contribution policy established by the Board is to fully amortize the unfunded actuarial accrued liability (UAAL) over a 30 year period from July 1, 2006. Under this funding policy, there are 20 years remaining in the funding period from the valuation date.

The State appropriation (i.e. employer contribution) is the dollar amount necessary to fund the annual normal cost and systematically amortize the UAAL. There is an amortization cost of $587,062 to amortize the outstanding balance of $2,375,193 that was established at July 1, 2006 due to a legislation change that allowed guardsmen who became members of the National Guard after June 30, 1993 to become eligible for membership in the System effective January 1, 2007. The remaining amortization period for this amount as of July 1, 2016 is five years. The UAAL from other sources of $35,328,217 is funded over a 30-year period beginning July 1, 2006. The remaining amortization period for this balance as of July 1, 2016 is 20 years. Therefore, the total State appropriation to be made for FY 2018 is $4,815,170.

Asset Gains/ (Losses)

The actuarial value of assets ("AVA") is based on a smoothed market value of assets, using a systematic approach to phase-in the difference between the actual and expected investment return on a market value of asset basis (adjusted for receipts and disbursements during the year). This is appropriate because it dampens the short-term volatility inherent in investment markets. The returns are computed net of investment expenses. The actuarial value of assets increased from $25.7 million to $26.8 million since the prior valuation. Table 8 in the following section of the report provides the development of the actuarial value of assets.

The rate of return on the mean market value of assets in 2016 was -0.5%, which is less than the 7.50% investment return assumption. Additionally, because of the offset and recognition of deferred investment losses that occurred in prior years, the actuarial (smoothed) asset value returned is 2.9%. This difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method. The market value of assets is less than the actuarial value of assets, which signifies that the retirement system is in a position of deferred losses.



	2007	2008	2009	2010	2011	2012	2013	2014	2015
AVA	$17.4	$18.6	$19.5	$20.1	$20.8	$22.2	$24.0	$25.7	$26.8
MVA	$16.2	$12.8	$15.1	$17.5	$17.4	$19.4	$22.6	$23.2	$23.4

Tables 6 and 7 in the following section of this report provide asset information that was included in the annual financial statements of the System. Also, Table 9 shows the estimated yield on a market value basis and on the actuarial asset valuation method.

Actuarial Gains/ (Losses) and the Contribution Requirement

The annual actuarial valuation is a snapshot analysis of the benefit liabilities, assets and funded position of the System as of the first day of the plan year. In any one fiscal year, the experience can be better or worse from that which is assumed or expected. The actuarial assumptions do not necessarily attempt to model what the experience will be for any one given fiscal year, but instead try to model the overall experience on average over many years. The demographic experience for the last year is briefly summarized in the chart below.

The unfunded actuarial accrued liability (UAAL) has increased from $36.414 million in 2015 to $37.694 million in 2016. The table below shows the source of the gains and losses and the impact of those gains and losses on the UAAL.

Reconciliation of UAAL
(Dollars in thousands)

•	Beginning of Year UAAL	$36,414
	- Interest on UAAL	2,731
	- Amortization payment	(4,194)
	- Assumption change	2,276
	- Asset experience	1,197
	- Liability experience	(730)
	- Legislative changes	0
	- Total change	$1,280
•	End of Year UAAL	$37,694

The plan experienced a net $0.73 million gain due to demographic experience. This net gain is approximately 1.1% of the total actuarial accrued liability.

DRAFT

The following table provides a reconciliation of the change in the recommended contribution from 2015 to 2016. The assumption change, followed by the recognition of investment losses that occurred in prior years had the largest impact on the change in the recommended contribution.

Change in Recommended Contribution

•	Prior year valuation	$4,509
	- Expected change	(7)
	- Assumption change	298
	- Asset experience	117
	- Liability experience	(103)
	- Legislative changes	0
	- Total change	$305
•	Current year valuation	$4,814

This funding method and contribution policy is designed to result in relatively level contribution requirements from year to year. However, the contribution requirements are expected to increase as the $3.4 million in differed investment losses become recognized in the actuarial value of assets.

DRAFT

Actuarial Assumptions and Methods

In determining costs and liabilities, actuaries use assumptions about the future, such as probabilities of retirement, termination, death and disability, and an annual investment return assumption. South Carolina State Code requires that an experience analysis of the economic and demographic assumptions be performed at least every five years. An experience study was conducted for the five-year period ending June 30, 2015. The following is a summary of the assumptions that were adopted by the Board and used in preparing this actuarial valuation:

- Decrease the price inflation assumption from 2.75% to 2.25%.
- Slight decrease in the assumed rate of salary increases for individual members.
- Decrease the payroll growth assumption from 3.50% to 3.00%.
- Adopt new post-retirement mortality tables specific to South Carolina retiree experience. Mortality for retirees is assumed to improve based on generational projection Scale AA.
- Minor adjustments to the pre-retirement mortality assumption.
- Modify the rates of withdrawal, disability, and retirement.
- Modify the asset method such that each year's investment gain or loss (determined on a market value of asset basis) is recognized over a closed five-year period at the rate of 20% per year.

The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.50% investment return assumption.

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System. Appendix A includes a summary of the actuarial assumptions and methods used in this valuation. The next experience study will be conducted no later than as of June 30, 2020.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. This report 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.

DRAFT

Benefit Provisions

Appendix B of this report includes a summary of the benefit provisions for SCNG. There have been no changes in the benefit provisions since the prior valuation.

Summary of Retirement Provisions

- All members of the South Carolina National Guard are covered by the Supplemental Retirement Plan.
- The retirement benefit amount is equal to $50 per month for 20 years' creditable service with an additional $5 per month for each additional year of service. The total pension is limited to $100 per month.
- Members with 20 years of military service are eligible for retirement after they have (i) attained age 60, or (ii) completed 30 years of creditable service. Eligible member may commence benefits at age 60.
- Member contributions are not required or permitted.

DRAFT

SECTION C

ACTUARIAL TABLES

DRAFT

ACTUARIAL TABLES

DRAFT

Summary of Cost Items

(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Normal Cost		
	a. Total normal cost	$ 763	$ 689
	b. Less: member contribution	0	0
	c. Employer normal cost	$ 763	$ 689
2.	Actuarial Accrued Liability for Active Members		
	a. Present value of future benefits	$ 25,559	$ 23,603
	b. Less: present value of future normal costs	6,830	6,135
	c. Actuarial accrued liability	$ 18,729	$ 17,468
3.	Total Actuarial Accrued Liability		
	a. Retirees and beneficiaries	$ 34,562	$ 33,521
	b. Inactive members	11,154	11,152
	c. Active members (Item 2.c.)	18,729	17,468
	d. Total	$ 64,445	$ 62,141
4.	Actuarial Value of Assets	$ 26,751	$ 25,727
5.	Unfunded Actuarial Accrued Liability (UAAL) (Item 3.d. - Item 4.)	$ 37,694	$ 36,414
6.	Annual Required Contribution		
	a. Normal cost	$ 763	$ 689
	b. Amortization of the UAAL	4,051	3,820
	c. Total contribution	$ 4,814	$ 4,509

DRAFT

Actuarial Present Value of Future Benefits

(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Active members		
	a. Service retirement	$ 3,653	$ 2,807
	b. Deferred termination benefits[1]	21,906	20,796
	c. Survivor benefits	0	0
	d. Disability benefits	0	0
	e. Total	$ 25,559	$ 23,603
2.	Retired and Inactive members		
	a. Members in payment status	$ 34,562	$ 33,521
	b. Inactive vested members	11,154	11,152
	c. Total	$ 45,716	$ 44,673
3.	Total actuarial present value of future benefits	$ 71,275	$ 68,276

[1] Attributable to members who terminate after attaining 20 years of service and prior to age 60, the age when retirement benefits commence.

DRAFT

Analysis of Normal Cost
(Dollar amounts expressed in thousands)

	July 1, 2016 (1)	July 1, 2015 (2)
1. Total normal cost		
a. Retirement benefits	$ 96	$ 76
b. Deferred termination benefits	652	613
c. Survivor benefits	0	0
d. Disability benefits	0	0
e. Total	748	689
2. Administrative expense	$ 15	N/A
3. Less: member contributions	$ 0	$ 0
4. Net employer normal cost	$ 763	$ 689

DRAFT

Results of July 1, 2016 Valuation
(Dollar amounts expressed in thousands)

		July 1, 2016 (1)
1.	Actuarial Present Value of Future Benefits	
	a. Present Retired Members and Beneficiaries	$ 34,562
	b. Present Active and Inactive Members	36,713
	c. Total Actuarial Present Value	$ 71,275
2.	Present Value of Future Normal Contributions	
	a. Employee	$ 0
	b. Employer	6,830
	c. Total Future Normal Contributions	$ 6,830
3.	Actuarial Liability	$ 64,445
4.	Current Actuarial Value of Assets	$ 26,741
5.	Unfunded Actuarial Liability	$ 37,704
6.	Unfunded Actuarial Liability Liquidation Period (blended)	17 years

DRAFT

Actuarial Balance Sheet

(Dollar amounts expressed in thousands)

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Assets		
	a. Current assets (actuarial value)	$ 26,751	$ 25,727
	b. Present value of future member contributions	0	0
	c. Present value of future employer contributions		
	i. Normal contributions	$ 6,830	$ 6,135
	ii. Accrued liability contributions	37,694	36,414
	iii. Total future employer contributions	$ 44,524	$ 42,549
	d. Total assets	$ 71,275	$ 68,276
2.	Liabilities		
	a. Benefits to be paid to retired members	$ 34,562	$ 33,521
	b. Benefits to be paid to former members entitled to deferred pensions	11,154	11,152
	c. Benefits to be paid to current active members	25,559	23,603
	d. Total liabilities	$ 71,275	$ 68,276

System Net Assets
Assets at Market or Fair Value
(Dollar amounts expressed in thousands)

Item		July 1, 2016		July 1, 2015
(1)		(2)		(3)
1. Cash and cash equivalents (operating cash)	$	5,259	$	4,115
2. Receivables		600		379
3. Investments				
a. Short-term securities	$	596	$	555
b. Fixed income (global)		4,404		5,788
c. Public equities (global)		5,424		5,176
d. Global tactical asset allocation		1,479		1,613
e. Alternative investments		6,769		6,506
f. Total investments	$	18,672	$	19,638
4. Securities lending cash collateral invested	$	42	$	51
5. Prepaid administrative expenses		3		2
6. Capital assets, net of accumulated depreciation		0		1
7. Total assets	$	24,576	$	24,186
8. Liabilities				
a. Due to other systems	$	0	$	0
b. Accounts payable		1,085		869
c. Investment fees payable		7		6
d. Obligations under securities lending		42		51
e. Deferred retirement benefits		0		0
f. Due to employee insurance program		0		0
g. Benefit payable		7		6
h. Other liabilities		85		52
i. Total liabilities	$	1,226	$	984
9. Total market value of assets available for benefits (Item 7. - Item 8.i.)	$	23,350	$	23,202
10. Asset allocation (investments)[1]				
a. Net Invested cash		22.6%		17.8%
b. Fixed income		18.9%		24.9%
c. Public equities		23.2%		22.3%
d. Global tactical asset allocation		6.3%		7.0%
e. Alternative investments		29.0%		28.0%
f. Total investments		100.0%		100.0%

[1] These asset allocations are calculated based on the dollar amounts shown in items 1. through 9. above and, due to cash flow and rebalancing timing, may be slightly different than the allocation percentages reported by the South Carolina Retirement System Investment Commission.

DRAFT

Reconciliation of System Net Assets
(Dollar amounts expressed in thousands)

		Year Ending	
		July 1, 2016	July 1, 2015
		(1)	(2)
1.	Value of assets at beginning of year	$ 23,202	$ 22,558
2.	Revenue for the year		
	a. Contributions		
	i. Member contributions	$ 0	$ 0
	ii. Employer contributions	4,591	4,591
	iii. Total	$ 4,591	$ 4,591
	b. Income		
	i. Interest, dividends, and other income	$ 296	$ 242
	ii. Investment expenses	(197)	(34)
	iii. Net	$ 99	$ 208
	c. Net realized and unrealized gains (losses)	(220)	105
	d. Total revenue	$ 4,470	$ 4,904
3.	Expenditures for the year		
	a. Disbursements		
	i. Refunds	$ 0	$ 0
	ii. Regular annuity benefits	4,310	4,249
	iii. Other benefit payments	0	0
	iv. Transfers to other Systems	0	0
	v. Total	$ 4,310	$ 4,249
	b. Administrative expenses and depreciation	12	11
	c. Total expenditures	$ 4,322	$ 4,260
4.	Increase in net assets (Item 2.d.- Item 3.c.)	$ 148	$ 644
5.	Value of assets at end of year (Item 1. + Item 4.)	$ 23,350	$ 23,202
6.	Net external cash flow		
	a. Dollar amount	$ 281	$ 342
	b. Percentage of market value	1.2%	1.5%

DRAFT

Development of Actuarial Value of Assets
(Dollar amounts expressed in thousands)

			Year Ending June 30, 2016
1.	Actuarial value of assets at beginning of year	$	25,727
2.	Market value of assets at beginning of year	$	23,202
3.	Net new investments		
	a. Contributions	$	4,591
	b. Disbursements[1]		(4,310)
	c. Subtotal		281
4.	Market value of assets at end of year	$	23,350
5.	Net earnings (Item 4. - Item 2. - Item 3.c.)	$	(133)
6.	Assumed investment return rate for fiscal year		7.50%
7.	Expected return	$	1,751
8.	Excess return (Item 5. - Item 7.)	$	(1,884)

9. Excess return on assets as of June 30, 2016:

	Fiscal Year Ending June 30, (1)		Excess Return (2)	Percent Deferred (3)		Deferred Amount (4)
a.	2016	$	(1,884)	80%	$	(1,507)
b.	2015		(3,156)	60%		(1,894)
c.	2014		N/A	40%		N/A
d.	2013		N/A	20%		N/A
e.	2012		N/A	0%		N/A
f.	Total				$	(3,401)

10.	Actuarial value of assets as of June 30, 2016 (Item 4. - Item 9.f.)	$	26,751
11.	Expected actuarial value as of June 30, 2016	$	27,948
12.	Asset gain (loss) for year (Item 10. - Item 11.)	$	(1,197)
13.	Asset gain (loss) as % of the actuarial value of assets		-4.5%
14.	Ratio of actuarial value to market value		114.6%

[1] For the year ending June 30, 2016, the investment return assumption was net of administration and investment expenses. Beginning July 1, 2016, the investment return assumption is only net of investment expenses.

DRAFT

Estimation of Yields
(Dollar amounts expressed in thousands)

	Year Ending	
	July 1, 2016	July 1, 2015
	(1)	(2)
1. Market value yield		
a. Beginning of year market assets	$ 23,202	$ 22,558
b. Contributions to fund during the year	4,591	4,591
c. Disbursements	(4,310)	(4,249)
d. Investment income (net of investment expenses)	(133)	302
e. End of year market assets	$ 23,350	$ 23,202
f. Estimated dollar weighted market value yield	-0.6%	1.3%
2. Actuarial value yield		
a. Beginning of year actuarial assets	$ 25,727	$ 24,029
b. Contributions to fund during the year	4,591	4,591
c. Disbursements	(4,310)	(4,249)
d. Investment income (net of investment and administrative expenses)	743	1,356
e. End of year actuarial assets	$ 26,751	$ 25,727
f. Estimated actuarial value yield	2.9%	5.6%

DRAFT

Schedule of Funding Progress

(Dollar amounts expressed in thousands)

July 1,	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2000*	11,089	43,427	32,338	25.5%	N/A	N/A
2002	12,608	44,678	32,069	28.2%	N/A	N/A
2004	13,567	47,281	33,714	28.7%	N/A	N/A
2005	12,151	46,985	34,835	25.9%	N/A	N/A
2006	14,046	48,755	34,709	28.8%	N/A	N/A
2007	15,937	55,917	39,980	28.5%	N/A	N/A
2008	17,426	53,534	36,108	32.6%	N/A	N/A
2009	18,600	53,421	34,821	34.8%	N/A	N/A
2010	19,458	54,153	34,695	35.9%	N/A	N/A
2011	20,138	60,388	40,250	33.3%	N/A	N/A
2012	20,814	60,942	40,128	34.2%	N/A	N/A
2013	22,208	61,576	39,368	36.1%	N/A	N/A
2014	24,029	62,100	38,071	38.7%	N/A	N/A
2015	25,727	62,141	36,414	41.4%	N/A	N/A
2016	26,751	64,445	37,694	41.5%	N/A	N/A

*As of April 30, 2000.

DRAFT

Summary of Principle Assumptions and Methods

Below is a summary of the principle economic assumptions, cost method, and the method for financing the unfunded actuarial accrued liability:

Valuation date	July 1, 2016
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar
Amortization period for recommended contribution	17-year closed period[1]
Asset valuation method	5-Year Smoothing
Actuarial assumptions:	
Investment rate of return[2]	7.50%
Projected salary increases	None
Inflation	2.25%
Cost-of-living adjustments	0.00%
Retiree mortality	The 2016 Public Retirees of South Carolina Mortality Table projected at Scale AA from the year 2016. Male rates are multiplied by 125% and female rates are multiplied by 111%.

[1] The blended amortization period as of the valuation date.

[2] This is a prescribed assumption in Section 9-16-335 of South Carolina State Code.

DRAFT

Solvency Test

(Dollar amounts expressed in thousands)

	Actuarial Accrued Liability				Portion of Aggregate Accrued Liabilities Covered by Assets		
July 1,	Active Member Contributions	Retirants & Beneficiaries	Active & Inactive Members (Employer Financed)	Valuation Assets	Active	Retirants	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2000	0	16,186	27,241	11,089	N/A	68.5%	0.0%
2002	0	17,597	27,081	12,608	N/A	71.6%	0.0%
2004	0	19,704	27,577	13,567	N/A	68.9%	0.0%
2005	0	20,804	26,181	12,151	N/A	58.4%	0.0%
2006	0	22,366	26,389	14,046	N/A	62.8%	0.0%
2007	0	24,627	31,290	15,937	N/A	64.7%	0.0%
2008	0	25,554	27,980	17,426	N/A	68.2%	0.0%
2009	0	27,558	25,863	18,600	N/A	67.5%	0.0%
2010	0	28,492	25,661	19,458	N/A	68.3%	0.0%
2011	0	32,038	28,350	20,138	N/A	62.9%	0.0%
2012	0	32,989	27,953	20,814	N/A	63.1%	0.0%
2013	0	33,590	27,986	22,208	N/A	66.1%	0.0%
2014	0	33,739	28,361	24,029	N/A	71.2%	0.0%
2015	0	33,521	28,620	25,727	N/A	76.7%	0.0%
2016	0	34,562	29,883	26,751	N/A	77.4%	0.0%

DRAFT

SECTION D

MEMBERSHIP DATA

DRAFT

MEMBERSHIP TABLES

DRAFT

Summary of Membership Data

		July 1, 2016 (1)	July 1, 2015 (2)
1.	Active members		
	a. Males	9,998	9,967
	b. Females	2,255	2,198
	c. Total members	12,253	12,165
	d. Average age	32.2	32.2
	e. Average service	9.7	9.7
2.	Vested inactive members		
	a. Number	1,969	2,052
	b. Total annual deferred benefits	$ 1,551,840	$ 1,611,900
	c. Average annual deferred benefit	$ 788	$ 786
3.	Service retirees		
	a. Number	4,709	4,647
	b. Total annual benefits	$ 4,296,660	$ 4,249,920
	c. Average annual benefit	$ 912	$ 915
	d. Average age	70.6	70.2

DRAFT

DRAFT

Summary of Historical Active Membership

July 1,	Number of Employers	Number of Members	Annual Payroll	Average Pay	Percentage Increase in Average Pay	Average Age	Average Service
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2000	1	5,289	N/A	N/A	N/A	N/A	N/A
2002	1	4,010	N/A	N/A	N/A	N/A	N/A
2004	1	3,425	N/A	N/A	N/A	N/A	N/A
2005	1	2,864	N/A	N/A	N/A	45	23
2006	1	2,502	N/A	N/A	N/A	45	23
2007	1	11,076	N/A	N/A	N/A	32	10
2008	1	12,559	N/A	N/A	N/A	31	8
2009	1	12,599	N/A	N/A	N/A	31.7	8.7
2010	1	12,445	N/A	N/A	N/A	31.9	9.0
2011	1	12,271	N/A	N/A	N/A	32.0	9.3
2012	1	12,041	N/A	N/A	N/A	31.8	9.2
2013	1	11,997	N/A	N/A	N/A	32.0	9.5
2014	1	12,221	N/A	N/A	N/A	32.1	9.7
2015	1	12,165	N/A	N/A	N/A	32.2	9.7
2016	1	12,253	N/A	N/A	N/A	32.2	9.7

Distribution of Active Members by Age and by Years of Service

Attained	Years of Credited Service												
Age	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	Total
Under 20	441	224	12	0	0	0	0	0	0	0	0	0	677
20-24	516	626	657	549	392	308	0	0	0	0	0	0	3,048
25-29	159	136	168	231	297	1,470	127	0	0	0	0	0	2,588
30-34	69	44	60	54	72	572	652	131	0	0	0	0	1,654
35-39	18	26	17	12	22	191	313	471	63	0	0	0	1,133
40-44	6	6	4	1	14	93	163	272	331	39	0	0	929
45-49	6	1	2	1	1	45	112	182	298	375	28	0	1,051
50-54	0	2	2	0	1	12	52	89	128	226	215	28	755
55-59	3	1	1	0	0	2	5	26	50	77	127	86	378
60-64	1	0	0	0	0	1	0	2	6	5	10	13	38
65 & Over	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	1,219	1,066	923	848	800	2,694	1,424	1,173	876	722	381	127	12,253

DRAFT

Distribution of Annuitants by Age as of July 1, 2016

Age	Number of Annuitants	Total Annual Benefits	Average Annual Benefits
(1)	(2)	(3)	(4)
Under 50	0	$ 0	N/A
50 - 54	0	0	N/A
55 - 59	0	0	N/A
60 - 64	978	$ 860	$ 879
65 - 69	1,676	1,504	897
70 - 74	980	884	902
75 - 79	540	508	941
80 & Over	535	540	1,009
Total	4,709	$ 4,296	$ 912

Dollar amounts, except averages, are expressed in thousands.

DRAFT

Schedule of Retirants Added to And Removed from Rolls

(Dollar amounts except average allowance expressed in thousands)

	Added to Rolls		Removed from Rolls		Rolls End of the Year		% Increase	Average
July 1,	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits	in Annual Benefit	Annual Benefit
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2000	N/A	N/A	N/A	N/A	1,962	1,947	7.7%	992
2002	N/A	N/A	N/A	N/A	2,213	2,160	10.9%	976
2004	N/A	N/A	N/A	N/A	2,535	2,439	12.9%	962
2005	244	$ 214	89	$ 81	2,690	2,572	5.5%	956
2006	303	276	90	91	2,903	2,757	7.2%	950
2007	362	329	61	58	3,204	3,028	9.8%	945
2008	364	331	76	75	3,492	3,284	8.5%	940
2009	378	335	85	83	3,785	3,536	7.7%	934
2010	267	237	101	99	3,951	3,674	3.9%	930
2011	399	351	98	93	4,252	3,932	7.0%	925
2012	259	228	92	87	4,419	4,073	3.6%	922
2013	244	211	122	116	4,541	4,168	2.3%	918
2014	195	165	108	103	4,628	4,230	1.5%	914
2015	155	142	136	122	4,647	4,250	0.5%	915
2016	195	172	133	125	4,709	4,297	1.1%	912

APPENDIX A

ACTUARIAL ASSUMPTIONS AND METHODS

DRAFT

Summary of Actuarial Assumptions and Methods

The following presents a summary of the actuarial assumptions and methods used in the valuation of the South Carolina National Guard Supplemental Retirement Plan.

Investment Rate of Return

Assumed annual rate of 7.50% net of investment expenses composed of a 2.25% inflation component and a 5.25% real rate of return, net of investment expenses. This is a prescribed assumption set by another party in Section 9-16-335 of the South Carolina State Code.

Rates of Annual Salary Increase

No increases in salary are assumed. The benefit is not related to pay.

Active Member Decrement Rates

a. Assumed rates of service retirement are shown in the following table. Members who retire prior to age 60 are assumed to defer retirement benefits until age 60.

Age and Service Based Retirement Rates			
Age	Years of Service		
	20 - 24	25 - 29	30+
Age < 60	2.5%	5.0%	100.0%
Age > 59	10.0%	100.0%	100.0%

b. An abbreviated table with the assumed rates of disability and mortality while employed is shown below. There is no active employment withdrawal assumption.

	Disability Rates		Pre-Retirement Mortality	
Age	Males	Females	Males	Females
25	0.1740%	0.1740%	0.0460%	0.0164%
30	0.2320%	0.2320%	0.0429%	0.0207%
35	0.4350%	0.4350%	0.0497%	0.0272%
40	0.5800%	0.5800%	0.0597%	0.0376%
45	0.8700%	0.8700%	0.0924%	0.0624%
50	1.0875%	1.0875%	0.1602%	0.1047%
55	0.0000%	0.0000%	0.2649%	0.1589%
60	0.0000%	0.0000%	0.4454%	0.2320%
Multiplier	145.0%	145.0%	95.0%	95.0%

Note: The multiplier has been applied to the decrement in the illustrative table.

DRAFT

Post Retirement Mortality

Retirees and beneficiaries – The 2016 Public Retirees of South Carolina Mortality Table for Males and the 2016 Public Retirees of South Carolina Mortality Table for Females projected using Scale AA projection table from the year 2016 and multipliers based on plan experience. The following are sample rates:

Annuitant Mortality Rates Before Projection		
Age	**Males**	**Females**
50	0.2548%	0.1454%
55	0.4006%	0.2465%
60	0.7329%	0.4265%
65	1.2748%	0.5924%
70	1.9648%	0.9640%
75	3.3994%	1.8534%
80	6.3116%	3.7276%
85	11.4493%	7.0538%
90	19.8803%	12.3489%
Multiplier	125%	111%

The following table provides the life expectancy for individuals retiring in future years based on the assumption with full generational projection:

Life Expectancy for an Age 65 Retiree in Years				
	Year of Retirement			
Gender	**2020**	**2025**	**2030**	**2035**
Male	18.9	19.3	19.7	20.0
Female	22.7	22.8	23.0	23.2

DRAFT

Asset Valuation Method

The actuarial value of assets is equal to the market value, adjusted for the five-year phase in of the actual investment return in excess of (or less than) the expected investment return on a market value of asset basis. This five-year phase in begins with the investment experience for the fiscal year ending June 30, 2016. The actual return is calculated net of investment expenses, and the expected investment return is equal to the assumed investment return rate multiplied by the prior year's market value of assets, adjusted for contributions, benefits paid, and refunds.

Actuarial Cost Method

The Entry Age Normal actuarial cost method allocates the System's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level dollar amount necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

An unfunded accrued liability exists in the amount equal to the excess of accrued liability over valuation assets. The amortization period of the System is the number of years required to fully amortize the unfunded accrued liability, on an actuarial value of asset basis, with the expected amount of employer contributions in excess of the employers' portion of the normal cost.

Note, the principle financial measurement calculations in this actuarial valuation, which include the unfunded actuarial accrued liability, funded ratio, contributions rates, and funding period, are based on an actuarial value of assets (smoothed value) basis. The actuarial value of assets is a calculated asset value which may be greater than or less than the market value of assets and is used to dampen some of the volatility in the market value of assets. As a result, many of these measures would be different if they were determined on a market value of asset basis.

DRAFT

Future Cost-of-Living Increases

No increases are assumed.

Payroll Growth Rate

None assumed.

Other Assumptions

1. The normal cost includes $15,000 for plan incurred administrative expenses.

2. There is not a marriage assumption.

2. Decrement timing: Decrements of all types are assumed to occur mid-year.

2. 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.

Participant Data

Participant data was securely supplied in electronic text files. There were separate files for (i) active, and (ii) members and beneficiaries receiving benefits.

The data for active members included birth date, gender, total military service and total South Carolina National Guard service. For retired members and beneficiaries, the data included date of birth, gender, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and form of payment code.

Assumptions were made to correct for missing or inconsistent data. These had no material impact on the results presented.

DRAFT

APPENDIX B

BENEFIT PROVISIONS

DRAFT

SUMMARY OF BENEFIT PROVISIONS FOR SOUTH CAROLINA NATIONAL GUARD SUPPLEMENTAL RETIREMENT PLAN (SCNG)

Effective Date: July 1, 1975

Administration: The South Carolina Public Employee Benefit Authority, is responsible for the general administrative operations and day to day management of the Plan.

Eligibility: All members of the South Carolina National Guard who became members on or before June 30, 1993 are covered by the System. Effective January 1, 2007, eligibility for membership has been extended to those guardsmen who became members of the South Carolina National Guard after June 30, 1993.

Employee Contributions: Contributions from members are not permitted.

Service Retirement:

a. Eligibility: Members who are honorably discharged after attaining age 60 with at least 20 years of creditable military service, which include at least 15 years, 10 of which immediately preceding retirement, with the National Guard of South Carolina.

b. Monthly Benefit: $50 per month for 20 years of creditable service with an additional $5 per month for each additional year of service, subject to a maximum monthly benefit of $100 per month.

c. Payment Form: Life annuity.

Disability Retirement: None

Deferred Termination Benefit:

a. Eligibility: Members who are honorably discharged prior to attaining age 60 with at least 20 years of creditable military service, which include at least 15 years, 10 of which immediately preceding retirement, with the National Guard of South Carolina.

b. Monthly Benefit: Upon attaining age 60, the member will receive $50 per month for 20 years of creditable service with an additional $5 per month for each additional year of service, subject to a maximum monthly benefit of $100 per month.

c. Payment Form: Life annuity.

Active Member Death Benefit: None.

Postretirement Benefit Increases: None.

DRAFT

APPENDIX C

GLOSSARY

DRAFT

GLOSSARY

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or ***Funding Method:*** A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ADC.

Actuarial Gain or ***Actuarial Loss:*** A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the Fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)

DRAFT

b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and

c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial valuation for a governmental retirement system typically also includes calculations that provide the financial information of the plan, such as the funded ratio, unfunded actuarial accrued liability and the ADC.

Actuarial Value of Assets or ***Valuation Assets:*** The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: That portion of the pension plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan that is not a Defined Contribution Plan. Typically a defined benefit plan is one in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA, although GASB 25 reporting requires the use of the AVA.

Funding Period or ***Amortization Period:*** The term "Funding Period" is used two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ADC. This funding period is chosen by the Board of Trustees. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 67 and ***GASB 68***: Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting and reporting rules for public retirement systems and the employers that sponsor, participate in, or contribute to them. Statement No. 67 sets the accounting rules for the financial reporting of the retirement systems, while Statement No. 68 sets the rules for the employers that sponsor, participate in, or contribute to public retirement systems.

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but may not decrease by exactly one year in the subsequent year's actuarial valuation. In some instances, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In other instances, such as the case with the South Carolina Retirement System (SCRS) and Police Officers Retirement System (PORS), the amortization period denotes the expected number of years until the plan attains a 100% funded ratio (on an actuarial value of asset basis), based on the contribution rate that is in effect. In this instance, the amortization period may "float" from year to year, meaning it could increase, decrease, or remain relatively unchanged from the amortization period in the prior year's valuation.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

DRAFT

PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
BOARD RETREAT

Meeting Date: November 30, 2016

---

1. Subject: RSIC Report on Investments

---

2. Summary: RSIC Report on Investments

Background Information: Mr. Geoff Berg, Chief Investment Officer, from RSIC will review a performance update for the period ending September 30, 2016.

3. What is the Board asked to do? Receive as information- no action required

---

4. Supporting Documents:

(a) List those attached:
1. RSIC Performance Update September 30, 2016

SC Retirement System Investment Commission

Performance Update

RSIC Internal Reporting

September 30, 2016

Agenda

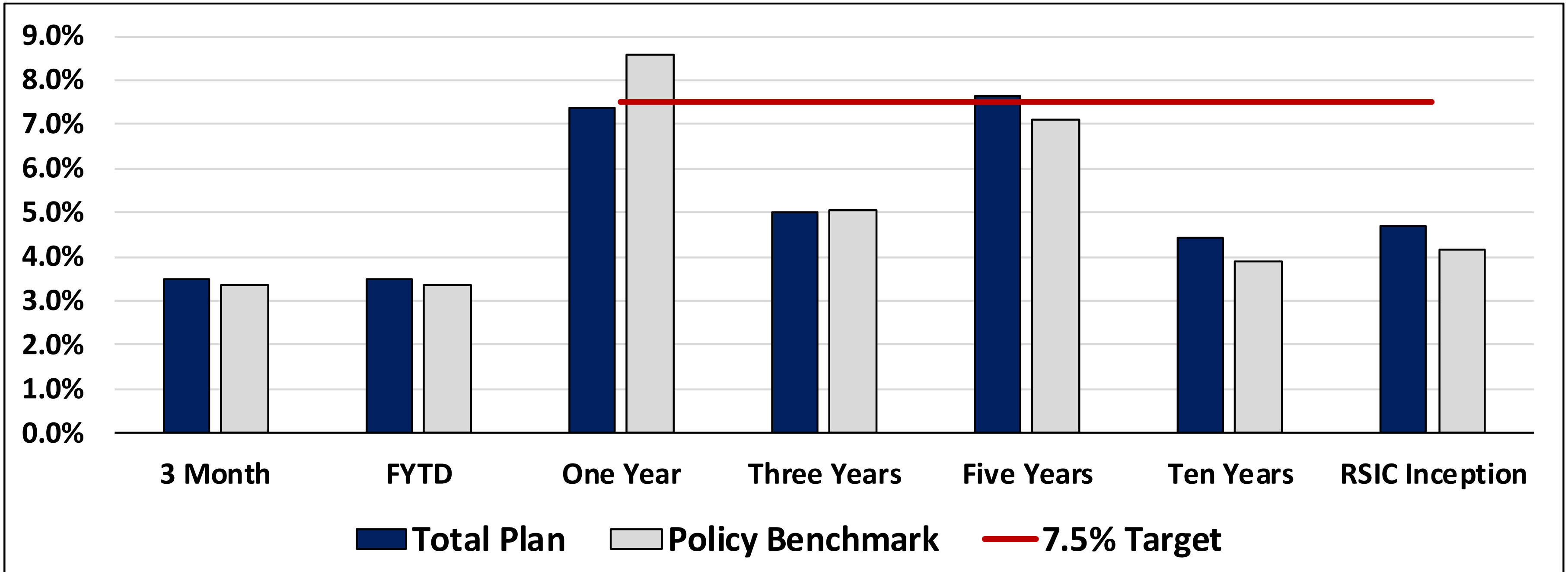
SC Retirement System Investment Commission

- Performance update
- Portfolio update
- Organizational update

Performance – Plan and Asset Classes[2]

SC Retirement System Investment Commission

As of September 30, 2016

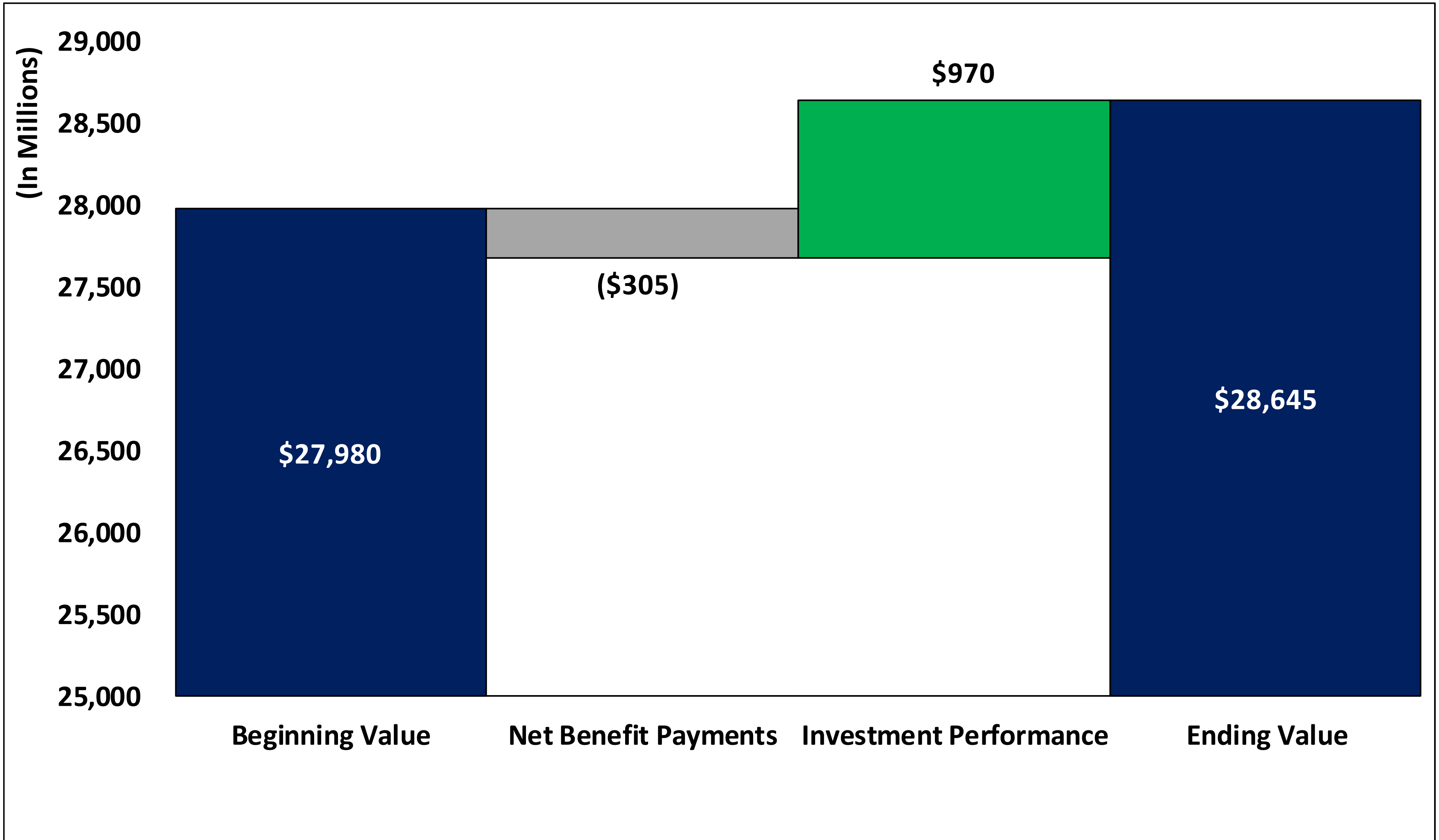


					Annualized			
Historic Plan Performance	Market Value (In Millions)	3 Month	FYTD	One Year	Three Years	Five Years	Ten Years	RSIC Inception
Total Plan	**$28,645**	**3.49%**	**3.49%**	**7.38%**	**5.00%**	**7.62%**	**4.43%**	**4.70%**
Policy Benchmark		3.33%	3.33%	8.57%	5.04%	7.11%	3.90%	4.16%
Excess Return		**0.16%**	**0.16%**	**-1.19%**	**-0.05%**	**0.51%**	**0.53%**	**0.53%**
Net Benefit Payments (In Millions)		($305)	($305)	($1,041)	($3,186)	($5,211)	($9,381)	($10,421)

The Footnotes and Disclosures page is an integral part of this report.

Fiscal YTD Benefits & Performance[2]

FYTD as of September 30, 2016

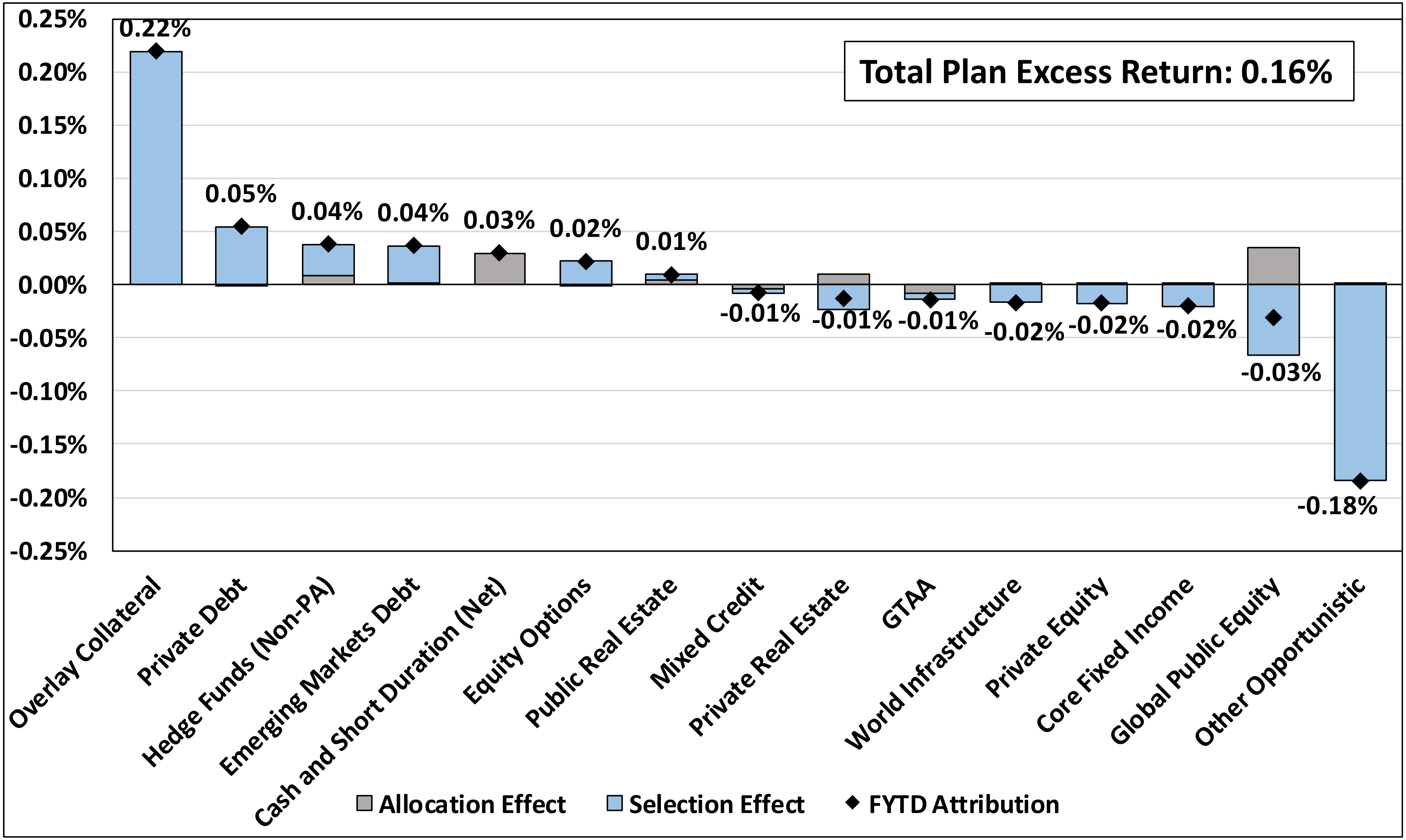


The Footnotes and Disclosures page is an integral part of this report.

Attribution of Excess Returns[1,3,4,7,10]

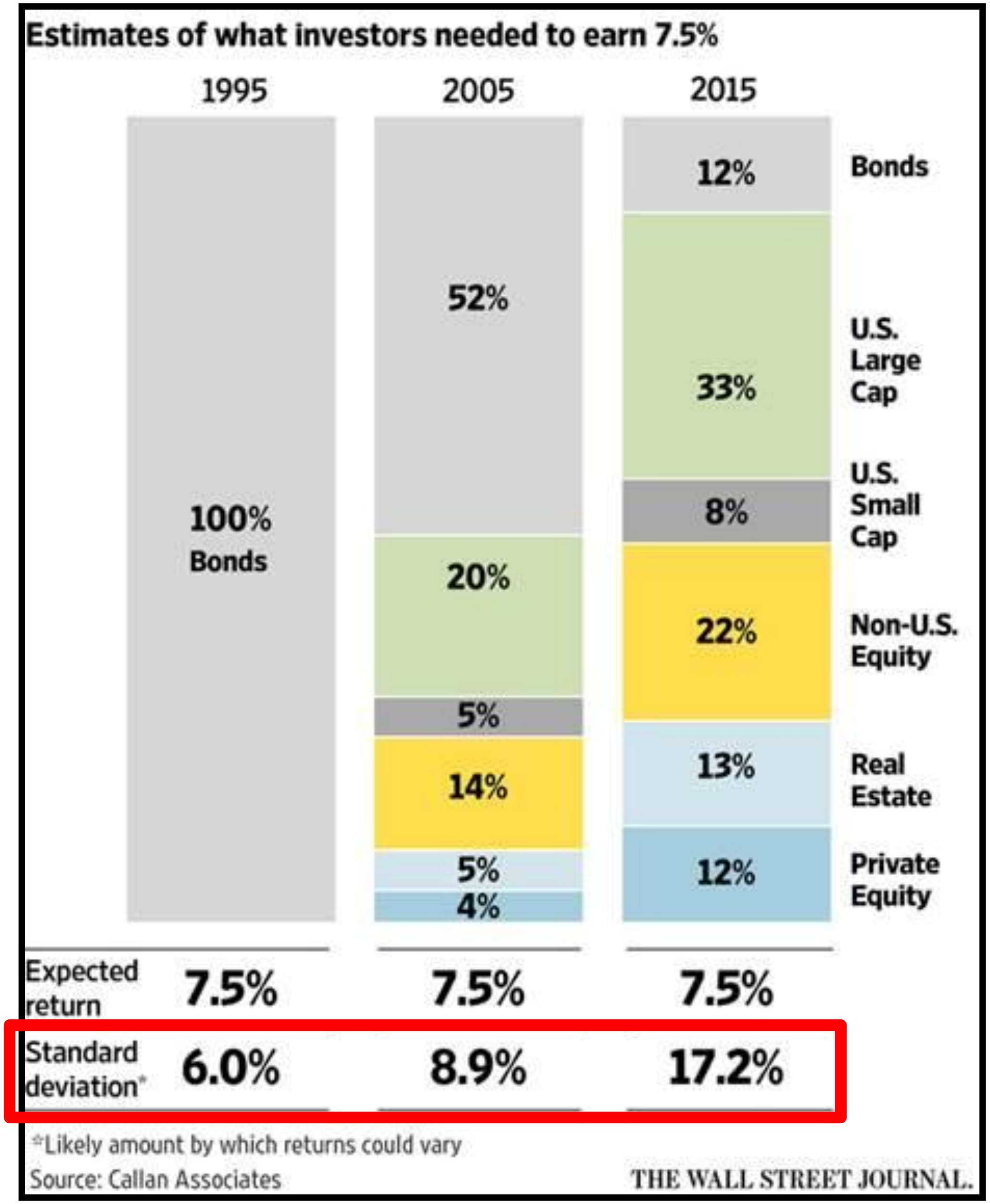
SC Retirement System Investment Commission

FYTD as of September 30, 2016



The Footnotes and Disclosures page is an integral part of this report.

Challenges Of A Lower Return Environment



Election Impact

- US Dollar rallied more than 4%
  - Can become a challenge to US exporters' profitability
  - Hurts value of non-US assets
- Equities are mixed
  - US equities are up 3%
  - Non-US developed equities are down 1.5%*
  - Emerging market equities are down 4%
- Significant rally in US bond yields since July
  - Intensified after election
  - UST 10-year yielded 1.36% on July 8
  - Currently at 2.33% (down more than 8% in value)

Portfolio Update – Important Changes

RSIC
SC Retirement System Investment Commission

- A year of change…
  - Tracking performance vs. our peer group
  - New liquidity framework (cash target declined from 5% to 2%)
  - New asset allocation adopted in February (effective 7/1)
    - Additional equity exposure (long-term perspective)
    - Elimination of static targets to expensive asset classes
      - Allows additional work on potential investments in order to develop greater understanding of the sources of value creation
      - Results: fewer, more meaningful relationships, improved cost of implementation
  - Challenging Hedge Funds' role in the portfolio
    - Benchmarking against "traditional" asset classes raises the bar
    - Currently evaluating substitute strategies that can take out significant cost

Other Updates

- Conducting search for general investment consultant
  - Greater focus on asset allocation matters
  - RFP responses due December 1
  - Decision expected prior to end of fiscal year

- Also conducting search for specialty consultant
  - Focused on private markets implementation
  - RFP responses due February 1
  - Decision expected mid-2017

PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
BOARD RETREAT

Meeting Date: November 30, 2016

---

1. Subject: Rally Update

---

2. Summary: Rally Update

Background Information: Ms. Sarah Martin from BCBSSC will lead a discussion related to Rally.

3. What is the Board asked to do? Receive as information

---

4. Supporting Documents:

(a) List those attached:
 1. Rally

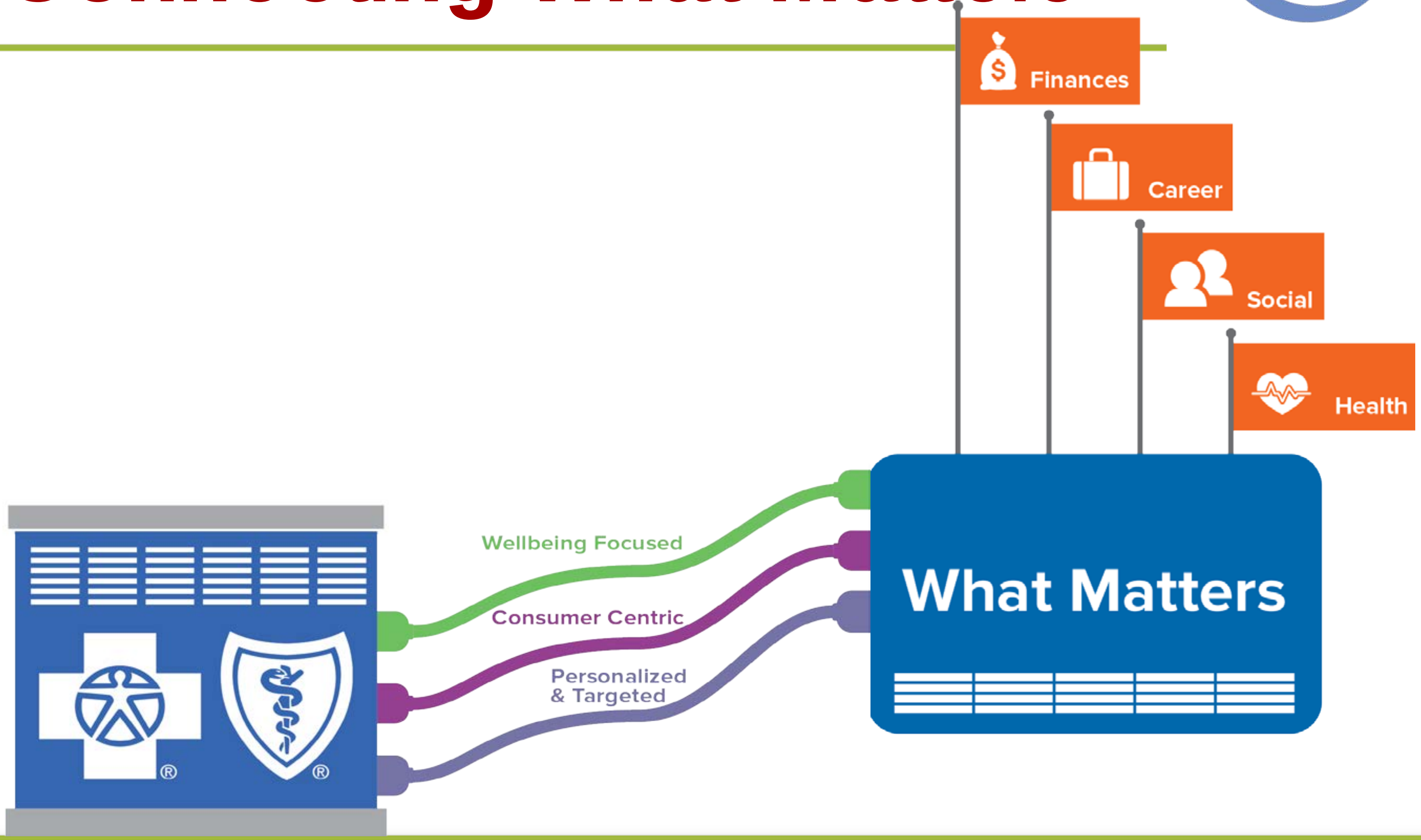
south carolina peba state health plan | retirement systems

Serving those who serve South Carolina

Rally Engagement Platform
PEBA Board

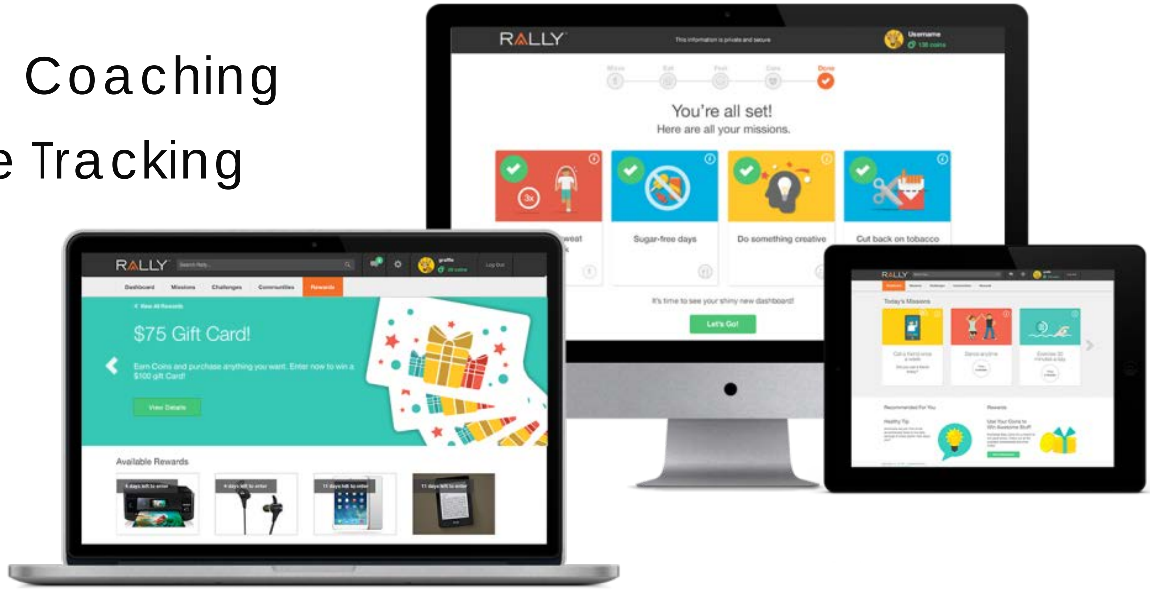
November 30, 2016

Connecting What Matters

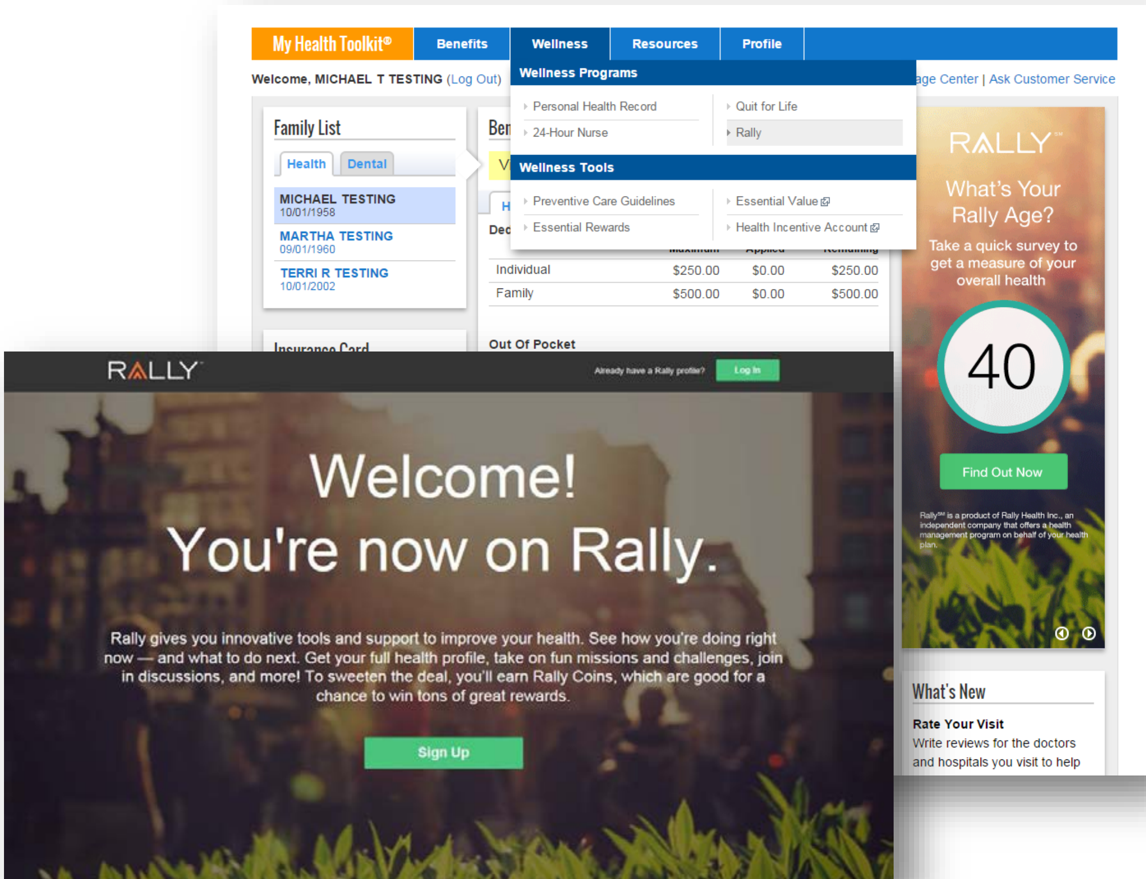


Get Engaged With Rally!

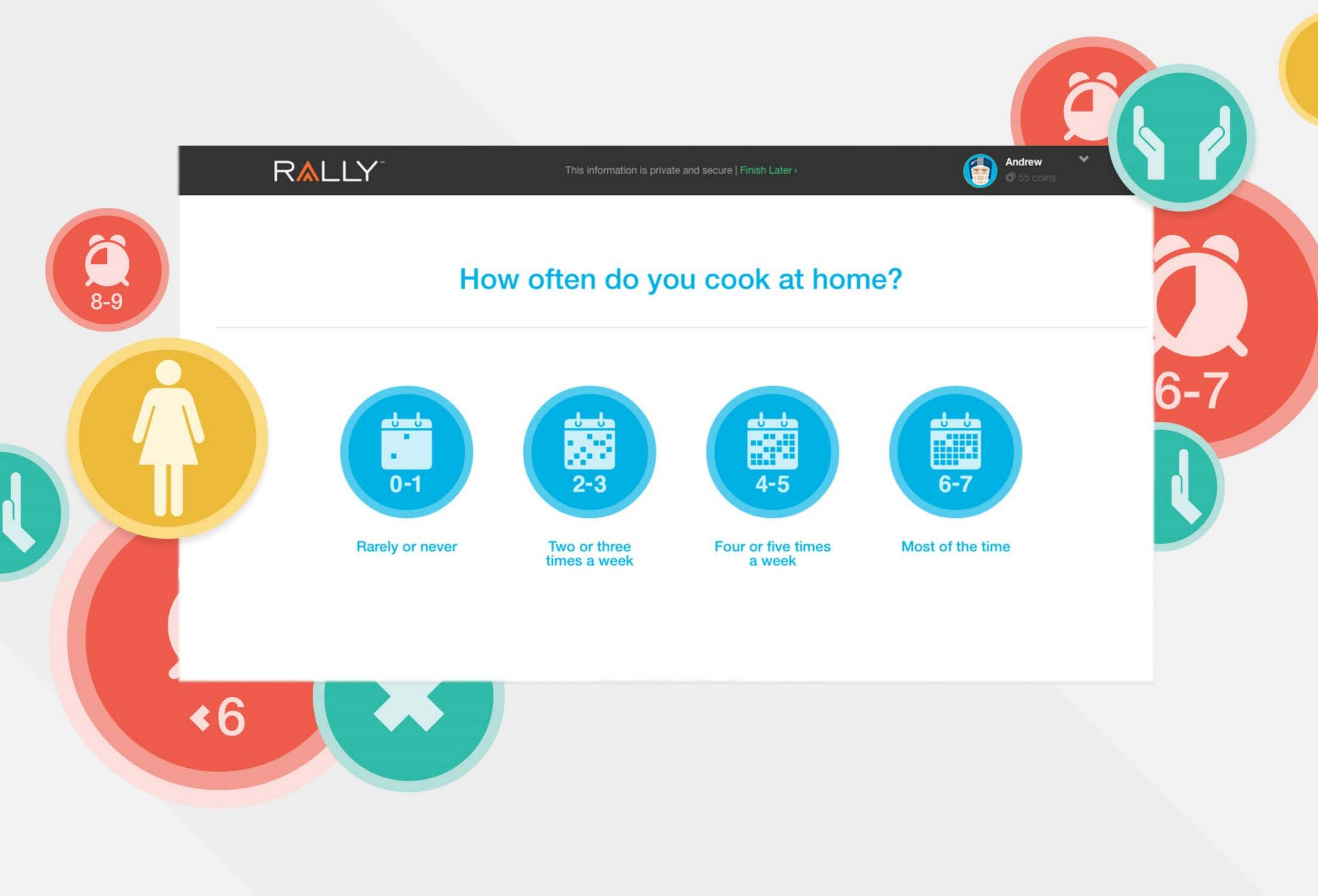
- Health Survey
- Targeted Interventions
- Wearable Integration
- Social Connectivity
- Clinical Pathways and Coaching
- Rewards/ Compliance Tracking



Accessing Rally

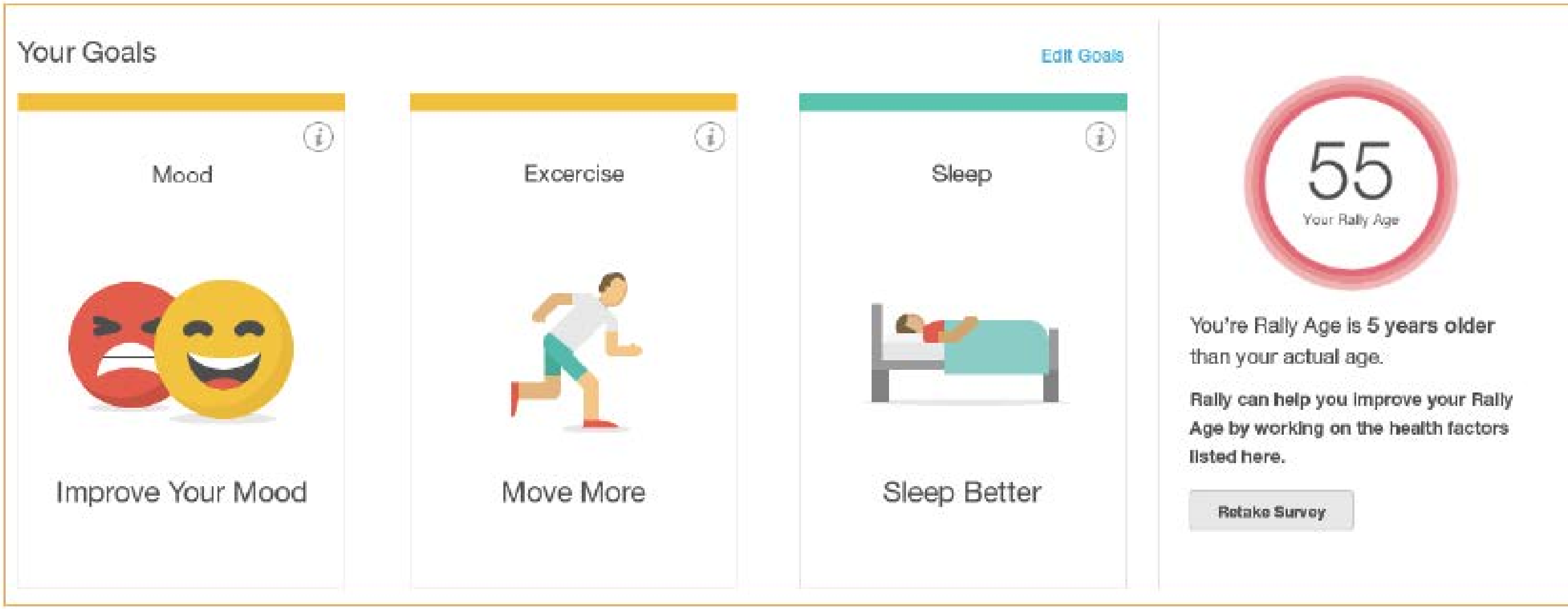


- My Health Toolkit
- Go.WeRally.com
- IOS or Android mobile app



RALLY
This information is private and secure | Finish Later ›
Andrew
55 coins
How often do you cook at home?
0-1
Rarely or never
2-3
Two or three times a week
4-5
Four or five times a week
6-7
Most of the time
8-9
6-7
‹6

Rally Age and Goals



Integrating Screenings

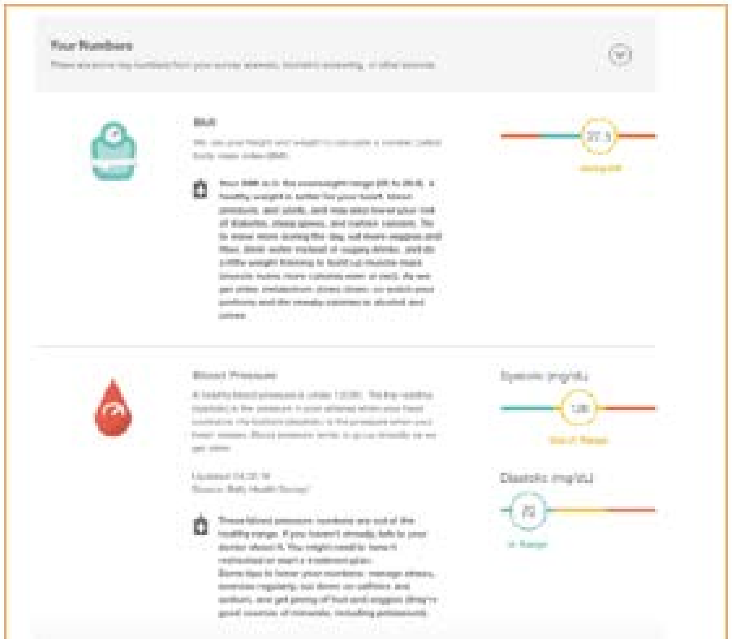
Rally will pre-fill biometrics*:

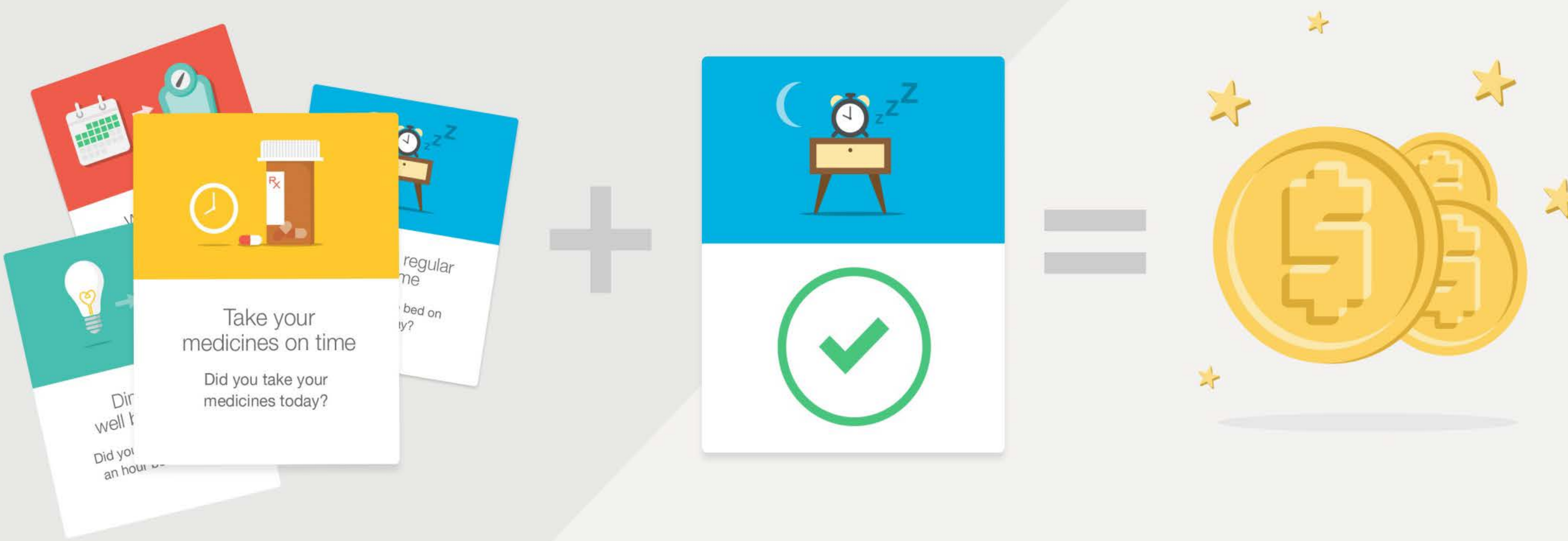
- BMI
- Blood Pressure
- Cholesterol (LDL, HDL, and Total Cholesterol)
- Blood Sugar (Fasting and A1c)

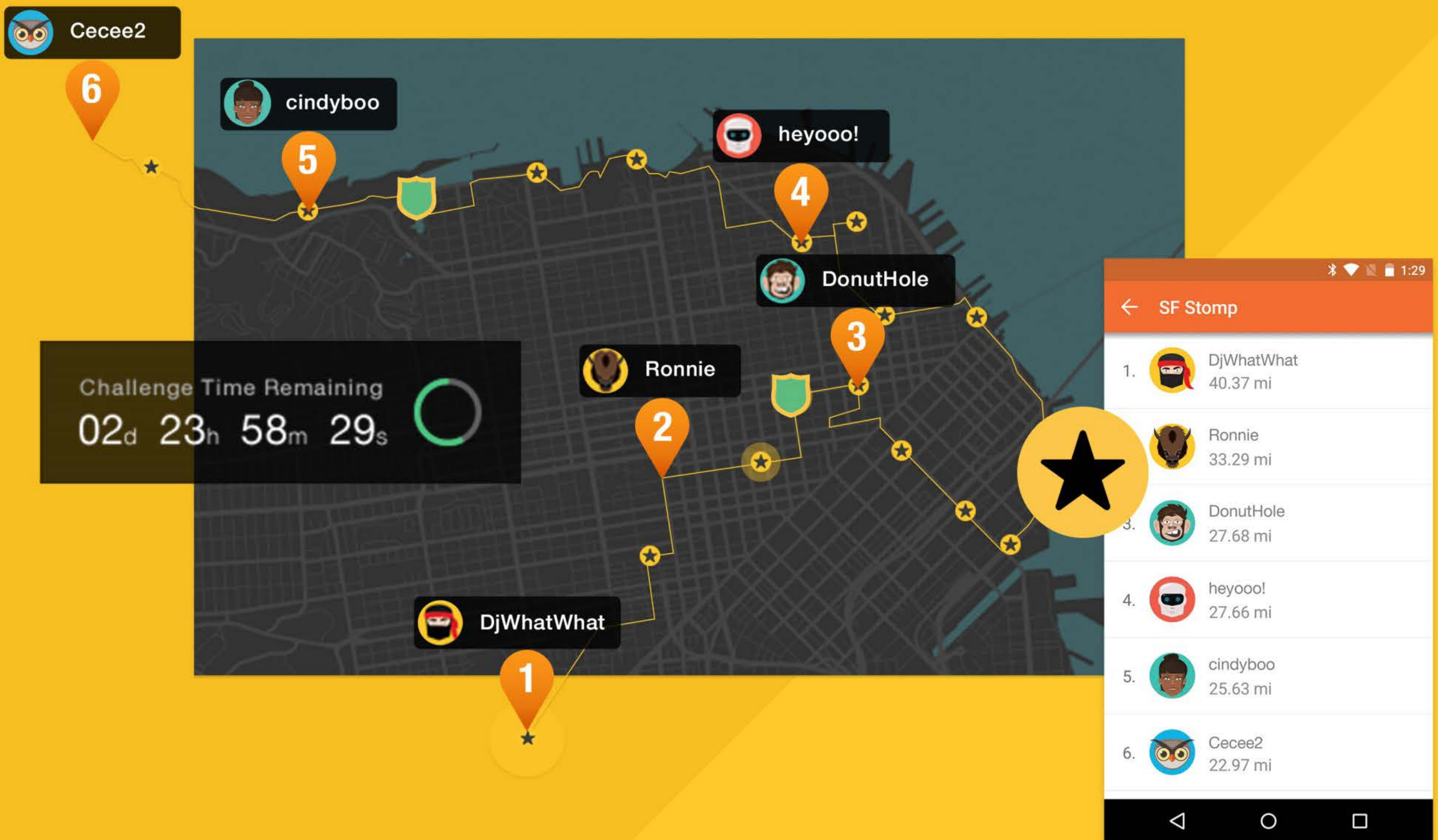
Each biometric entry includes a dynamic biometric value on a bar that indicates the user's acuity level (green, yellow, red).

The exception to this is Cholesterol, whose values will only appear in grey in adherence to the CDC's stance that lipid profile numbers alone may be insufficient to classify a person's need for treatment. If no biometric value is available.

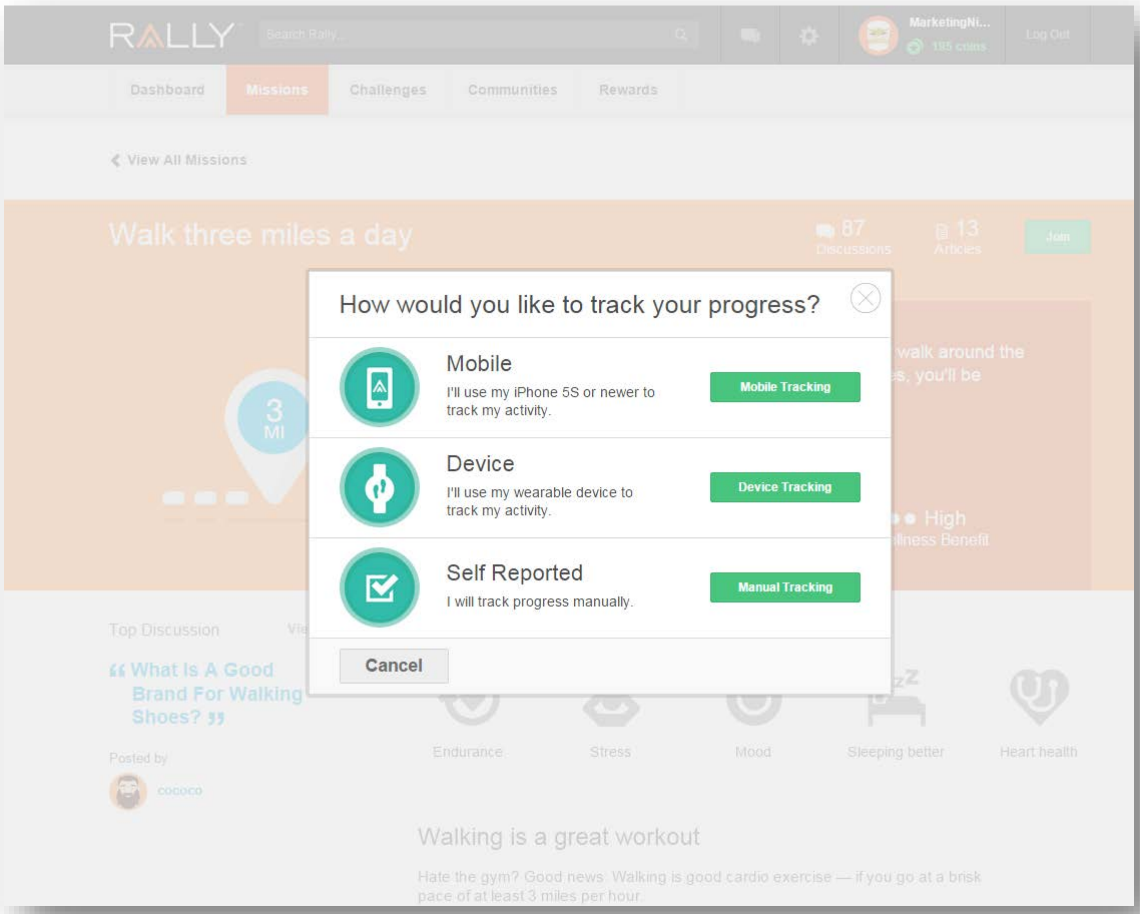
*Requires provider to submit values to BlueCross




Take your
medicines on time
Did you take your
medicines today?

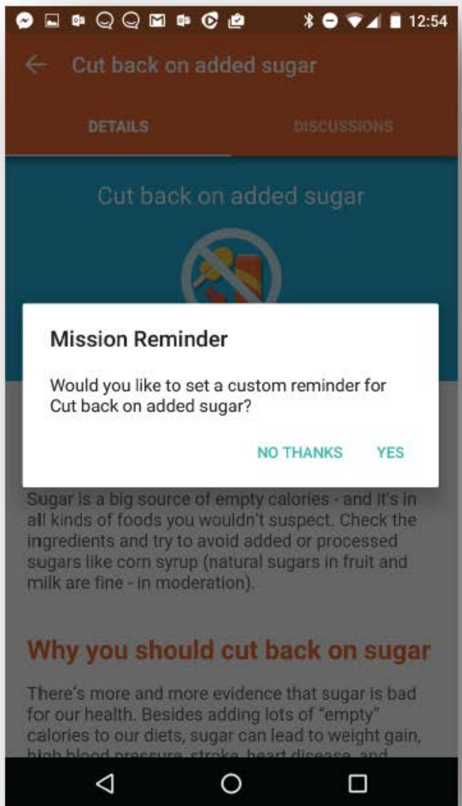

Cecee2
6
cindyboo
5
heyooo!
4
DonutHole
3
Ronnie
2
DjWhatWhat
1
Challenge Time Remaining
02d 23h 58m 29s
1:29
SF Stomp
1. DjWhatWhat 40.37 mi
Ronnie 33.29 mi
3. DonutHole 27.68 mi
4. heyooo! 27.66 mi
5. cindyboo 25.63 mi
6. Cecee2 22.97 mi

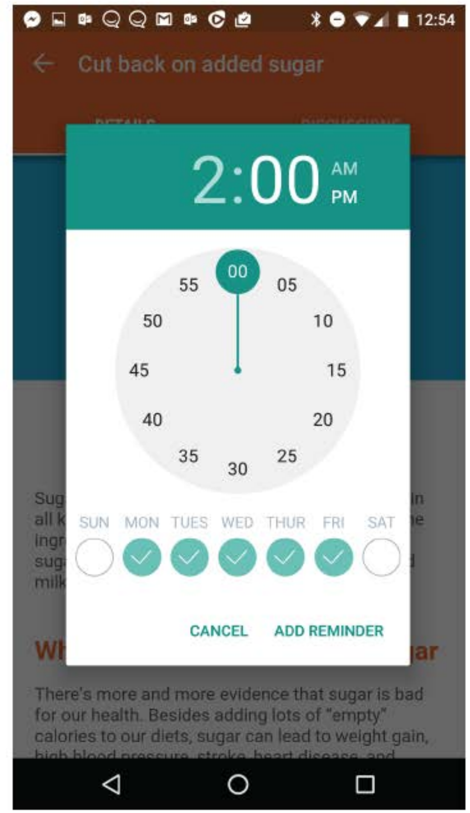
Device Connectivity

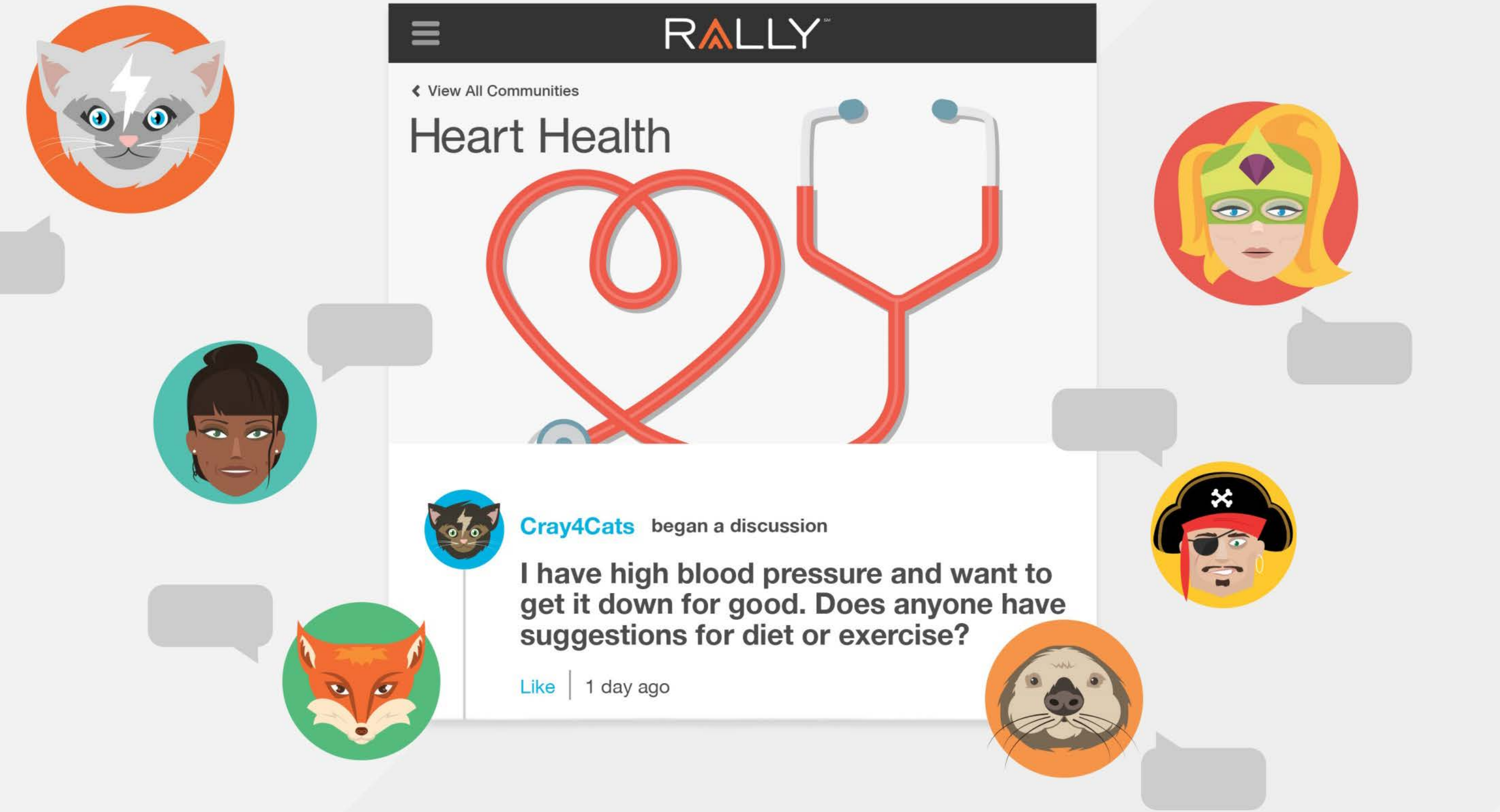


- Fitbit
- Jawbone
- BodyMedia
- iPhone
- RunKeeper
- Google Fit
- Apple Watch
- Android
- Garmin Devices
- Misfit
- Moves
- UA Band

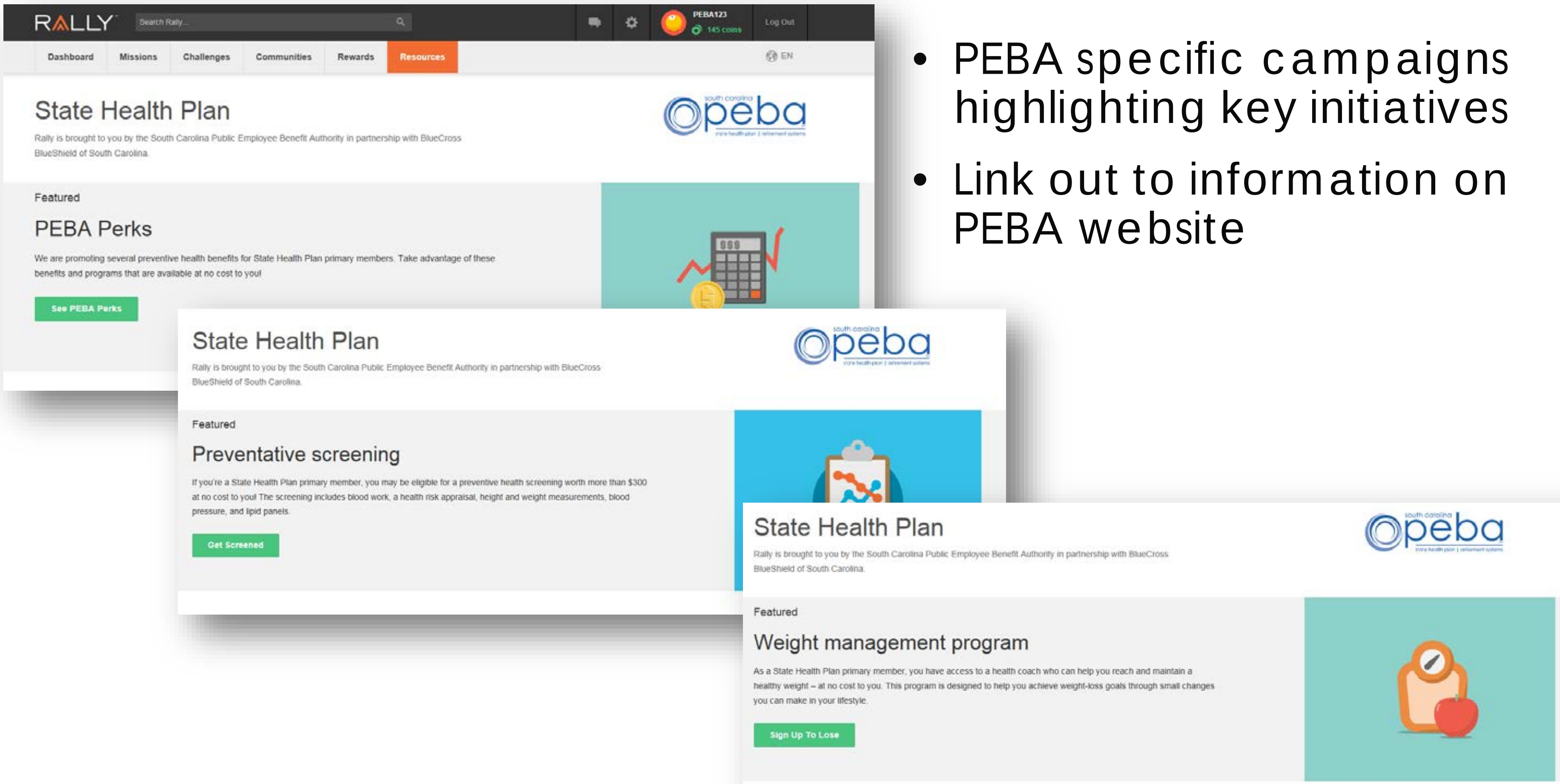
Mission Reminders






RALLY
View All Communities
Heart Health
Cray4Cats began a discussion
I have high blood pressure and want to get it down for good. Does anyone have suggestions for diet or exercise?
Like
1 day ago

Resource Page



- PEBA specific campaigns highlighting key initiatives
- Link out to information on PEBA website

Key Links

PEBA specific links provide connectivity to entire benefit package

All Resources

Your health and wellness benefits

- Blue CareOnDemand
- Find a provider
- Health management programs
- Member discounts
- Member messaging
- My Health Toolkit
- No-Pay Copay program
- Patient-Centered Medical Home
- PEBA Perks

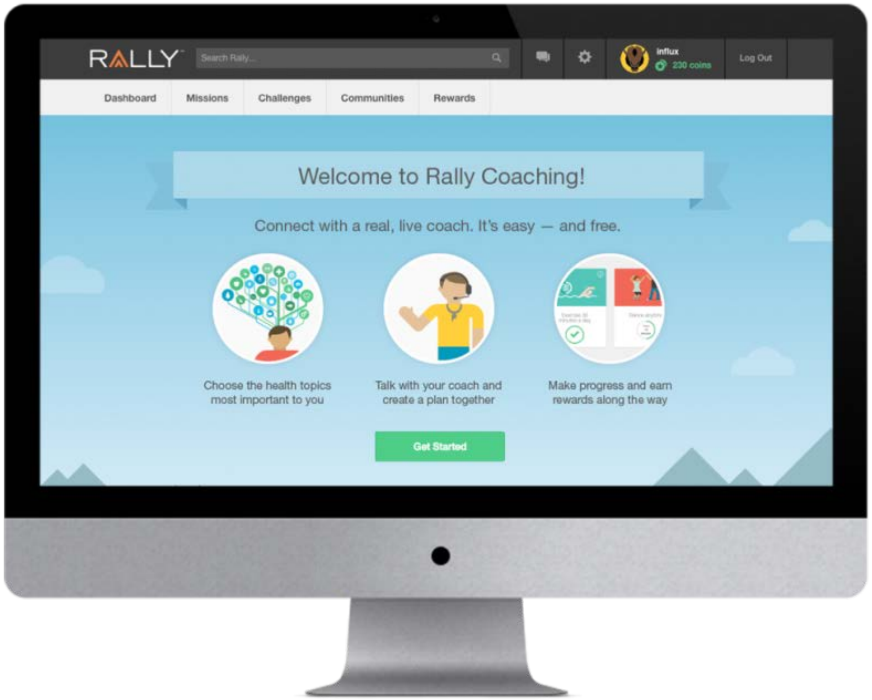
Your PEBA benefits

- Dental
- Health
- Life insurance
- Long term disability
- MoneyPlus
- Prescription benefits
- Vision care

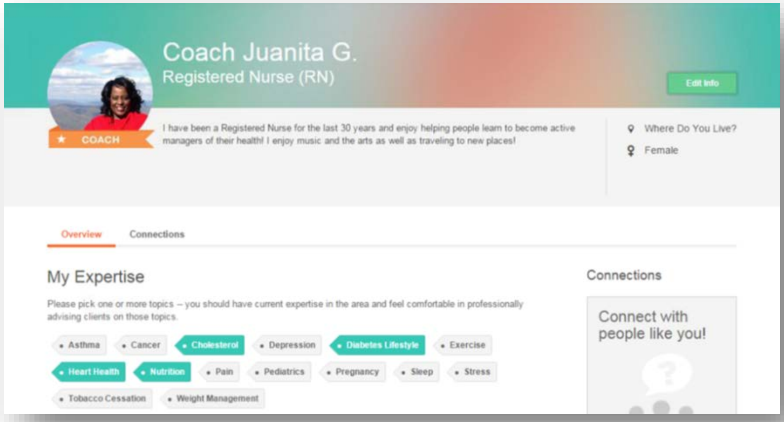
Health and wellness resources

- CDC Immunization schedule
- Find a restaurant near you that features South Carolina's freshest foods
- Find out what's in season in SC
- Healthy things to do near you
- SC farmers' markets and roadside markets
- Visit a SC state park
- SC Come Out and Play
- SC PEBA Facebook

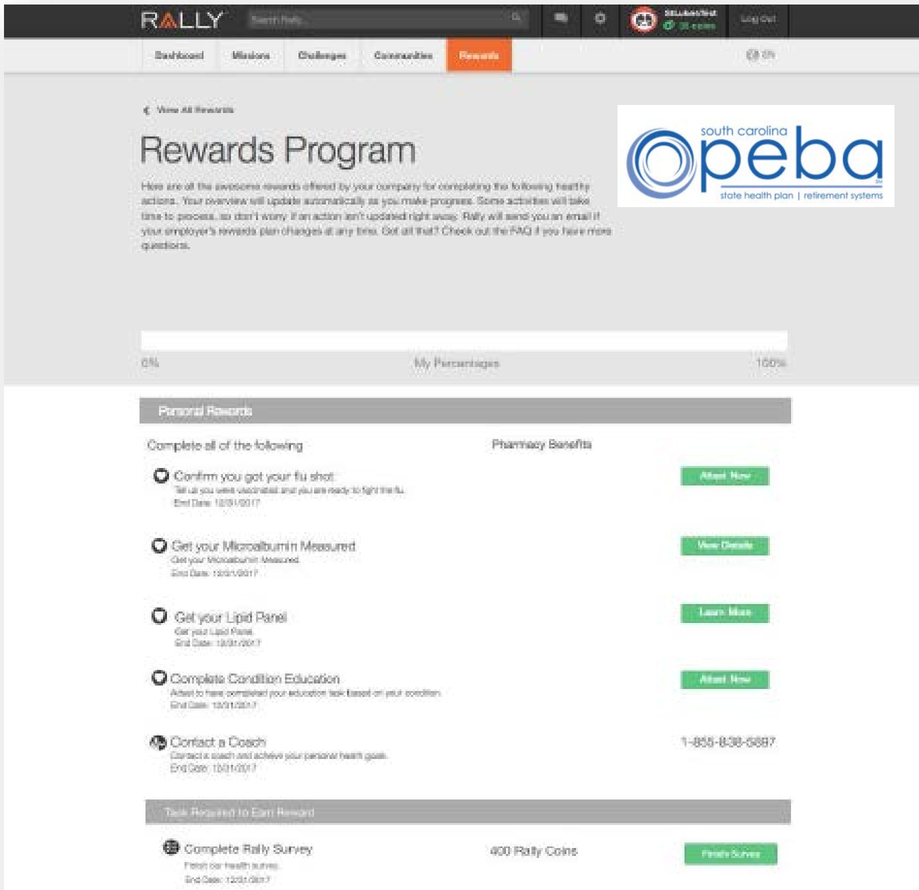
Coaching Connection



- Secure coaching based on member preference
- Coaches can:
  - View the member's Rally activities,
  - Suggest interventions
  - Send "Way to Go!" messages



No-Pay Copay Enhancement

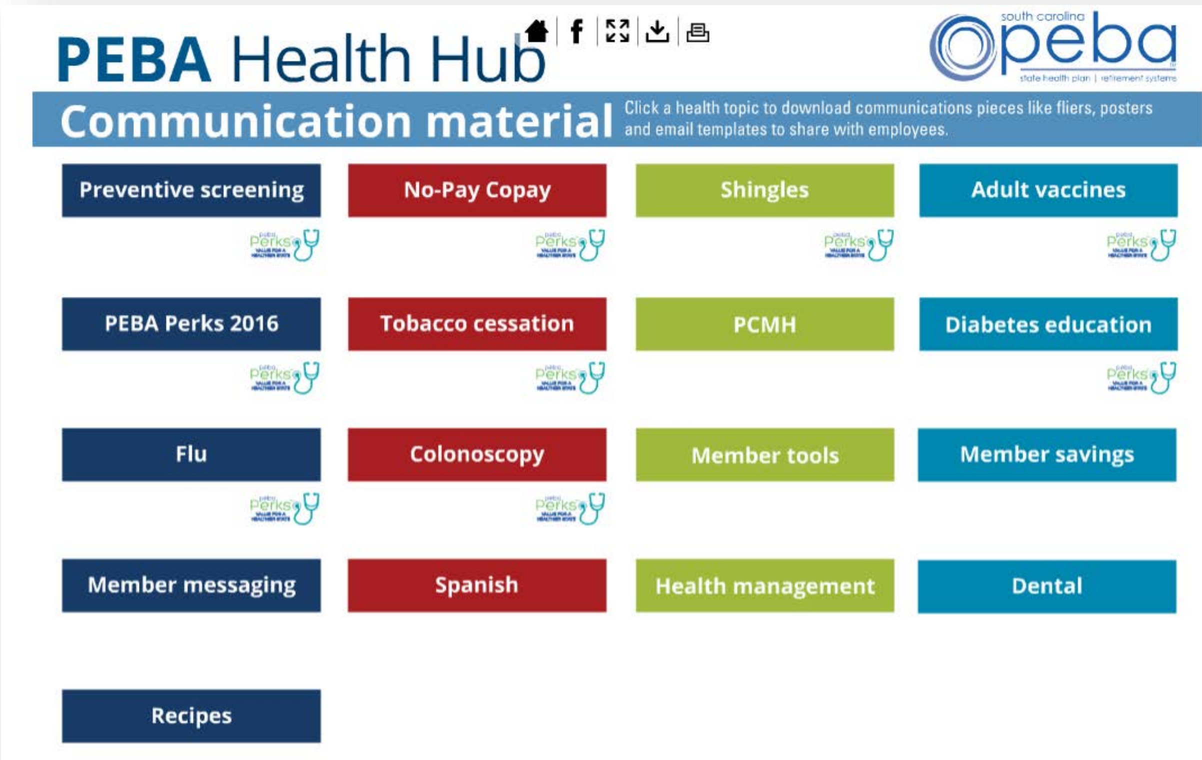


- Members will be able to track compliance status
- Ongoing engagement "nudges"
- Integrated concierge service
- Reporting

Tailored Interventions

BlueCross Defined Pop Risk Segments	Personalized Engagement Prioritization (1,2,3)			
	Prevention and health maintenance	Digital support of chronic risk/condition	Program promotion	Rewards
Healthy	**1**	**NA**	**NA**	Prevention
At Risk	**2**	**1**	**NA**	Literacy and Prevention
Moderate Risk Chronic	**3**	**1**	**2**	Digital support of chronic risk/conditions
High Risk Chronic	**3**	**2**	**1**	Program participation and digital support

Promotional toolkit for benefit administrators



- Strategies
- Print-Ready Materials
- Email templates and digital resources
- Customizable Materials

Disclaimer

This presentation does not constitute a comprehensive or binding representation regarding the employee benefits offered by the South Carolina Public Employee Benefit Authority (PEBA). The terms and conditions of the retirement and insurance benefit plans offered by PEBA are set out in the applicable statutes and plan documents and are subject to change. Please contact PEBA for the most current information. The language used in this presentation does not create any contractual rights or entitlements for any person.

PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
BOARD RETREAT

Meeting Date: November 30, 2016

---

1. Subject: Telehealth Update

---

2. Summary: Telehealth Update

Background Information: Ms. Karen Patton from BCBSSC will lead a discussion related to Blue CareOnDemand.

3. What is the Board asked to do? Receive as information

---

4. Supporting Documents:

(a) List those attached:
  1. Blue CareOnDemand

south carolina PEBA
state health plan | retirement systems

Serving those who serve South Carolina

Blue CareOnDemand

Virtual Visits for State Health Plan Members

for State Health Plan Members

November 30, 2016

What is Blue CareOnDemand?

- BlueCross BlueShield of South Carolina's telehealth offering
- Members connect with board-certified physicians and other licensed health care professionals 24/7/365 through video visits.

What is telehealth?

- The delivery of health-related services and information via telecommunications and video technologies.
- Allows member to be seen for urgent care issues 24/7/365 when their primary care physician may not be available.
- Provides an option to the emergency room for concerns after hours.
- Not a replacement for a member's primary care physician.

BlueCross telehealth status

- BlueCross has offered telehealth to self insured groups since 2014
- We launched virtual visit for fully insured business on January 1, 2016
- S.B. 1035 South Carolina Telemedicine Act was signed into law June 3, 2016 and:
  - authorized the practice of telemedicine
  - established requirements related to the practice of telemedicine
  - authorized the prescription of medication as part of the practice of telemedicine and established limitations
- Currently working with South Carolina provider network on expansion:
  - Follow up care with current patients
  - Health coaching
  - Other specialties

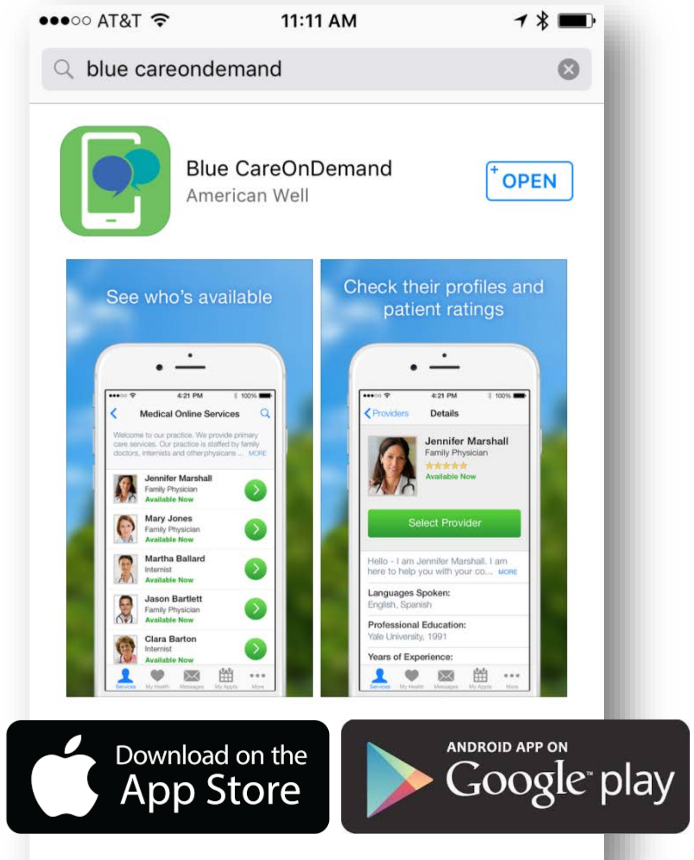
Blue CareOnDemand: 24/7/365 access

- Virtual visits within 15 minutes
- Urgent care diagnoses addressed:
  - Sinusitis
  - Respiratory infection
  - Bronchitis
  - Urinary tract infection
  - Pharyngitis
  - Pink eye
  - Cough
  - Flu
  - Allergies
  - Dysuria
- Includes needed prescriptions within certain parameters

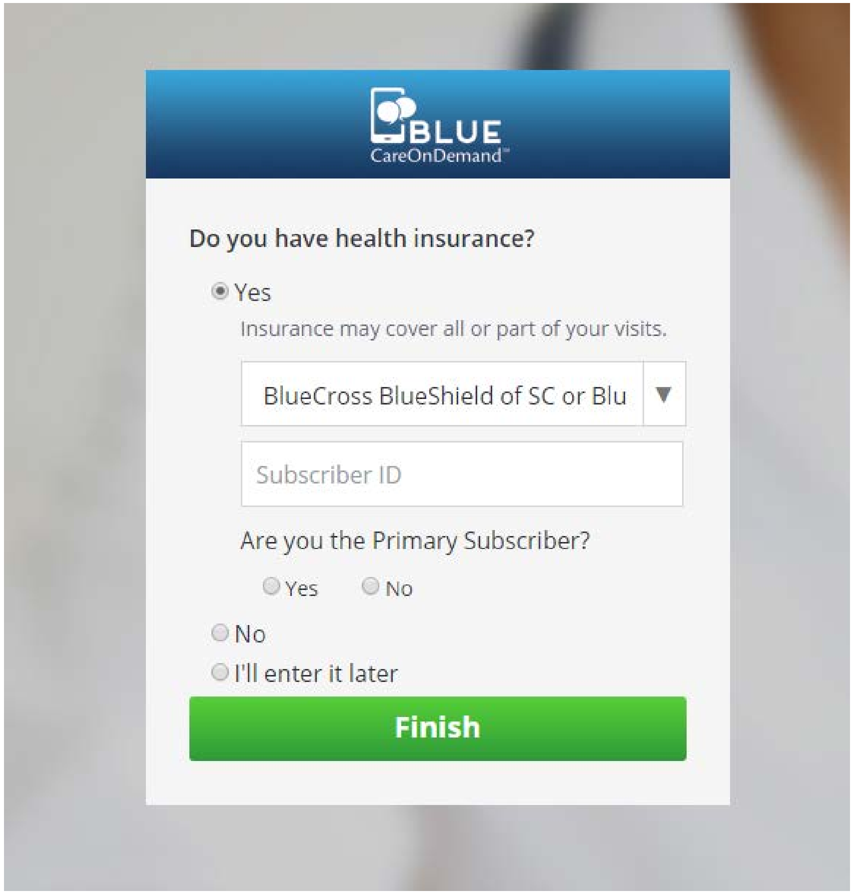
Blue CareOnDemand: member experience

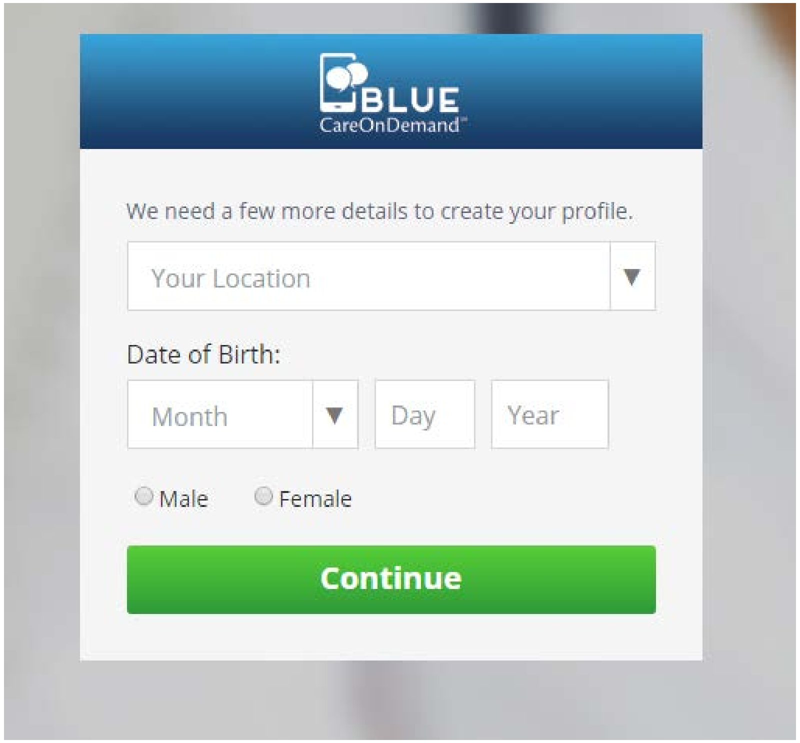
Member access via web or mobile

www.BlueCareOnDemandSC.com



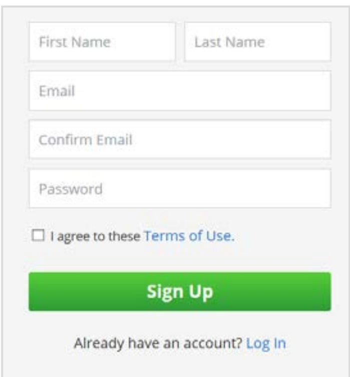
Blue CareOnDemand: profile creation

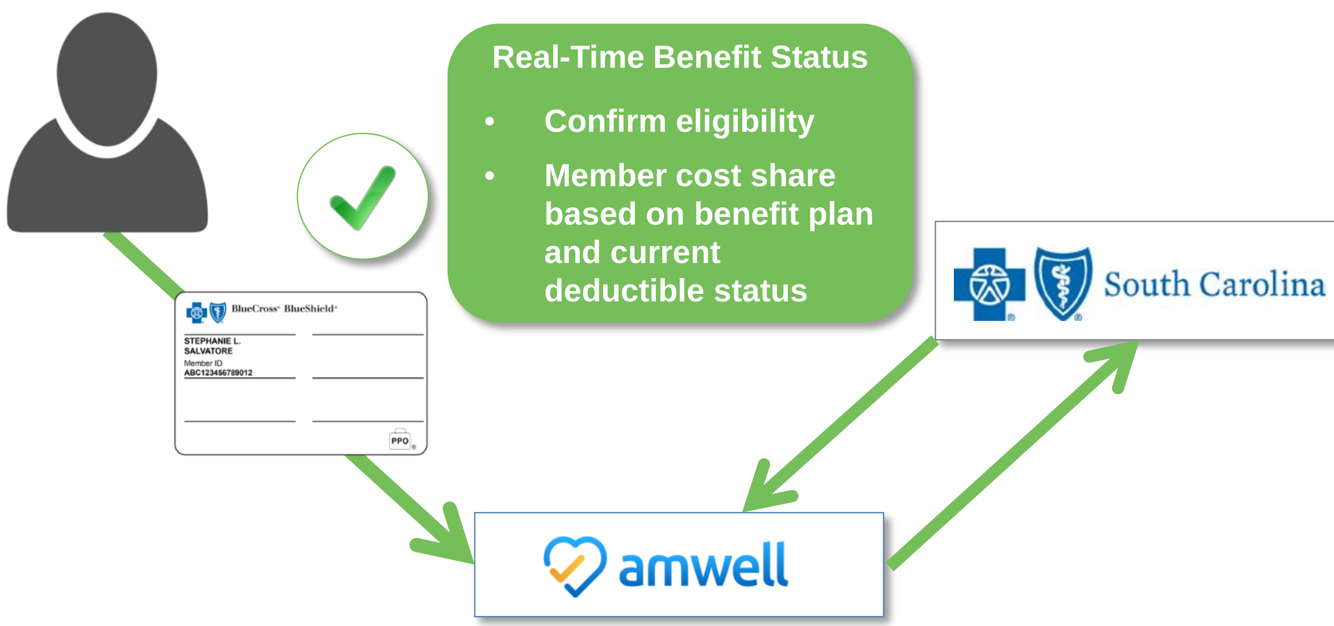




Real-time communication with BlueCross systems

Member signs up for the program, providing information to enable a virtual visit platform with real time communication with BlueCross systems



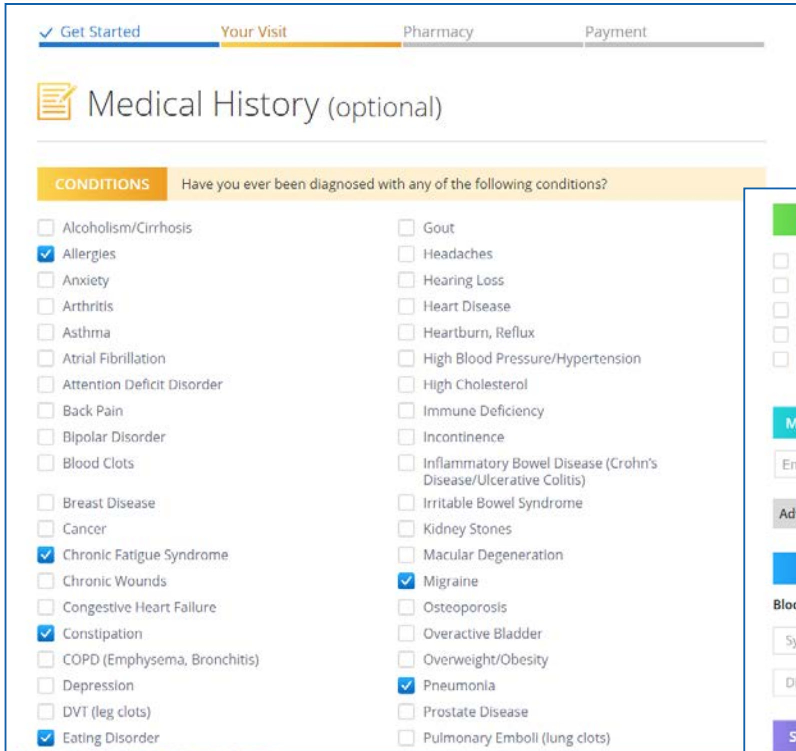


Real-Time Benefit Status

- **Confirm eligibility**
- **Member cost share based on benefit plan and current deductible status**

Member emails used to promote engagement

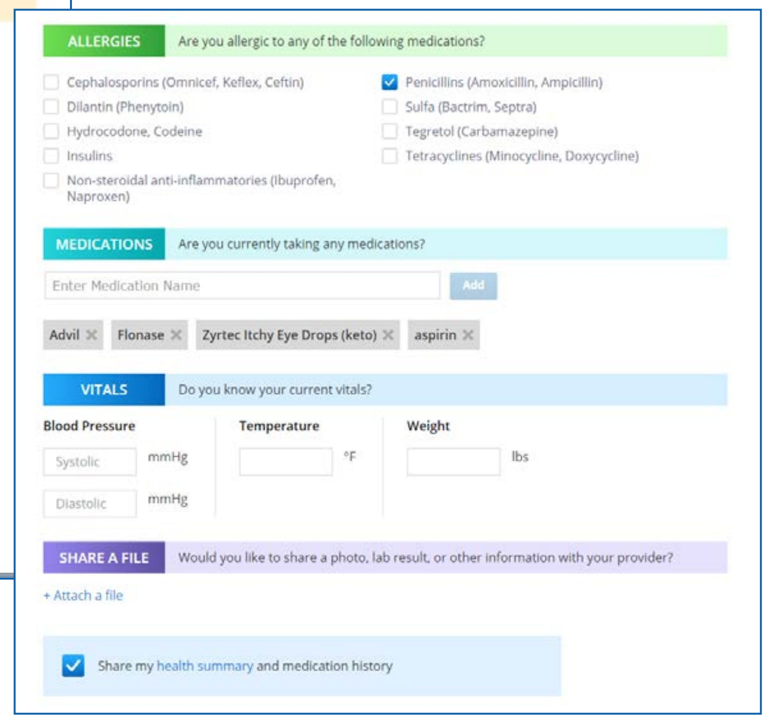
Initiating a virtual visit – medical history


✓ Get Started | Your Visit | Pharmacy | Payment

Medical History (optional)

CONDITIONS Have you ever been diagnosed with any of the following conditions?

- [ ] Alcoholism/Cirrhosis
- [x] Allergies
- [ ] Anxiety
- [ ] Arthritis
- [ ] Asthma
- [ ] Atrial Fibrillation
- [ ] Attention Deficit Disorder
- [ ] Back Pain
- [ ] Bipolar Disorder
- [ ] Blood Clots
- [ ] Breast Disease
- [ ] Cancer
- [x] Chronic Fatigue Syndrome
- [ ] Chronic Wounds
- [ ] Congestive Heart Failure
- [x] Constipation
- [ ] COPD (Emphysema, Bronchitis)
- [ ] Depression
- [ ] DVT (leg clots)
- [x] Eating Disorder
- [ ] Gout
- [ ] Headaches
- [ ] Hearing Loss
- [ ] Heart Disease
- [ ] Heartburn, Reflux
- [ ] High Blood Pressure/Hypertension
- [ ] High Cholesterol
- [ ] Immune Deficiency
- [ ] Incontinence
- [ ] Inflammatory Bowel Disease (Crohn's Disease/Ulcerative Colitis)
- [ ] Irritable Bowel Syndrome
- [ ] Kidney Stones
- [ ] Macular Degeneration
- [x] Migraine
- [ ] Osteoporosis
- [ ] Overactive Bladder
- [ ] Overweight/Obesity
- [x] Pneumonia
- [ ] Prostate Disease
- [ ] Pulmonary Emboli (lung clots)


ALLERGIES Are you allergic to any of the following medications?

- [ ] Cephalosporins (Omnicef, Keflex, Ceftin)
- [ ] Dilantin (Phenytoin)
- [ ] Hydrocodone, Codeine
- [ ] Insulins
- [ ] Non-steroidal anti-inflammatories (Ibuprofen, Naproxen)
- [x] Penicillins (Amoxicillin, Ampicillin)
- [ ] Sulfa (Bactrim, Septra)
- [ ] Tegretol (Carbamazepine)
- [ ] Tetracyclines (Minocycline, Doxycycline)

MEDICATIONS Are you currently taking any medications?

Enter Medication Name | Add

Advil ✕ | Flonase ✕ | Zyrtec Itchy Eye Drops (keto) ✕ | aspirin ✕

VITALS Do you know your current vitals?

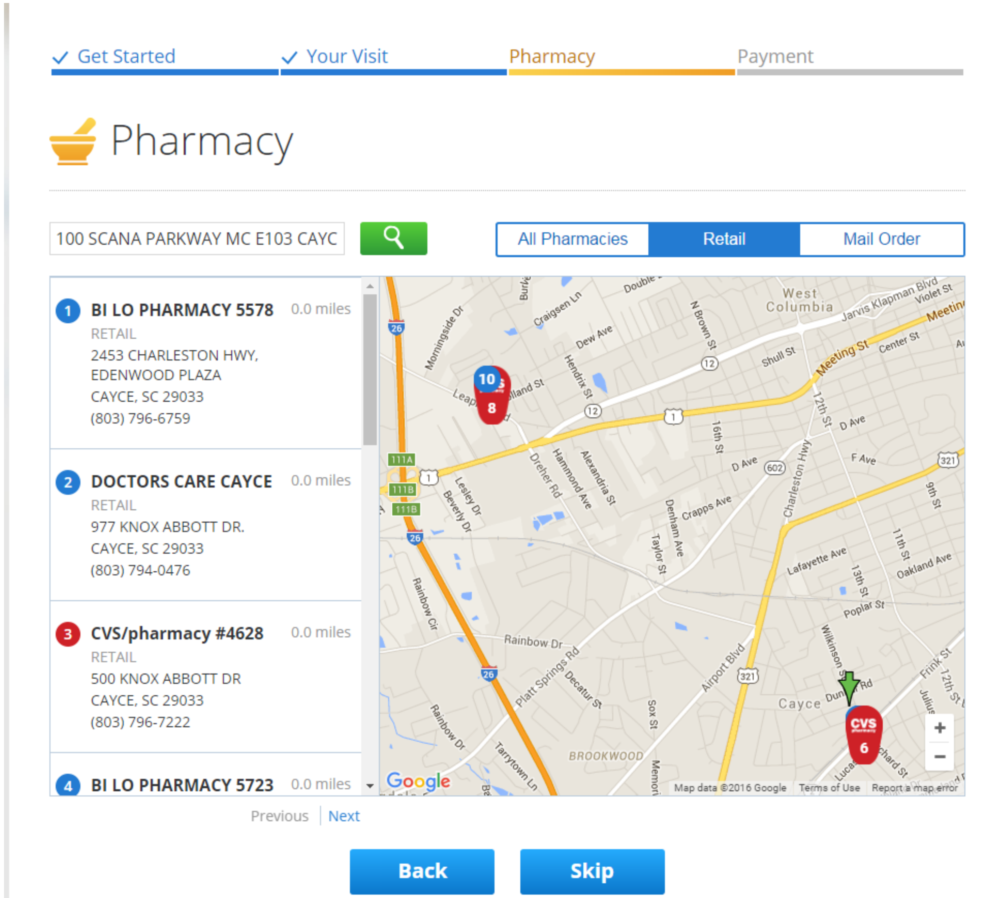
Blood Pressure: Systolic mmHg, Diastolic mmHg | Temperature °F | Weight lbs

SHARE A FILE Would you like to share a photo, lab result, or other information with your provider?

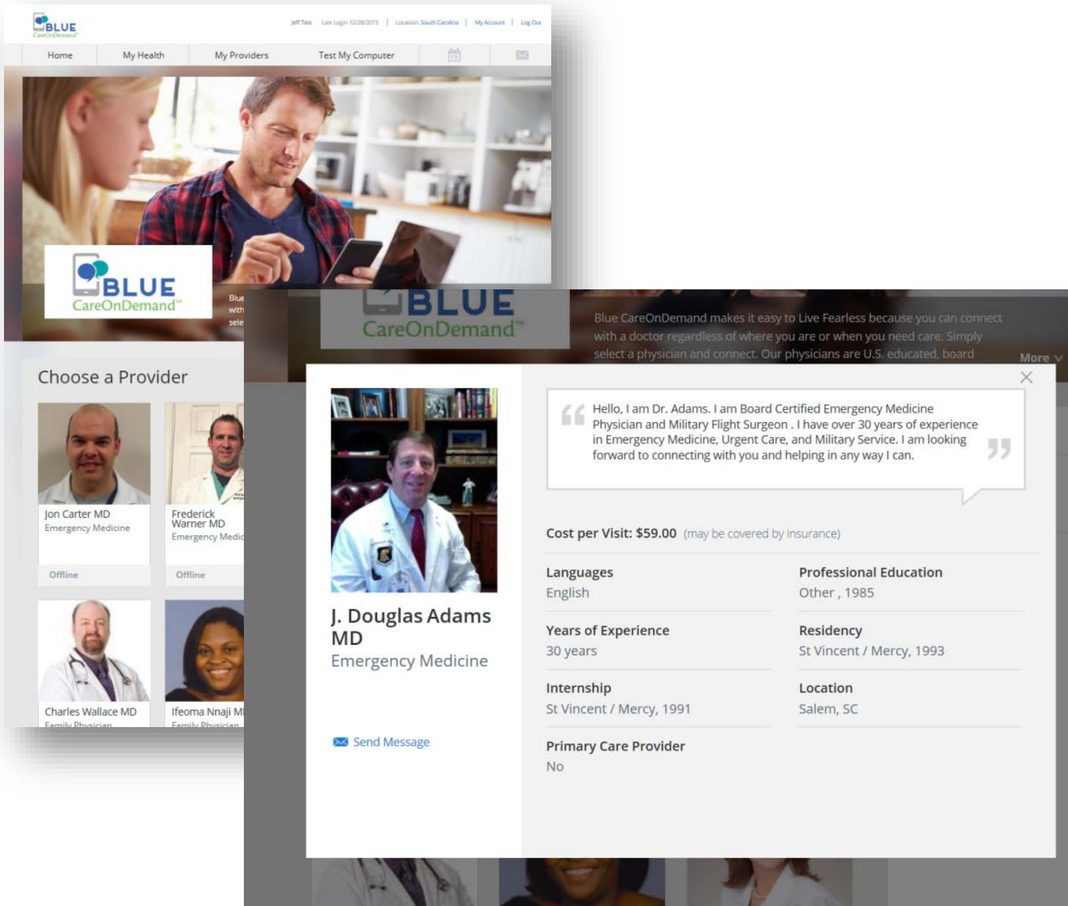
+ Attach a file

- [x] Share my health summary and medication history

Initiating a virtual visit: selecting a pharmacy

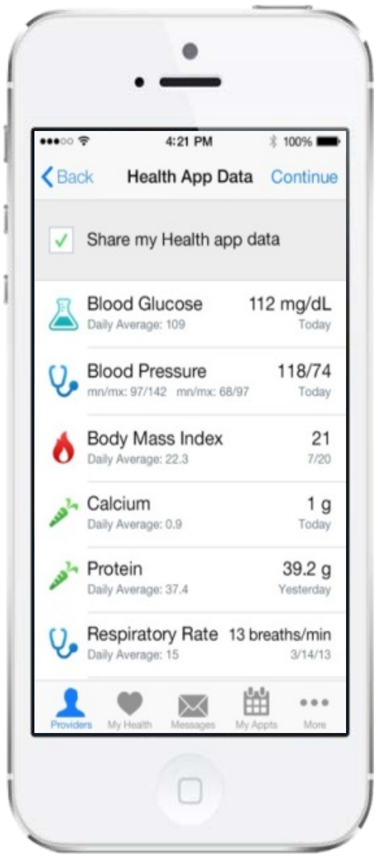


Virtual visit: provider selection



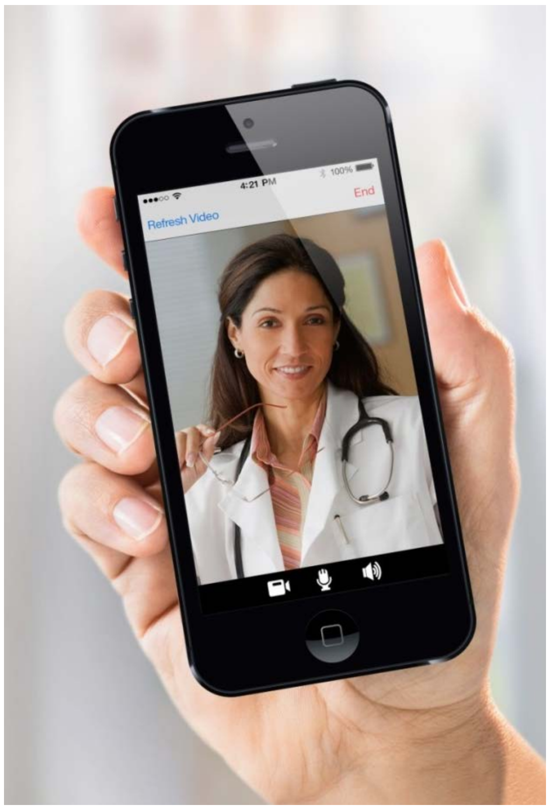
- Members select ***current location***
- Members choose from a selection of available providers licensed in their state
- Provider panel includes:
  - Doctors Care
  - Online Care Group
    - Online only provider group owned by American Well and Anthem BlueCross
    - National licensure coverage
  - Future expansion to BlueCross SC provider network

Doctors access medical history prior to visit



- Biometrics and vitals:
  - Self reported in the platform
  - Downloaded from Apple Health app
- Patient-supplied medical history
- Past telehealth visit records and provider notes
- Future functionality: Gaps in care

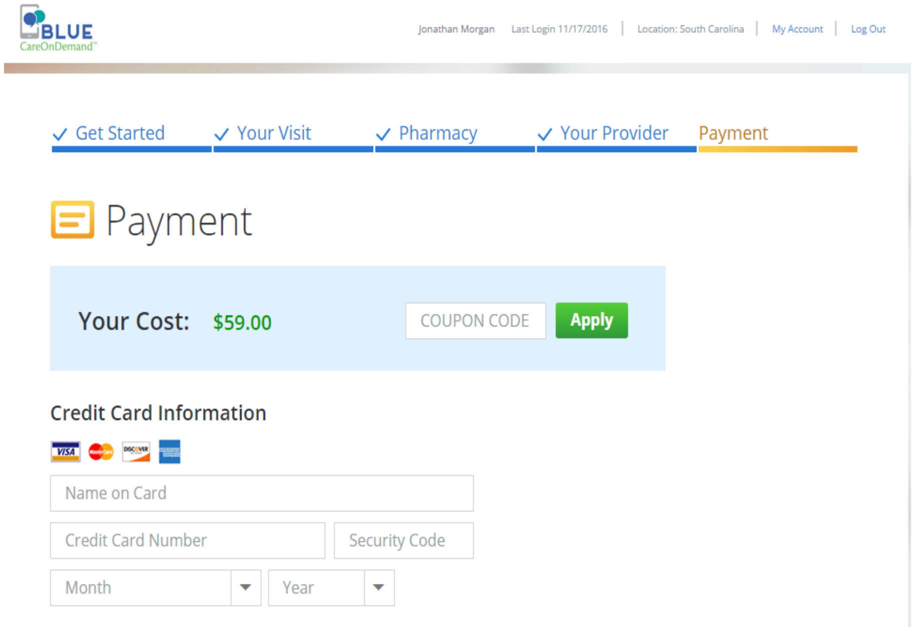
About the visit



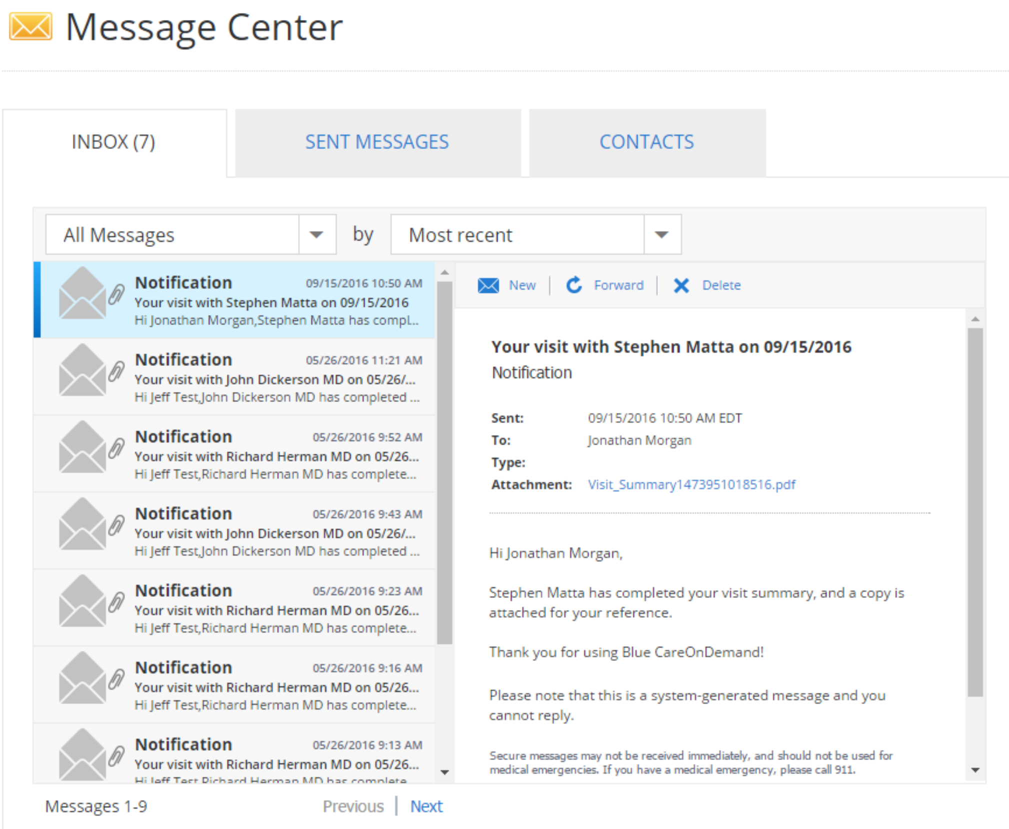
- Consults typically last about 10 minutes — longer if needed
- Doctors review medical history, ask pertinent questions and address member concerns
- Doctors provide treatment plan and prescribe medications as needed
- In **85%** of visits, the member's issue is resolved completely

Paying for the virtual visit

- Cost is based on real-time member eligibility and benefits, including deductible and out of pocket status
- Payment collected prior to visit
- All credit cards, including FSA and HSA cards, are accepted

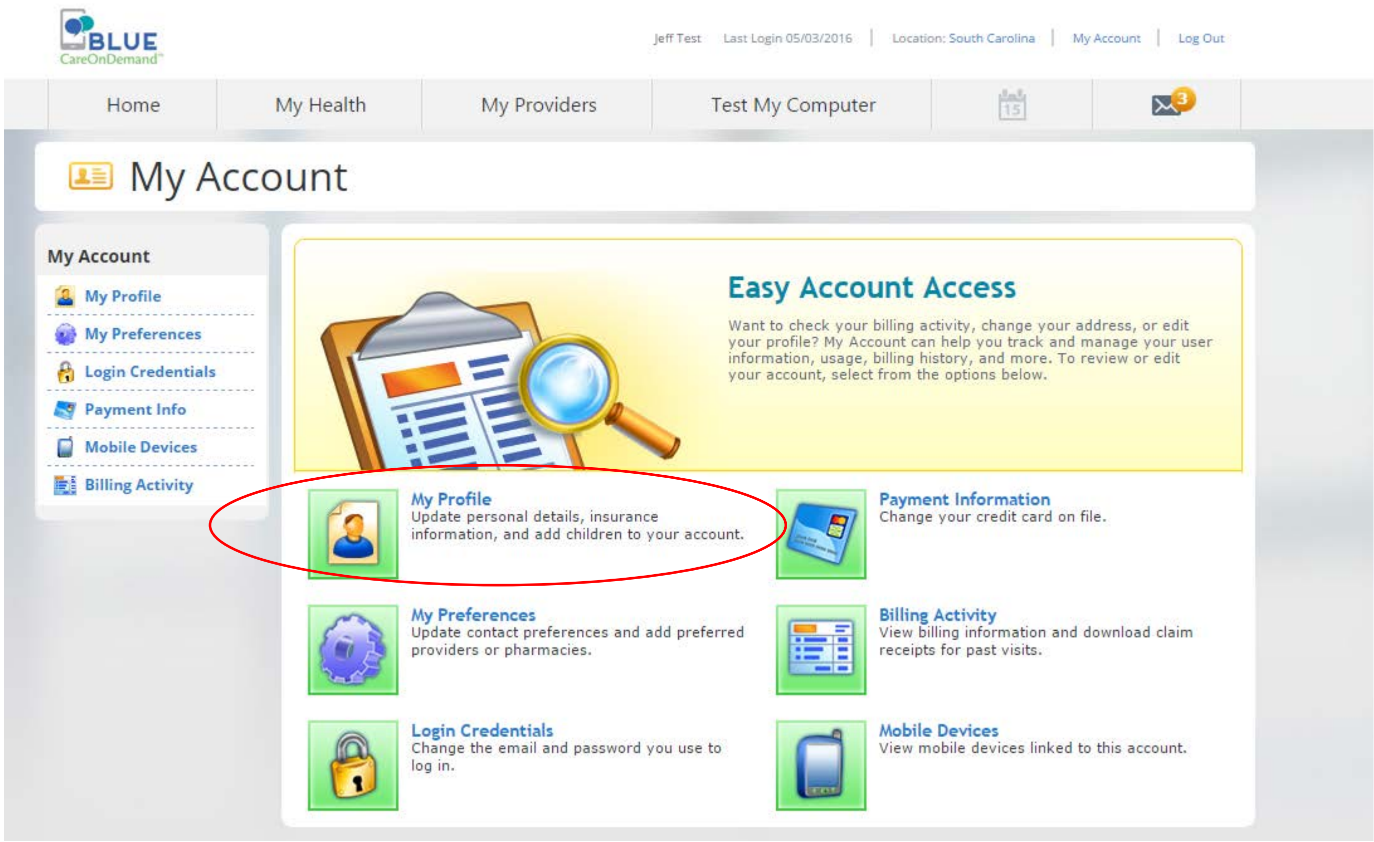


After the visit



- Securely message your PCP
- Download Visit Summary
- Print Receipt

Manage your Blue CareOnDemand account



Disclaimer

This presentation does not constitute a comprehensive or binding representation regarding the employee benefits offered by the South Carolina Public Employee Benefit Authority (PEBA). The terms and conditions of the retirement and insurance benefit plans offered by PEBA are set out in the applicable statutes and plan documents and are subject to change. Please contact PEBA for the most current information. The language used in this presentation does not create any contractual rights or entitlements for any person.

PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
BOARD RETREAT

Meeting Date: November 30, 2016

---

1. Subject: Fiduciary Education

---

2. Summary: Fiduciary Education

Background Information: An educational presentation by Rob Gauss from Ice Miller as part of the Funston Recommendations.

3. What is the Board asked to do? Receive as Information

---

4. Supporting Documents:

(a) List those attached:

1. Fiduciary Duties and Considerations Regarding Recent Lawsuits Against Retirement Plans

Fiduciary Duties and Considerations Regarding Recent Lawsuits Against Retirement Plans

South Carolina Public Employee Benefit Authority Board of Directors Retreat

By:
Robert L. Gauss, Partner

November 30, 2016

IceMiller
LEGAL COUNSEL

What Are the Guiding Principles?

"We shall strive for perfection. We shall not achieve it immediately — but we still shall strive. We may make mistakes — but they must never be mistakes which result from faintness of heart or abandonment of moral principle."

- FDR, 4th Inaugural, January 20, 1945

Considerations

- Prior Fiduciary Training Presentations
- 2013 Report on Fiduciary Responsibilities (SBCB)
- RSIC Presentation to Senate Finance Special Subcommittee to Review the Investment of State Retirement Funds, February 25, 2014
- Funston Performance Audit, April, 2014 (RSIC)
- Funston Performance Audit, January, 2015 (PEBA)
- Funston Board Presentation, January 21, 2015

Touchstones

- South Carolina Code of Laws 9-16-10, 9-16-40, and 9-16-50
- State Ethics Act
  - S.C. Code Title 8, Chapter 13
  - Code Rules of Conduct § 8-13-700 *et. seq*.
- Board's Ethics Policy

Touchstones *(cont'd)*

- Board's Conflict Policy
  - (A) No member of the Board of Directors may make, participate in making, or in any way attempt to use his membership to influence a Board decision in which he, a family member, an individual with whom he is associated, or a business with which he is associated has an economic interest. A Board member who, in the discharge of his official responsibilities, is required to take action or make a decision which affects an economic interest of himself, a family member, an individual with whom he is associated, or a business with which he is associated shall:

Touchstones *(cont'd)*

- (1) Prepare a written statement describing the matter requiring action or decisions and the nature of his potential conflict of interest with respect to the action or decision;
- (2) Furnish a copy of the statement to the Board Chairman, who shall cause the statement to be printed in the minutes and require that the member be excused from any votes, deliberations, and other actions on the matter on which the potential conflict of interest exists and shall cause the disqualification and the reasons for it to be noted in the minutes.

- (B) The members of the PEBA Board of Directors must abide by the following additional conflict-of-interest guidelines:

Touchstones *(cont'd)*

- (1) Directors should make reasonable efforts to avoid conflicts of interest and appearances of conflicts of interest.
- (2) Directors may not under any circumstances accept offers, by reason of their service, relationship or employment with PEBA, to trade in any security or other investment on terms more favorable than those available to the general investing public or, in the case of private market investments, a similarly situated investor.
- (3) A conflict of interest exists for a Director whenever the Director has or is seeking a personal or private commercial or business relationship that could reasonably be expected to diminish the Director's independence of judgment in the performance of the Director's responsibilities to PEBA.

Touchstones *(cont'd)*

- ***Note:*** Cure ability in PEBA Conflicts of Interest Policy
- ***Note:*** Exceptions to Conflict of Interest Policy
- ***Note:*** Policies apply to all activities (Retirement, Health, OPEB)

Fiduciary Entities

- Who is a fiduciary?
  - Any person who:
    - Exercises any discretionary authority or discretionary control respecting management of a plan or exercises any authority or control respecting management or disposition of its assets.
    - Renders investment advice
    - Has any discretionary authority or discretionary responsibility in the administration of the plan.
      - *IRC § 4975(e)(3)*
      - *9-16-10(4)*

Fiduciary Entities *(cont'd)*

- PEBA Board is one of multiple fiduciaries for the South Carolina Retirement Systems
  - PEBA (Board is trustee – 9-16-10(9))
  - State Fiscal Accountability Authority (co-Trustee with PEBA) (9-1-1310)
  - Retirement System Investment Commission (RSIC)
  - State Treasurer (Custodian) (9-1-1320)
    - Can hold in cash up to 10% of System assets (9-1-1330)
  - Legislature

Fiducíary Entities *(cont'd)*

- Each has different (and sometimes overlapping) responsibilities
  - "Unique among state public pension funds"
  - "Inherent potential for confusion and conflict"
- PEBA Board is also one of multiple fiduciaries for the State's Health Insurance and OPEB funds
  - PEBA (Board is trustee – 1-11-705(B), 1-11-707(B), 1-11-710(4))
  - State Fiscal Accountability Authority (Review of Insurance Plans – 9-4-45)
  - State Treasurer (Custodian and Investor of OPEB funds – 1-11-705(B), (G), 1-11-707(B), (G))
  - Legislature

Fiduciary Entities *(cont'd)*

- PEBA Board is also a fiduciary for the defined contribution plans offered by the State
  - State Optional Retirement Program (9-20-30)
  - South Carolina Deferred Compensation Program (8-23-20)
  - Defined as Trustee in Plan Documents
- Every power or duty given to the Board by state law must be exercised in accordance with fiduciary principles

Sources of Fiduciary Principles

- Internal Revenue Code – Applicable to governmental plans.
- ERISA – Not applicable to governmental plans, but an excellent resource due to robust regulatory framework and extensive developed case law.
- Restatement of Third, Trusts.
- Uniform Management of Public Retirement Systems Act (UMPERSA) – compilation of common law.

Sources of Fiduciary Principles *(cont'd)*

- State Law:
  - (1) **solely in the interest of the retirement systems, participants, and beneficiaries;**
  - (2) **for the exclusive purpose of providing benefits to participants and beneficiaries and paying reasonable expenses of administering the system;**
  - (3) **with the care, skill, and caution under the circumstances then prevailing which a prudent person acting in a like capacity and familiar with those matters would use in the conduct of an activity of like character and purpose;**
  - (4) impartially, taking into account any differing interests of participants and beneficiaries;

Sources of Fiduciary Principles *(cont'd)*

- (5) **incurring only costs that are appropriate and reasonable; and**
- (6) in accordance with a good faith interpretation of this chapter.

(9-16-40)

- (A) **Compliance by the trustee, commission, or other fiduciary with Sections 9-16-30, 9-16-40, and 9-16-50 must be determined in light of the facts and circumstances existing at the time of the trustee's, commission's, or fiduciary's decision or action and not by hindsight.**
- (B) **The commission's investment and management decisions must be evaluated not in isolation but in the context of the trust portfolio as a whole and as a part of an overall investment strategy having risk and return objectives reasonably suited to the retirement system.**

(9-16-60)

See also standards of conduct 9-16-360.

Fiduciary Principles – Exclusive Benefit Rule

- "Under the trust instrument it [must be] impossible, at any time prior to the satisfaction of all liabilities with respect to employees and their beneficiaries under the trust, for any part of the corpus or income to be (within the taxable year or thereafter) used for, or diverted to, purposes other than for the exclusive benefit of his employees or their beneficiaries."

  \- *Internal Revenue Code, § 401(a)(2)*

Fiduciary Principles – Exclusive Benefit Rule *(cont'd)*

- "**A fiduciary shall discharge his duties with respect to a plan**
  - **Solely in the interest of the participants and beneficiaries and**
  - **For the exclusive purpose of:**
    - **Providing benefits to participants and their beneficiaries**
    - **Defraying reasonable expenses of administering the plan"**
      - **These expenses must be plan expenses, not settlor expenses**

- *ERISA*
- *9-16-40(1) and (2) – Standards of Discharge of Duty*

Fiduciary Principles – Prohibited Transactions

- A qualified plan is prohibited from participating in any transaction in which it –

1) "Lends any part of its income or corpus, without receipt of adequate security and a reasonable rate of interest, to;
2) Pays any compensation, in excess of a reasonable allowance for salaries or other compensation for personal services actually rendered, to;
3) Makes any part of its services available on a preferential basis to;

Fiduciary Principles – Prohibited Transactions *(cont'd)*

4) makes any substantial purchase of securities or any other property, for more than adequate consideration in money or money's worth, from;

5) sells any substantial part of its securities or other property, for less than an adequate consideration in money or money's worth, to; or

6) engages in any other transaction which results in a substantial diversion of its income or corpus to;

the creator [of or] a person who has made a substantial contribution to [the trust]…."

- *Internal Revenue Code, § 503(b)*

- *9-1-1340 -- Conflicts of Interest (RSIC)*

- *9-16-350 -- Use of Information for self-interest (RSIC)*

- *9-16-360 -- Standards of conduct for fiduciary or employee of fiduciary (RSIC)*

Prohibited Transactions – Practical Impact on Trustee

- A fiduciary may not:
  - **Deal with plan assets in his own interest.**
  - Act in a transaction with a "party in interest" if adverse to the interests of plan participants.
    - **Any "deals" with the employer (or "funder") must be commercially reasonable, at arms' length.**
  - Receive any consideration for his personal account from any party in connection with a transaction involving the plan.

Fiduciary Principles – Adherence to the Trust

- Administer the trust in accordance with its terms and applicable laws – "Doing things by the book"
  - Set aside pre-conceived notions and work from the facts and from statutes, rules, Board policies and procedures.
  - The plan must be administered as written.
  - Make sure to keep up-to-date with law changes.

Fiduciary Principles – Adherence to the Trust

(cont'd)

- The fiduciary must be aware of the entire legal context, of issues that come before them, including other state and federal laws.

Fiduciary Principles – Co-Trustees

- Duty with respect to co-Trustees from ERISA and from the Restatement
  - Settlor determines areas of responsibility
  - **Each trustee must take reasonable care to prevent a co-trustee from committing a breach of trust and to obtain redress if there is a breach.**
    - **Recognizing RSIC's responsibilities for investments**
    - Consideration by trustees of integrity of process used for decision-making
    - **Duties of care and prudence related to process**
  - PEBA and SFAA are co-trustees of the Retirement System (9-1-1310)

Overall Fiduciary Principles – Care, Skill, Prudence, Diligence

- "With the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims;
  - *ERISA*
  - *9-16-40:* "*. . . With the care, skill, and caution under the circumstances then prevailing which a prudent person in a like capacity and familiar with the matters would use in the conduct of an activity of like character and purpose. . .*"
  - Restatement of Trusts, Third

Duty of Care – Importance of Delegation *(cont'd)*

- Responsibilities that are outside the trustee's skill set
- Secure and consider advice of experts

Duty of Loyalty

- The trustee must conform to "fundamental fiduciary duties of loyalty (Restatement of Trusts, Third §170) and impartiality (Restatement of Trusts, Third §183)."
  - **<u>Balancing the interests of retirees and active participants</u>**
  - **<u>Balancing interests of different groups of participants</u>**
  - Balancing roles with regard to different plans and trusts

Duty of Impartiality

- UMPERSA Commentary: "Differing interests are inevitable in the retirement system setting. Differences can arise between retirees and working members, young members and old, long- and short-term employees, and other groupings of those with interests in the retirement system. The duty of impartiality does not mean that fiduciaries must accommodate such interests according to some notion of absolute equality. The duty of impartiality … requires that such decisions be made carefully and after weighing the differing interests."
- 9-16-40: ". . .Impartially, taking into account any differing interests of participants and beneficiaries. . ."
- Also applies to health insurance and OPEB plans.

Impartiality – Practical Impact on Trustee

- Trustees must identify impact of actions on each plan or trust (in the case of multiple plans or trusts) and on each group of participants and beneficiaries.

Maintaining Independence

- A trustee must set aside the interests of the appointing authority or the group the trustee represents.
  - "It is as improper for a fiduciary to take actions for the purpose of benefiting a third person as it is for a fiduciary to act in its own interest. **In the retirement system setting, it is important to note that this duty includes the obligation to set aside the interests of the party that appoints a trustee or fiduciary. A trustee, for example, must act solely in the interests of participants and beneficiaries and set aside any interest of a party responsible for the trustee's appointment, such as an employer or union**."

    \- *UMPERSA Comments on § 7* (Emphasis added)
  - Significant because South Carolina, in effect, adopted UMPERSA in 9-16-40(1).

Maintaining Independence *(cont'd)*

- UMPERSA "is intended to ensure that retirement system trustees have a level of independence sufficient to permit them to perform their duties and to do so effectively and efficiently. **Trustees are different from other state actors because they are subject to an extensive and stringent set of fiduciary obligations to retirement system participants and beneficiaries**. These obligations both require and justify some level of trustee independence."

- *UMPERSA Comments on § 5.*

Independence – Practical Impact on Trustee

- **Independence comes from following procedural prudence – have established procedures and follow them.**
- Applying lessons from "outside world" is not prohibited, but the overriding principle is to follow the exclusive benefit rule.
  - A trustee must make a decision given the facts and circumstances that are relevant.

Independence – Practical Impact on Trustee

(cont'd)

- One challenge of "independence" for a trustee is to be independent of preconceived notions.

"Chains of habit are too light to be felt until they are too heavy to be broken."

– Warren Buffett

Board's Role as Fiduciary

- Settlor establishes the terms of the trust and the plan.
  - The Settlor = Legislature/State
- Settlor determines the scope of authority of the fiduciaries.
- Each fiduciary must administer the trust and the plan for the benefit of the participants and their beneficiaries in accordance with the role assigned.

Board's Role as Fiduciary *(cont'd)*

- Board's role with regard to benefits
  - Board is responsible for the general administration and proper operation of the plans *(e.g.* 1-11-710, 9-1-210)
  - Administer benefits in accordance with plan
  - Engage actuarial and other experts (*e.g.* 1-11-705(D), 9-1-230)
  - Establish premiums and contribution rates (*e.g.* 1-11-710(2), 9-1-1085)
  - Establish rules and regulations (*e.g.* 1-11-705(F), 9-1-290)

Board's Role as Fiduciary *(cont'd)*

- Board's role with regard to investments:
  - Settlor gave investment responsibility for retirement systems funds to RSIC.
  - But **<u>Board is a co-trustee</u>** of the trust assets
  - **<u>According to the AG, Board has the responsibility to act in the best interests of the trust, including with respect to investments</u>**

"Pay to Play" – Securities and Exchange Commission

- SEC Rule 206(4)-5, adopted in 2010, prohibits investment advisors from providing advisory services, for compensation, for a period of two (2) years following a political contribution to a public official or candidate who is or would be in a position to influence the selection or retention of advisors to manage public pension funds or other government client assets.
- Specifically defines advisors and its "covered associates"
- Also allows a *de minimis* standard ($350 or $150 depending on the election involved)

"Pay to Play" – Securities and Exchange Commission

(cont'd)

- SEC recently settled its first enforcement action (TL Ventures Inc. – a Pennsylvania private equity firm)
- Takeaways:
  - Public plans should have ethics and investment policies which require compliance
  - Policies should require compliance certification from investment advisory providers
  - Ban on transactions with investment advisory providers which violate the Pay to Play Rule
  - Possible requirements in contracts with investment advisors

Additional Ethical Considerations

- *Fifth Third Bancorp v. Dudenhoeffer*
  - Alleged fiduciary breach in 401(k) plan
  - Struck down a presumption of prudence which protected plan fiduciaries in employee stock ownership plan "stock drop" cases
  - Ruled same standard of prudence applies to all ERISA fiduciaries – the prudent expert standard of care
  - Claims in such cases often involve the use of non-public information in complex securities law issues
  - Changing Landscape – DOL's Regulations

Settlor Functions vs. Fiduciary Functions

- Based on DOL Guidance
- Settlor Functions
  - Plan Design / Amendment
  - Plan Termination
  - GASB Required Statements
  - Design Studies and Cost Projections
  - Union Negotiations
  - Consulting
  - Costs associated with evaluating alternatives related to changes in the law
  - Certain corrections under IRS' EPCRS Program

Settlor Functions vs. Fiduciary Functions *(cont'd)*

- Fiduciary / Administrative Functions
  - Implementation of Settlor Decisions
  - Benefit Calculations
  - Routine Nondiscrimination / 415 Testing
  - Amending the Plan to Comply with Tax Law Changes
  - Certain Communication Costs
  - IRS Determination Letter
  - Certain corrections under IRS' EPCRS Program

ERISA

- Supreme Court decision in *Tibble v. Edison International*, 135 S.Ct. 1823 (2015)
  - Reiterated that ERISA fiduciary duty is derived from the common law of trusts.
  - Looked to common law of trusts to find that a trustee has a **continuing duty** – separate and apart from the duty to exercise prudence in selecting investments at the outset – to monitor and remove imprudent investment options.

State Law and Plan/Trust Documents

- Statutes authorizing establishment of retirement plans often set forth fiduciary duties and requirements related to plan vendors and investments.
- Employers frequently voluntarily adopt fiduciary responsibilities in their written plan and trust documents, or investment policy statements.

History of Fee Litigation

Overview

- Fee litigation began over a decade ago, primarily against large private sector companies sponsoring 401(k) plans.
- Over 75 lawsuits filed alleging breaches of fiduciary duty under ERISA.
- Schlichter Bogard & Denton law firm filed many of the lawsuits.
- Mixed success in courts, **BUT** settlements totaling millions – *e.g*. $62 million with Lockhead Martin and $57 million with Boeing.

Prudent Process is Critical

- The focus in these lawsuits is on process, not best possible result.
- The **test of prudence** -

  "is one of conduct, and not a test of the result of performance of the investment. The focus of the inquiry is how the fiduciary acted in his selection of the investment, and not whether his investments succeeded or failed."

- **Document, document, document!**

Stating a Claim

- In *White v. Chevron*, N.D. CA (2016), the court dismissed a complaint alleging breach of fiduciary duty for failure to state a claim finding that plaintiffs failed to cite sufficient facts to support allegations. Court noted:
  - ERISA does not require plan fiduciaries to include any particular mix of investment vehicles in their plan.
  - Prudent process, not results, is the focus.
  - Fiduciary actions not judged from hindsight.
  - Fiduciaries can value investment features other than price.
  - Prudence of investment is assessed not in isolation but as it relates to the portfolio as a whole.
  - ERISA does not prohibit revenue sharing nor require periodic competitive bidding.

Non-ERISA Cases

- Class action lawsuit filed against Portico, the denomination benefit board for the Evangelical Lutheran Church in America (ELCA) in 2015.
  - As a church plan, not subject to ERISA.
  - Complaint asserts breaches of fiduciary duty under state law in selecting funds with unreasonable fees with poor performance, with no prudent process to evaluate whether compensation was reasonable.
  - Claims brought under Minnesota common law and prudent investor act.
  - Suit survived motion to dismiss.

Higher Education Lawsuits

Lawsuit Overview

- In August 2016, 13 separate class action lawsuits were filed against large private universities.
  - 12 filed by the Schlichter law firm
  - 1 filed by Sandford Heisler law firm
- The lawsuits each allege that the universities breached their fiduciary duties under ERISA with respect to their retirement plans' investment structures.

Allegations

- The lawsuits make largely the same allegations, including:
  - Failing to **solicit competitive bids** for recordkeeping and administrative services at regular intervals of approximately three years.
  - Retaining **multiple recordkeepers**, resulting in increased fees.
  - Offering **too many investment options**, resulting in participant confusion.
  - Retaining **poorly performing funds** – like the CREF stock account – because the vendor required the fund to be offered on the platform.

Allegations *(cont'd)*

- The lawsuits make largely the same allegations, including (*cont'd*):
  - Failing to prudently monitor and control the **compensation paid** by the plan for recordkeeping and administrative services, particularly the asset-based revenue sharing received.
  - Failing to engage in a prudent process for the **selection and retention of investment options**, thereby resulting in the selection and retention of more expensive funds that had inferior historical performance compared to investments (both passively and actively managed) that were available to the plan.
  - Using **mutual funds** rather than collective investment funds or separately managed accounts.

Allegations *(cont'd)*

- The lawsuits make largely the same allegations, including (cont'd):
  - Failing to eliminate **duplicative investment options**, thereby depriving plan of bargaining power associated with offering a single option in each investment style.
  - Failing to use leverage to negotiate **lower-cost share classes** for the plan's mutual fund options.
  - Failing to take into account **withdrawal restrictions** on annuity products like TIAA Traditional Annuity.
  - Failing to evaluate **fiduciaries' performance** or to have a system in place for doing so.

403(b) History

- University lawsuits novel because of the history of 403(b) plans, which until fairly recently, were treated by many employers as loosely organized payroll arrangements.
  - Historically, contracts were individually owned
  - Investments are limited to annuities and custodial accounts
  - Multiple recordkeepers are common
  - Service more highly valued by participants
- **BUT fiduciary standards make no distinction based on type of plan**.

Defendant Responses

- Motions to Dismiss have been filed in many of the university cases, arguing that plaintiffs failed to state a claim (similar to *Chevron*):
  - Failure to state any claims of disloyalty.
  - Duty to diversify requires a large array of funds and ERISA encourages participant choice.
  - ERISA does not require fiduciaries to offer cheapest funds, and low cost funds were part of mix.
  - ERISA does not require competitive bids for recordkeepers.

Defendant Responses (cont'd)

- Motions to Dismiss have been filed in many of the university cases, arguing that plaintiffs failed to state a claim (*cont'd*):
  - Lack of standing in failing to allege specific injury to named plaintiffs.
  - Failure to state any facts showing that fiduciary process was deficient.
  - Multiple recordkeepers a common industry approach, as is revenue sharing. Fact that the 12 lawsuits are largely identical demonstrates that universities acted as prudent fiduciaries in similar circumstances.

Keep Monitoring

- Litigation in very early phases.
- Complaints accurately identify some of the historical weaknesses of 403(b) plans (which can also be found in many governmental 401(a) plans).
- Industry is changing rapidly.
- Regardless of outcome, the lawsuits are likely to set new industry standards.

Controlling Fiduciary Liability

Consider: Investment Committee

- **Limit exposure by delegating fiduciary responsibility to an Investment Committee.**
  - Delegation limits fiduciary responsibility to a select, defined group that understands its responsibilities and has authority and resources to meet those responsibilities.
  - Committee responsible for specific delegated responsibilities:
    - Evaluating and monitoring vendors and investment options
    - Adopting investment policy statement
    - Hiring an investment advisor
  - Committee typically has final authority with a reporting function to the Board.

Consider: Committee Charter

- **Make delegated responsibilities clear by adopting a written charter.**
  - A written charter sets forth the manner in which investment committee members are determined and the specific responsibilities of the committee.
  - Board approves, and reserves power to modify.

Consider: Investment Advisor

- **Meet prudent expert standard by hiring an investment advisor or consultant.**
  - Advisor helps committee evaluate vendors and investment options.
  - May want to select advisor through RFP since selection is critical to a prudent process.
  - Typically, the committee would meet with the investment advisor at least quarterly to review the vendor and investment option performance.

Consider: Investment Policy Statement

- **Facilitate compliance by adopting an Investment Policy Statement.**
  - Work with the investment advisor to create and adopt an investment policy statement for the plans or plans.
  - An investment policy statement is a written statement that provides fiduciaries with guidelines or restrictions concerning various types or categories of investment decisions.
  - If multiple plans, the statement may have different criteria for each of the plans given their different purposes and eligibility parameters.

Consider: Vendor RFP/RFI

- **Periodically conduct an RFP/RFI with respect to plan vendors.**
  - Include current and other vendors in an RFP or conduct an RFI with current vendors.
  - Review responses with the assistance of an investment advisor and use of investment policy statement.
  - Make decisions about elimination/replacing vendors.
  - **<u>Best practice is single vendor with best in class options, but may not always be practical</u>.**

Consider: Investment Option Evaluation

- **Conduct ongoing evaluations of investment options.**
  - Work with investment advisor and use investment policy statement.
  - Select core group of funds in different asset classes and lifecycle funds – consider compliance with ERISA 404(c).
  - Select funding vehicles that allow participants to control movement of assets without restriction.
  - Allocation of fees to participants should take into account best practices.

Consider: Participant Communications

- **Carefully and comprehensively communicate rollout of changes to participants.**
  - Explain why review was undertaken, why changes were made, what action is required of participants.
  - Consider following ERISA standards if mapping assets.
  - Clear and effective communication particularly important with respect to participants who need information as to whether to voluntarily transfer to new funds or vendors (if assets cannot be moved by participating employer).

Consider: Ongoing Review

- **Ongoing review to monitor vendors and investment options.**
  - Meet with investment advisor at least quarterly.
  - Use investment policy statement to guide review.
  - Consider plan design features which simplify employee decision making and encourage participation – participants who are retirement ready are less likely to blame plan fiduciaries.
  - **Document, document, document!**

Robert L. Gauss, Partner
ICE MILLER LLP
One American Sq., Suite 2900
Indianapolis, IN 46282-0200
(317) 236-2133 (Telephone)
(317) 592-4668 (Facsimile)

PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
BOARD RETREAT

Meeting Date: November 30, 2016

---

1. Subject: Strategic Planning

---

2. Summary: Strategic Planning

Background Information: Each Committee has reviewed and approved their respective sections related to the 2016-2018 Business Plan which is being presented to the full Board for approval.

3. What is the Board asked to do? Approve the 2016-2018 Business Plan as presented.

---

4. Supporting Documents:

(a) List those attached:
1. 2016-2018 Business Plan
2. 2016-2018 Strategic Plan

Business Plan

2016-2018

south carolina peba

state health plan | retirement systems

Mission

PEBA's mission is to provide competitive retirement and insurance benefit programs for South Carolina public employers, employees and retirees.

Vision

Serving those who serve South Carolina

Core values

Solutions oriented

We anticipate the needs of our members, colleagues and supervisors, and work daily to improve processes and increase customer satisfaction.

Communication

We encourage and facilitate the flow of information, listen effectively and are receptive to constructive feedback.

Credibility

We accept responsibility for our individual jobs and achieving the goals of PEBA. We are accountable, thorough and accurate.

Collaboration

We foster cooperative relationships, and appreciate and respect the contributions of others.

Responsive

We strive to achieve our goals and objectives. We adapt to change. We follow through.

Emotional intelligence

We maintain self-awareness and modify behavior appropriately. We work to build rapport with others and effectively manage and resolve conflict.

Ethical behavior

We value honesty, trust, fairness and consistency.

Strategic goals

At the broadest level, PEBA's goals are to:

Goal one

Promote financially sound PEBA programs

Goal two

Improve health outcomes and promote retirement awareness

Goal three

Enhance the customer experience for members and employers

Goal four

Responsibly manage risk to the organization

Goal five

Maintain a workforce and work environment conducive to achievement of agency goals and objectives

Goal six

Improve internal efficiencies through new system implementation

Goal one

Promote financially sound PEBA programs

PEBA has a responsibility to its stakeholders to control public employee benefit costs while providing maximum benefits. The cost to members and taxpayers is impacted by investment performance, member behavior, competitive developments in relevant labor markets, policy determinations regarding cost-allocations and the willingness to pay of participants and taxpayers.

Key measures

Insurance

- State Health Plan expenditure growth per subscriber is at least two percentage points below the five-year average national benchmark (see key measure 1 in the appendix on Page 17 for actual measure)
- State Health Plan net expenditure per member per month (see key measure 2 in the appendix on Page 17 for actual measure)
- State Health Plan actuarial value ratio (AVR) is equal to or higher than the benchmark of the average of bordering peer plans (Florida, Georgia, North Carolina and Tennessee) and the southeast regional states (see key measure 3 in the appendix on Page 17 for actual measure)
- State Health Plan net expenditure to revenue loss ratio is less than or equal to 1.0 (see key measure 4 in the appendix on Page 17 for actual measure)
- Cumulative cash balance of self-funded health plan reserves is at least 140 percent of current estimated outstanding liability (see key measure 5 in the appendix on Page 17 for actual measure)
- State Health Plan average monthly composite premium is at or below the southeast regional state employee plan average for the employer, enrollee and total premium (see key measure 6 in the appendix on Page 17 for actual measure)

Retirement

- Ensure employer and employee contribution rates are sufficient to maintain a funding period for the Retirement Systems that does not exceed 30 years

Strategy 1.1

Provide the legislature with information to properly determine contributions and funding to ensure long-term viability of benefit programs.

Staff actions

- November 15, 2016 #160
  Communicate the proposed budget requirements for both the State Health Plan and Basic Dental Plan for the 2018 plan year

- July 1, 2017 #102
  Conduct an independent actuarial audit one year after the next scheduled experience study

Strategy 1.2

Research best practices, and recommend and implement health plan design changes.

Staff actions

- February 28, 2017 #189
  Complete a review of the major cost drivers of the State Health Plan and develop methods for improvement
- December 31, 2017 #152
  Evaluate Patient-Centered Medical Home initiative's effectiveness, provider accessibility and member participation; continue to evaluate PCMH cost effectiveness
- December 31, 2017 #188
  Continue to evaluate new opportunities for reference-based pricing strategies and continue a phased-in approach to implement current reference-based pricing

Completed staff actions

- Continued financial analysis of MUSC Health Plan pilot performance; continued to work collaboratively with MUSC on plan management #151
- Developed strategies to address specialty pharmacy spend and to better manage specialty pharmacy sector; continued to work collaboratively with pharmacy and medical contractors #156
- Communicated results of experience study and required contribution rate increases for retirement systems #186
- Completed pharmacy benefits manager contracting process in a timely manner; completed implementation process in a manner which serves the best interest of the SHP and its membership #147
- Implemented reference-based pricing strategy for certain imaging, pathology and endoscopy services commonly performed in non-hospital settings to make pricing more comparable with those other settings and evaluated plan impact related to new strategy #154
- Implemented State Health Plan benefit design incentivizing members to receive care at a network Patient-Centered Medical Home by waiving the $12 office visit copay and reducing the member coinsurance to 10 percent #178

Goal two

Improve health outcomes and promote retirement awareness

PEBA understands the importance of making appropriate changes to health plan design to improve health outcomes and reduce costs, including changes to reduce member behaviors that negatively affect health outcomes. In addition, the agency has a new focus on retirement awareness to ensure that members are aware of the benefits available to them through PEBA-administered plans, as well as options to supplement their benefits.

Key measures

- Maintain overall patient health risk score for non-Medicare primary adult State Health Plan members that is adjusted for demographics (see key measure 1 under "improve member health" in the appendix on Page 18 for actual measure)
- Achieve 10,000 interactions annually with members and employers to promote retirement awareness through the following channels:
  - Online resources (retirement awareness web page)
  - Attendance at early- and mid-career seminars
  - Conversations with members who call the Customer Contact Center
  - Usage of the State ORP vs. defined benefit plan calculator

Strategy 2.1

Promote member engagement with both retirement and insurance programs to ensure members understand benefit options and can make educated decisions and take personal responsibility regarding health and retirement.

Staff actions

- December 31, 2016 #199
  Reach 40 percent of State Health Plan active employees through employer participation in PEBA Health Hub
- December 31, 2016 #200
  Increase unique count of members participating in tobacco cessation program or utilizing tobacco cessation prescription drugs by 5 percent
- December 31, 2016 #201
  Increase rate of State Health Plan members current with colorectal cancer screening by 1.5 percentage points
- January 1, 2017 #61
  Require worksite screening providers to electronically provide biometric data to the plan

- April 1, 2017 #159
  Implement Rally, a new digital platform to help members get and stay healthy through personalized challenges, rewards and content
- June 30, 2017 #203
  Create improved educational materials so that benefits administrators understand and can assist members in making an informed choice between the State Optional Retirement Program and the defined benefit plan
- June 30, 2017 #204
  Develop a more automated enrollment process for the State Optional Retirement Program such that it is easier and more straightforward for employers and members to enroll in the Program
- June 30, 2017 #205
  Update the current South Carolina Retirement System (SCRS) versus State Optional Retirement Program comparison calculator to account for Class III membership criteria and cost-of-living adjustments so that it provides members with the most accurate information possible
- December 31, 2017 #163
  Engage employers to host worksite or regional preventive screenings using participating PEBA screening providers and collaborate with employers using their own screening provider to potentially share biometric data
- December 31, 2017 #190
  Develop a "navigating your benefits" series to provide members with easy-to-use information about their insurance and retirement benefits
- December 31, 2017 #161,162
  Target and engage executive management of our employers in managing the health of their employees and provide ready-to-use resources that promote benefits available to State Health Plan members
- March 31, 2018 #116
  Develop and execute marketing plans and goals for MoneyPlus/cafeteria plan

Completed staff actions

- Identified best practices among other insurance plans regarding improving health outcomes and reducing costs #64
- Defined and measured appropriate benchmarks against both public and private sector insurance plans #65
- Reviewed marketing plans for State Health Plan administrative services, behavioral health, life insurance, long term and supplemental long term disability, vision plan, pharmacy benefits and dental plan #110,112,114,115,118
- Implemented value-based insurance design at no member cost for routine and diagnostic colonoscopies, adult vaccinations recommended by the Centers for

Disease Control, tobacco cessation prescription drugs (Chantix and generic Zyban) and diabetes education #155

- Included retirement awareness presentations on the agency's YouTube channel and incorporated into Field Services' seminars #143,144
- Developed and communicated a wellness scorecard to employers to engage them in managing the health of their employees #78

Goal three

Enhance the customer service experience for members and employers

PEBA aims to provide the best quality service to its stakeholders, including members, dependents and beneficiaries. As such, PEBA strives for continuous improvement of the level of service we provide, as well as those services provided by our third-party administrators.

Key measures

- PEBA's customer satisfaction survey score should be greater than or equal to a 95 percent satisfaction rate for both the Visitor Center and Customer Contact Center (see key measure 4 under "provide positive member experience" in the appendix on Page 18 for actual measure)
- Achieve a 2.5 percent survey completion rate, based on the total number of surveys completed and the total number of calls received per fiscal year
- Trust: members feel the State Health Plan is a plan they can trust.
  Score at least an 8 out of 10 on the BlueCross BlueShield of South Carolina *Consumer Brand Index Survey* where "1" means strongly disagree and "10" means strongly agree (see key measure 1 under "provide positive member experience" in the appendix on Page 18 for actual measure)
- Likelihood to recommend: how likely members are to recommend the State Health Plan to family and friends; score at least an 8 out of 10 on the BlueCross BlueShield of South Carolina *Consumer Brand Index Survey* where "1" means very unlikely to recommend and "10" means likely to recommend (see key measure 2 under "provide positive member experience" in the appendix on Page 18 for actual measure)
- State Health Plan medical third-party administrator customer satisfaction after-call survey average total score is greater than or equal to 4.5 where "1" means very dissatisfied and "5" means very satisfied (see key measure 3 under "provide positive member experience" in the appendix on Page 18 for actual measure)
- Deferred Compensation third-party administrator customer satisfaction after-call survey average total score is greater than or equal to 4.5 where "1" means very dissatisfied and "5" means very satisfied

Strategy 3.1

Implement cost effective integrated systems and processes that are intuitive and practical, and provide value for members and employers.

Staff actions

- December 31, 2016 #127
  Evaluate demand for additional regional services and/or offices
- January 1, 2017 #90
  Implement the Business Transformation Project for the South Carolina Deferred Compensation Program
- June 30, 2017 #63
  Complete requirements for new Governmental Accounting Standards Board other post-employment benefits (OPEB) standards (GASB 74)
- July 1, 2017 #170
  Implement data sharing between PEBA and the third-party record keepers for the State Optional Retirement Program and Deferred Compensation Program in order to simplify enrollment and claims processes for members and employers
- June 30, 2018 #158
  Complete requirements for new Governmental Accounting Standards Board other post-employment benefits (OPEB) standards (GASB 75)

Completed staff actions

- Implemented an updated call management system #135
- Launched a new agency identity to include logo, tagline, colors, templates and identity and style guidelines for staff and vendors #25,106
- Launched a consolidated agency website and implemented a survey feature on the website to solicit feedback from members regarding use and content #142,20
- Developed a comprehensive communications plan #17
- Created an employer advisory group which provides employers a forum to give feedback on processes and improvements related to customer satisfaction #53
- Implemented elimination of revenue sharing to State Optional Retirement Program third-party administrators #103
- Implemented Governmental Accounting Standards Board 67 and 68 by communicating with stakeholders, employers and policy makers on new pension reporting requirements #92

Goal four

Responsibly manage risk to the organization

It is incumbent upon our individual employees and organization to continually assess and mitigate the threats and risks to which we are exposed. Through enterprise risk management, we will plan, organize, lead and control the activities of our organization in order to minimize the effects of risk. This will include financial, strategic and operational risks.

Key measures

- Compliance with state-issued information technology security mandates
- Create a risk-aware methodology for managing third-party vendors

Strategy 4.1

Implement enterprise risk management.

Staff actions

- January 31, 2017 #165
  Create a charter for enterprise risk management
- September 30, 2017 #164
  Develop a risk management framework
- February 28, 2018 #167
  Complete an agency risk assessment

Strategy 4.2

Create a culture of risk awareness through the development, implementation and maintenance of an enterprise risk management program.

Staff actions

- December 31, 2016 #207
  Develop a minimum set of information technology security requirements for vendors
- January 31, 2017 #171
  Develop an information technology security due diligence questionnaire for third-party vendors
- April 30, 2017 #173
  Conduct an information technology security due diligence process on third-party vendors that store, transmit or process PEBA-associated restricted data
- June 30, 2017 #172
  Rank vendors based on information technology security risks; use rankings in ongoing due diligence efforts

Strategy 4.3

Ensure information technology resources are utilized to implement continuing security initiatives.

Staff actions

- December 31, 2016 #191
  Evaluate the need for cyber insurance

Complete staff actions

- Complied with state-issued information security policies #121
- Completed a business continuity plan #44
- Created a security review and practice calendar for internal review #45
- Hired an Enterprise Risk Management and Compliance Director #57
- Engaged external firm to review cyber security risks to the organization #46

Goal five

Maintain a workforce and work environment conducive to achievement of agency goals and objectives

Like many organizations, PEBA is faced with staffing challenges brought on by loss of staff due to retirement and new skills requirements due to advances in technology. We use our Characteristics of High Performance throughout the agency to develop a positive agency culture.

Key measures

- Develop and maintain a workforce plan
- Identify and maintain a pool of viable succession candidates
- Develop and implement individual development plans for succession candidates

Strategy 5.1

Ensure a consistent, viable talent pool that adapts effectively and fulfills business needs for the present and future.

Staff actions

- December 31, 2016 #35
  Map succession needs and actions (positions, retirement eligibility)

Strategy 5.2

Develop and maintain effective training and development programming.

Staff actions

- December 31, 2016 #180
  Develop and deliver "The PEBA Way" training for all employees
- April 28, 2017 #179
  Implement Phase II of onboarding process (includes expansion of education on agency functions and operations)
- 2017 - 2022 #38
  Ensure each operational area has up-to-date written policies and procedures, as well as specific training to be used in cross-training and on-the-job training

Strategy 5.3

Foster an agency culture driven by high performance.

Staff actions

- December 31, 2016 #140
  Research the utilization of bonuses

Strategy 5.4

Ensure a safe, secure and functional physical working environment.

Staff actions

- December 31, 2016 #56
  Execute a long-term facilities plan to include updates to the physical property

Completed staff actions

- Developed and delivered monthly high performance characteristics training #181
- Implemented Phase I of onboarding process (includes new employee education of immediate compliance and awareness issues) #32
- Assessed, identified and delivered employee and organizational training and development opportunities #30
- Conducted employee satisfaction and engagement survey every two years #176
- Created an Employer Services unit #52
- Hired a Director of Employer Services #52
- Hired an Insurance Policy Director #67
- Hired a Training and Development Director #30
- Developed characteristics of high performance #39
- Integrated characteristics of high performance into performance management process and performance compensation policy #39
- Updated signage in building and on Highway 277 to better identify PEBA for visitors #123
- Retained services of the Bureau of Protective Services to provide full-time security for the PEBA campus #198
- Received required approval to replace HVAC system and carpeting for building 202 #197

Goal six

Improve internal efficiencies through new system implementation

PEBA is challenged with aging information systems. Operational systems and business processes are being assessed with assistance from benefits administration experts to create a roadmap for securing internal efficiencies through new technology. This system implementation project will be a multi-year endeavor requiring intensive capital and human resources.

Key measures

- Successfully transition all custom software programs written in Natural to a new technology with an expected life of at least 15 years
- Accomplish implementation with minimal service disruption to members and employers; meet project implementation milestone deliverables
- Complete transition on-budget

Strategy 6.1

Conduct and maintain multi-phase initiatives to generate system and operational changes to improve internal efficiencies.

Staff actions

- January 31, 2017 #177
  Award contract for client support services
- June 30, 2017 #187
  Identify and collaborate with business units to implement process improvements specific to data integrity and operational efficiencies prior to new system implementation
- September 30, 2017 #183
  Define, develop and release a request for proposal to procure new benefits administration system
- November 30, 2017 #184
  Define, develop and release a request for proposal and award contract to data migration vendor
- January 31, 2018 #185
  Award contract to vendor for new system implementation

Completed staff actions

- Defined, developed and released a request for proposal for client support services #182
- Completed phase three of the operational assessment to include a high-level roadmap, cost benefit analysis, recommendations for implementation projects, budget requirements and a final assessment report #42
- Completed phase two of the operational assessment to include a future business flow document, high-level design of future systems and alternative proposal solution #41
- Completed phase one of the operational assessment #40

Goal: Financially sustainable

Key measures:

1. State Health Plan expenditure growth per member is at least two percentage points below the five year average national benchmark. (annual)

	2011	2012	2013	2014	2015 (12/16)	5 year avg.
State Health Plan	2.3%	6.4%	4.0%	-1.4%	9.0%	4.1%
National benchmark	6.7%	6.5%	5.6%	8.0%	8.1%	7.0%

Source: Most recent Segal Health Plan Cost Survey.

This measures year over year SHP expenditure growth compared to national benchmark.

2. State Health Plan net expenditure per member per month (PMPM). (annual)

	PMPM
2014 (12-15)	$328.68
2015 (12-15)	$356.99

Source: PEBA

This measures, on an incurred basis, the SHP net expenditure per member per month. This PMPM amount takes into account all expenditures (claims and administrative) offset by pharmacy rebates and subsidies.

3. State Health Plan Actuarial Value Ratio (AVR) is equal to or higher than the benchmark of the average of bordering peer plans (North Carolina, Georgia, Florida and Tennessee) and the southeast regional states. (annual)

	2016 Actuarial Value Ratio
State Health Plan-Standard Plan option	80.2
Average of bordering peer plans	79.02
All southern states MEP	73.758

Source: Benefit design for each plan applied to the Centers for Medicare and Medicaid Service's 2015 Actuarial Calculator.

This measure illustrates the portion the Plan pays of the total allowable amount taking into account patient cost-sharing elements such as deductibles, coinsurance, and copayments.

4. State Health Plan net expenditure to revenue loss ratio is less than or equal to 1.0. (annual)

	2015 incurred claims paid through 03.31.16
2015 State Health Plan	0.965

Source: PEBA

This measure provides a method of monitoring Plan expenses as compared to Plan revenue.

5. Cumulative cash balance of self-funded health plan reserves is at least 140 percent of current estimated outstanding liability. (annual)

	As of 12.31.15	Cash balance compared to estimated outstanding liability
SHP cash balance	$272,990,827	186%
Outstanding liability	$146,695,978	

Source: PEBA, quarterly GRS IBNR report

This measure illustrates the amount of cash reserves available for claims payment and for any unexpected claims fluctuation.

6. State Health Plan monthly composite premium at or below the southeast state plan average for employer, enrollee and total premium. (annual)

2016	Employer composite premium	% of southern regional	Enrollee composite premium	% of southern regional	Total composite premium	% of southern regional
State Health Plan	$510.60	77.2%	$159.51	91.3%	$670.11	80.2%
Southern regional states	$661.20		$174.80		$830.00	

Source: PEBA 2016 50-State Survey

This measure illustrates contribution efficiency of the employer, enrollee and total premium compared to peers in the southern regional states.

Goal: Improve member health

Key measure:

1. Maintain overall patient health risk score for non-Medicare primary adult State Health Plan members that is adjusted for demographics. (annual)

	2011		2012		2015	
Risk Level	Risk Score	Percentage of Population	Risk Score	Percentage of Population	Risk Score	Percentage of Population
Low Risk	0.4757	22.70%	0.4172	22.10%	0.4160	23.50%
Medium Risk	1.4429	66.10%	1.3942	66.40%	1.4047	65.80%
High Risk	4.7305	11.20%	4.5589	11.50%	4.4710	10.70%
Overall Risk	1.5651	100%	1.5148	100%	1.4665	100%

Source: SHP eligibility and claims data evaluated using Johns Hopkins Adjusted Clinical Grouper 10.0.

This measure quantifies the prospective (in the next year) risk for adult, non-Medicare State Health Plan members compared to the overall non-elderly (age less than sixty- five) United States population.

Goal: Provide positive member experience:

Key measures:

1. Trust: members understand the plan and perceive that the benefits are delivered in accordance with that understanding relative to access to care and member cost share: score at least an 8 out of 10 where "1" means strongly disagree and "10" means strongly agree. (annual)

	2014		2015	
	Survey score	Participants	Survey score	Participants
State Health Plan	8.1	322	8.3	277
System average	8.2	N/A	8.1	N/A

2. Likelihood to recommend: how likely members are to recommend the State Health Plan to family and friends; score at least an 8 out of 10 where "1" means very unlikely to recommend and "10" means very likely to recommend. (annual)

	2014		2015	
	Survey score	Participants	Survey score	Participants
State Health Plan	8.1	322	8.3	277
System average	8.2	N/A	8.1	N/A

Source: 2015 BCBS Consumer Brand Index Survey- this survey is an index of measures developed by the BlueCross Association in collaboration with the American Customer Satisfaction Index (ACSI). This survey is designed to measure business outcomes of customer experience such as loyalty and retention. The survey is conducted by the BlueCross Association and members from each BlueCross Plan are surveyed twice a year. State Health Plan survey participation numbers statistically valid with a 95% confidence level.

3. State Health Plan Medical Third Party Administrator Customer Satisfaction After-Call Survey average total score is greater than or equal to 4.5 where "1" means very dissatisfied and "5" means very satisfied. (annual)

	2015 survey score
BCBSSC	4.5

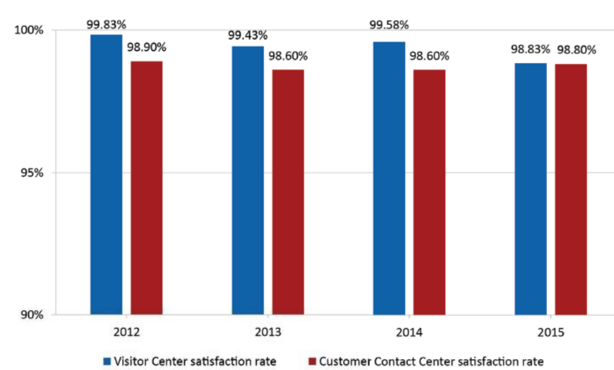
Source: 2015 BCBSSC State Health Plan After-Call survey – this brief six question survey is offered after each customer service call to a BCBSSC Customer Service representative.

4. PEBA Customer Satisfaction survey score should be greater than or equal to a 95 percent satisfaction rate for both the Visitor and Customer Contact Center. (annual)

Customer Satisfaction

Visitor Center survey results procedure changed in November 2013 to begin using automated email surveys.

Source: 2015 PEBA Customer Satisfaction survey.



Strategic Plan

2016-2018

south carolina peba

state health plan | retirement systems

Mission

PEBA's mission is to provide competitive retirement and insurance benefit programs for South Carolina public employers, employees and retirees.

Vision

Serving those who serve South Carolina

Core values

Solutions oriented

We anticipate the needs of our members, colleagues and supervisors, and work daily to improve processes and increase customer satisfaction.

Communication

We encourage and facilitate the flow of information, listen effectively and are receptive to constructive feedback.

Credibility

We accept responsibility for our individual jobs and achieving the goals of PEBA. We are accountable, thorough and accurate.

Collaboration

We foster cooperative relationships, and appreciate and respect the contributions of others.

Responsive

We strive to achieve our goals and objectives. We adapt to change. We follow through.

Emotional intelligence

We maintain self-awareness and modify behavior appropriately. We work to build rapport with others and effectively manage and resolve conflict.

Ethical behavior

We value honesty, trust, fairness and consistency.

Strategic goals

At the broadest level, PEBA's goals are to:

Goal one

Promote financially sound PEBA programs

Goal two

Improve health outcomes and promote retirement awareness

Goal three

Enhance the customer experience for members and employers

Goal four

Responsibly manage risk to the organization

Goal five

Maintain a workforce and work environment conducive to achievement of agency goals and objectives

Goal six

Improve internal efficiencies through new system implementation

Goal one

Promote financially sound PEBA programs

PEBA has a responsibility to its stakeholders to control public employee benefit costs while providing maximum benefits. The cost to members and taxpayers is impacted by investment performance, member behavior, competitive developments in relevant labor markets, policy determinations regarding cost-allocations and the willingness to pay of participants and taxpayers.

Strategy 1.1

Provide the legislature with information to properly determine contributions and funding to ensure long-term viability of benefit programs.

Strategy 1.2

Research best practices, and recommend and implement health plan design changes.

Goal two

Improve health outcomes and promote retirement awareness

PEBA understands the importance of making appropriate changes to health plan design to improve health outcomes and reduce costs, including changes to reduce member behaviors that negatively affect health outcomes. In addition, the agency has a new focus on retirement awareness to ensure that members are aware of the benefits available to them through PEBA-administered plans, as well as options to supplement their benefits.

Strategy 2.1

Promote member engagement with both retirement and insurance programs to ensure members understand benefit options and can make educated decisions and take personal responsibility regarding health and retirement.

Goal three

Enhance the customer service experience for members and employers

PEBA aims to provide the best quality service to its stakeholders, including members, dependents and beneficiaries. As such, PEBA strives for continuous improvement of the level of service we provide, as well as those services provided by our third-party administrators.

Strategy 3.1

Implement cost effective integrated systems and processes that are intuitive, practical and provide value for members and employers.

Goal four

Responsibly manage risk to the organization

It is incumbent upon our individual employees and organization to continually assess and mitigate the threats and risks to which we are exposed. Through enterprise risk management, we will plan, organize, lead and control the activities of our organization in order to minimize the effects of risk. This will include financial, strategic and operational risks.

Strategy 4.1

Implement enterprise risk management.

Strategy 4.2

Create a culture of risk awareness through the development, implementation and maintenance of an Enterprise Risk Management (ERM) program.

Strategy 4.3

Ensure information technology resources are utilized to implement continuing security initiatives.

Goal five

Maintain a workforce and work environment conducive to achievement of agency goals and objectives

Like many organizations, PEBA is faced with staffing challenges brought on by loss of staff due to retirement and new skills requirements due to advances in technology. We utilize our Characteristics of High Performance throughout the agency to develop a positive agency culture.

Strategy 5.1

Ensure a consistent, viable talent pool that adapts effectively and fulfills business needs for the present and future.

Strategy 5.2

Develop and maintain effective training and development programming.

Strategy 5.3

Foster an agency culture driven by high performance.

Strategy 5.4

Ensure a safe, secure and functional physical working environment.

Goal six

Improve internal efficiencies through new system implementation

PEBA is challenged with aging information systems. Operational systems and business processes are being assessed with assistance from benefits administration experts to create a roadmap for securing internal efficiencies through new technology. This system implementation project will be a multi-year endeavor requiring intensive capital and human resources.

Strategy 6.1

Conduct and maintain multi-phase initiatives to generate system and operational changes to improve internal efficiencies.

PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM
BOARD RETREAT

Meeting Date: November 30, 2016

---

1. Subject: Ethics Training

---

2. Summary: Ethics Training

Background Information: An educational presentation by Michael Burchstead from the SC State Ethics Commission as part of the Funston Recommendations.

3. What is the Board asked to do? Receive as information

---

4. Supporting Documents:

(a) List those attached:
1. State Ethics Act: Presentation to PEBA Board

State Ethics Act:
Presentation to PEBA Board

Michael R. Burchstead
General Counsel, S.C. State Ethics Commission
November 30, 2016

The Ethics Act

The Ethics Act of 1991

- The Ethics, Government Accountability, and Campaign Reform Act of 1991.
  - Passed in 1991 in the wake of Operation Lost Trust.
  - Amended in 1995, 2003, 2008, 2011, and 2016.
  - Regulations went into effect in 1997.
  - Pending legislation in the General Assembly.

Ethics Commission jurisdiction

- Four subject areas of Ethics Act
  - **Rules of Conduct (§ 8-13-700 through 8-13-795)**
  - **Financial Disclosure (§ 8-13-1110 through 8-13-1180)**
  - Campaign practices (§ 8-13-1300 through 8-13-1374)
  - Lobbyist/Lobbyist's Principals (§ 2-17-5 through 2-17-150)

Recent Legislation

H.3184

- Key provisions:

  - Ethics Commission now investigates allegations of misconduct against members of the General Assembly
    - Ethics Commission makes probable cause. The House or Senate Ethics Committees can still reject the findings.

  - The Commission is reconstituted as of April 1, 2017.
    - Current Commission makeup: 9 members, all appointed by the Governor.
    - New Commission: 8 members, 4 by the Governor, 2 by the House (majority and minority), 2 by the Senate (majority and minority).

H.3186

- **Contents of statement of economic interests**
- SECTION 1. Section 8-13-1120(A) of the 1976 Code, as last amended by Act 6 of 1995, is further amended by adding:
- "(10) a listing of the private source and type of any income received in the previous year by the filer or a member of his immediate family. This item does not include income received pursuant to:
- (a) a court order;
- (b) a savings, checking, or brokerage account with a bank, savings and loan, or other licensed financial institution which offers savings, checking, or brokerage accounts in the ordinary course of its business and on terms and interest rates generally available to a member of the general public without regard to status as a public official, public member, or public employee;
- (c) a mutual fund or similar fund in which an investment company invests its shareholders' money in a diversified selection of securities.“

- **Income defined, exclusions**
- SECTION 2. Section 8-13-1120 of the 1976 Code, as last amended by Act 6 of 1995, is further amended by adding:
- "(C) For purposes of this section, income means anything of value received, which must be reported on a form used by the Internal Revenue Service for the reporting or disclosure of income received by an individual or a business. Income does not include retirement, annuity, pension, IRA, disability, or deferred compensation payments received by the filer or filer's immediate family member."

Financial Disclosure

Statements of Economic Interests

- Section 8-13-1110
  - Statement of Economic Interests to be filed upon entering official responsibilities and then on or before March 30th by noon of each year of service.
- Section 8-13-1120
  - In general, income received from the government is required – not income received from private sources.
  - (2) "the source, type, and amount of value of income, not to include tax refunds, of substantial monetary value received from a governmental entity by the filer or a member of the filer's immediate family…."
  - (7) Any associations with lobbyists
  - (8) "if a public official…receives compensation from an individual or business which contracts with the governmental entity with which the public official…serves…, the public official must report the name and address of that individual or business and the amount of compensation paid to the public official…by that individual or business."
  - (9) source and description of any gifts received during the previous calendar year (Note conflict with 710)

Rules of Conduct

Definitions

- **“Economic interest”** (Section 8-13-100(11))
  - Interest distinct from that of the general public.
  - Large class exception. If the only economic interest realized is that which would be realized as a member of a “profession, occupation, or large class,” then the public official, public member, or public employee may participate in the decision.
- **“Family member”** (Section 8-13-100(15))
  - Includes a member of the person’s immediate family, also: spouse, parent, brother, sister, child, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, sister-in-law, grandparent, or grandchild.
  - Amended in 2011 to include in-laws.
- **“Individual with whom he is associated.”** (Section 8-13-100(21))
  - “Individual with whom the person or a member of his immediate family mutually has an interest in any business of which the person or a member of his immediate family is a director, officer, owner, employee, compensated agent, or holder of stock worth one hundred thousand dollars or more at fair market value and which constitutes five percent or more of the total outstanding stock of any class.”
- **“Business with which he is associated.”** Section 8-13-100(4)
  - “Business of which the person or a member of his immediate family is a director, an officer, owner, employee, a compensated agent, or holder of stock worth one hundred thousand dollars or more at fair market value and which constitutes five percent or more of the total outstanding stock of any class.”
  - If you or your spouse is employed by a company, that is a business with which you are associated.
  - “Governmental entity” not a business.

700 violations

- Section 8-13-700(A)
  - “No public official, public member, or public employee may knowingly use his official office, membership, or employment to obtain an economic interest for himself, a family member, an individual with whom he is associated, or a business with which he is associated.”
  - Exception for incidental use not resulting in additional public expense.
- Section 8-13-700(B)
  - “No public official, public member, or public employee may make, participate in making, or in any way attempt to use his office, membership, or employment to influence a governmental decision in which he, a family member, an individual with whom he is associated, or a business with which he is associated has an economic interest.” “

Recusal provision of 700(B)

- Section 8-13-700(B)(continued)
  - "A public official, public member, or public employee who, in the discharge of his official responsibilities, is required to take an action or make a decision which affects an economic interest of himself, a family member, an individual with whom he is associated, or a business with which he is associated shall:

    (1) prepare a written statement describing the matter requiring action or decisions and the nature of his potential conflict of interest with respect to the action or decision;

    …

    (3) if he is a public employee, he shall furnish a copy of the statement to his superior, if any, who shall assign the matter to another employee who does not have a potential conflict of interest. If he has no immediate superior, he shall take the action prescribed by the State Ethics Commission;

    (4) if he is a public official, other than a member of the General Assembly, he shall furnish a copy of the statement to the presiding officer of the governing body of an agency, commission, board, or of a county, municipality, or a political subdivision thereof, on which he serves, who shall cause the statement to be printed in the minutes and require that the member be excused from any votes, deliberations, and other actions on the matter on which the potential conflict of interest exists and shall cause the disqualification and the reasons for it to be noted in the minutes;

Prohibition on representation

- (3) A public member occupying statewide office, an individual with whom he is associated, or a business with which he is associated may not knowingly represent another person before the same unit or division of the governmental entity for which the public member has official responsibility, except as otherwise required by law.
- …
- (7) The restrictions set forth in items (1) through (6) of this subsection do not apply to:
- (a) purely ministerial matters which do not require discretion on the part of the governmental entity before which the public official, public member, or public employee is appearing;
- (b) representation by a public official, public member, or public employee in the course of the public official's, public member's, or public employee's official duties;
- (c) representation by the public official, public member, or public employee in matters relating to the public official's, public member's or public employee's personal affairs or the personal affairs of the public official's, public member's, or public employee's immediate family.

Other Rules of Conduct provisions

- **Section 8-13-705**
  - May not receive or give anything of value with intent to influence.
  - “Anything of value is defined in Section 8-13-100(1) (laundry list)

Section 8-13-100:
(b) "Anything of value" or "thing of value" does not mean:

(i) printed informational or promotional material, not to exceed ten dollars in monetary value;

(ii) items of nominal value, not to exceed ten dollars, containing or displaying promotional material;

(iii) a personalized plaque or trophy with a value that does not exceed one hundred fifty dollars;

(iv) educational material of a nominal value directly related to the public official's, public member's, or public employee's official responsibilities;

(v) an honorary degree bestowed upon a public official, public member, or public employee by a public or private university or college;

(vi) promotional or marketing items offered to the general public on the same terms and conditions without regard to status as a public official or public employee; or

(vii) a campaign contribution properly received and reported under the provisions of this chapter.

Other Rules of Conduct provisions

- **Section 8-13-715**
  - May not accept an honorarium for speaking engagements in one’s official capacity. May accept payment for actual expenses.
- **Section 8-13-720**
  - May not accept additional money for assistance given while performing one’s duty.
- **Section 8-13-725**
  - May not use confidential information gained through employment for personal gain.
- **Section 8-13-750**
  - May not cause the employment, promotion, or transfer of a family member to a position in which one supervises. Prohibits discipline of one’s family member.
- **Section 8-13-755 and 760**
  - Post employment restrictions

Campaign Practices

Public Resources and Elections

- Public employees or officials may not engage in any activity on public time or using public resources to promote or oppose a certain vote.
- Section 8-13-1346
  - (A) A person may not use or authorize the use of public funds, property, or time to influence the outcome of an election.
  - (B) This section does not prohibit the incidental use of time and materials for preparation of a newsletter reporting activities of the body of which a public official is a member.
  - (C) This section does not prohibit the expenditure of public resources by a governmental entity to prepare informational materials, conduct public meetings, or respond to news media or citizens' inquiries concerning a ballot measure affecting that governmental entity; however, a governmental entity may not use public funds, property, or time in an attempt to influence the outcome of a ballot measure.
- See also: Section 8-13-765
  - (A) No person may use government personnel, equipment, materials, or an office building in an election campaign. The provisions of this subsection do not apply to a public official's use of an official residence.

Confidentiality

Confidentiality

- S.C. Code Ann. 8-13-320(10)(g):
  - All investigations, inquiries, hearings, and accompanying documents must remain confidential until a finding of probable cause or dismissal unless the respondent waives the right to confidentiality. The wilful release of confidential information is a misdemeanor, and any person releasing confidential information, upon conviction, must be fined not more than one thousand dollars or imprisoned not more than one year.
- S.C. Code Ann. Regs. 52-718
  - (A) No person associated with a complaint…shall mention the existence of the proceedings or disclose any information pertaining thereto except to persons directly involved including witness and potential witnesses, and then only to the extent necessary for investigation and disposition of the complaint. Witnesses and potential witnesses shall be bound by these confidentiality provisions.
  - (B)The Respondent may waive the confidentiality of the proceeding in writing filed with the Commission.

Penalties

Penalties for Violation of Ethics Act

- Late filing penalties for Statements of Economic Interests and Campaign Disclosure forms set by statute. Section 8-13-1510
  - <u>Penalties are per late form – penalties can build up quickly</u>
  - $100 if not filed within five days.
  - If compliance not met, after the Ethics Commission provides notice by certified mail:
    - $10 a day for 10 days
    - $100 a day after that until compliance met or maximum penalty of $5,000 reached.
    - Previously there was no maximum

- Penalty set at $2,000 for violations that are not categorized as non-compliance.

- In addition to penalties set by statute, the Commission may levy fines and administrative fees, and may issue a public reprimand

Conclusion

- If you have any doubt as to whether a course of conduct will be a problem, you may seek an advisory opinion from the Commission.
- Anyone subject to the Act may request the opinion
- Email: mburchstead@ethics.sc.gov
- Direct line: (803) 929-2503