

## Meeting Agenda

**| Health Care Policy Committee | Finance, Administration, Audit and Compliance Committee  
| Retirement Policy Committee | Board of Directors**

**Wednesday, December 4, 2024 | 202 Arbor Lake Drive., Columbia, SC 29223 | 1<sup>st</sup> Floor Conference Room**

### **Board of Directors | 1:00 p.m.**

- I. Call to Order
- II. Approval of Meeting Minutes- October 23, 2024
- III. Executive Session for the Purpose of Discussing Information Security Pursuant to S.C. Code of Laws § 30-4-70(a)(3).
- IV. Presentation of the 2024 Actuarial Valuations by the External Actuary
- V. Financial Statements Audit Review by the External Auditor
- VI. 2025 Board Meeting Schedule Review and Approval
- VII. Committee Reports
  - i. Health Care Policy Committee
  - ii. Finance, Administration, Audit and Compliance Committee
  - iii. Retirement Policy Committee
    - a) Defined Contribution Plan Fund Change Recommendation
- IV. Old Business
  - i. Director's Report
  - ii. RoundTable Discussion
- V. Adjournment

### ***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 MEETING**

**Meeting Date:** December 4, 2024

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**1. Subject:** Presentation of the 2024 Actuarial Valuations

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**2. Summary:** PEBA's actuaries from Gabriel Roeder Smith & Company (GRS) will present the results of the annual actuarial valuations of the South Carolina Retirement System (SCRS), the South Carolina Police Officers' Retirement System (PORS), the Retirement System for Judges and Solicitors of the State of South Carolina (JSRS), the Retirement System for Members of the General Assembly of the State of South Carolina (GARS), and the South Carolina National Guard Retirement System (SCNG) as of July 1, 2024.

In addition, GRS will present their final recommendation for the assumed rate of investment return for the four-year period beginning July 1, 2025, to be submitted by the PEBA Board to the General Assembly pursuant to Section 9-16-335 of the South Carolina Code of Laws.

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**3. What is the Board asked to do?** (1) Receive as information the actuarial valuations of SCRS, PORS, JSRS, GARS, and SCNG as of July 1, 2024, and adopt the employer contributions for JSRS, GARS, and SCNG as recommended therein, to be effective July 1, 2025;

(2) Submit the actuaries' recommendation to maintain the assumed rate of investment return for the Retirement Systems' assets at 7.00% to the General Assembly as the proposed assumed rate of return required by Section 9-16-335 of the Code of Laws.

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**4. Supporting Documents:**

(a) List those attached:

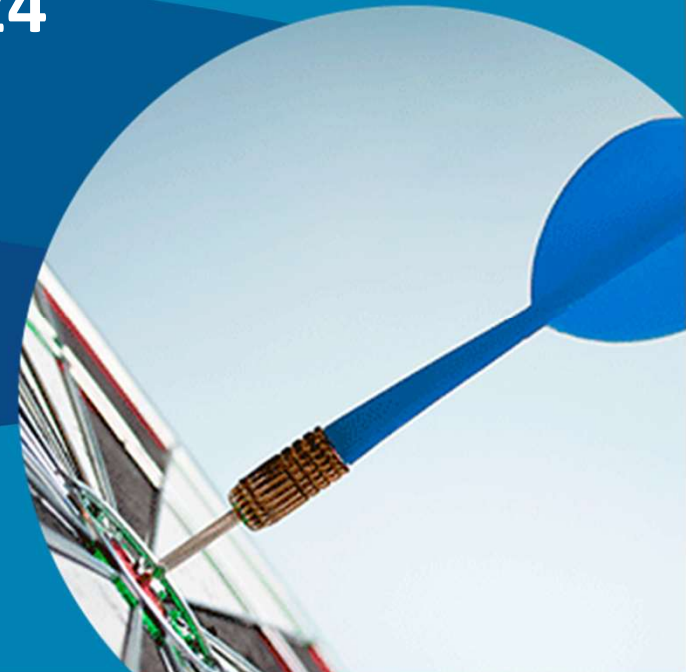
1. GRS Presentation for the 2024 Actuarial Valuations
2. SCRS Actuarial Valuation Report as of July 1, 2024
3. PORS Actuarial Valuation Report as of July 1, 2024
4. JSRS Actuarial Valuation Report as of July 1, 2024
5. GARS Actuarial Valuation Report as of July 1, 2024
6. SCNG Actuarial Valuation Report as of July 1, 2024
7. GRS Assumed Rate of Return Recommendation dated November 20, 2024



# South Carolina Public Employee Benefit Authority

## Actuarial Valuation as of July 1, 2024

Thomas Lyle, FSA, EA, MAAA  
Danny White, FSA, EA, MAAA  
December 4, 2024



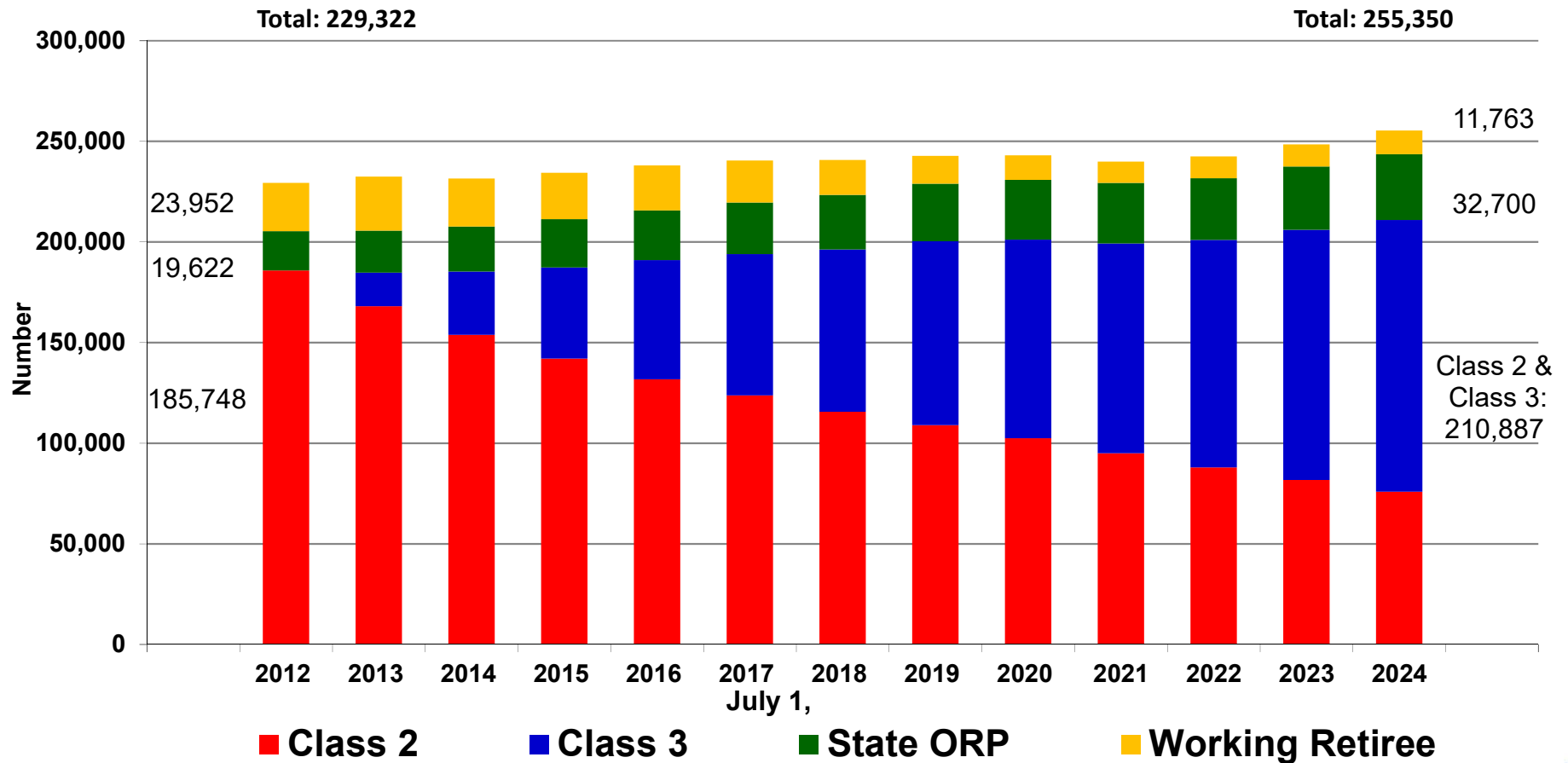
# Agenda

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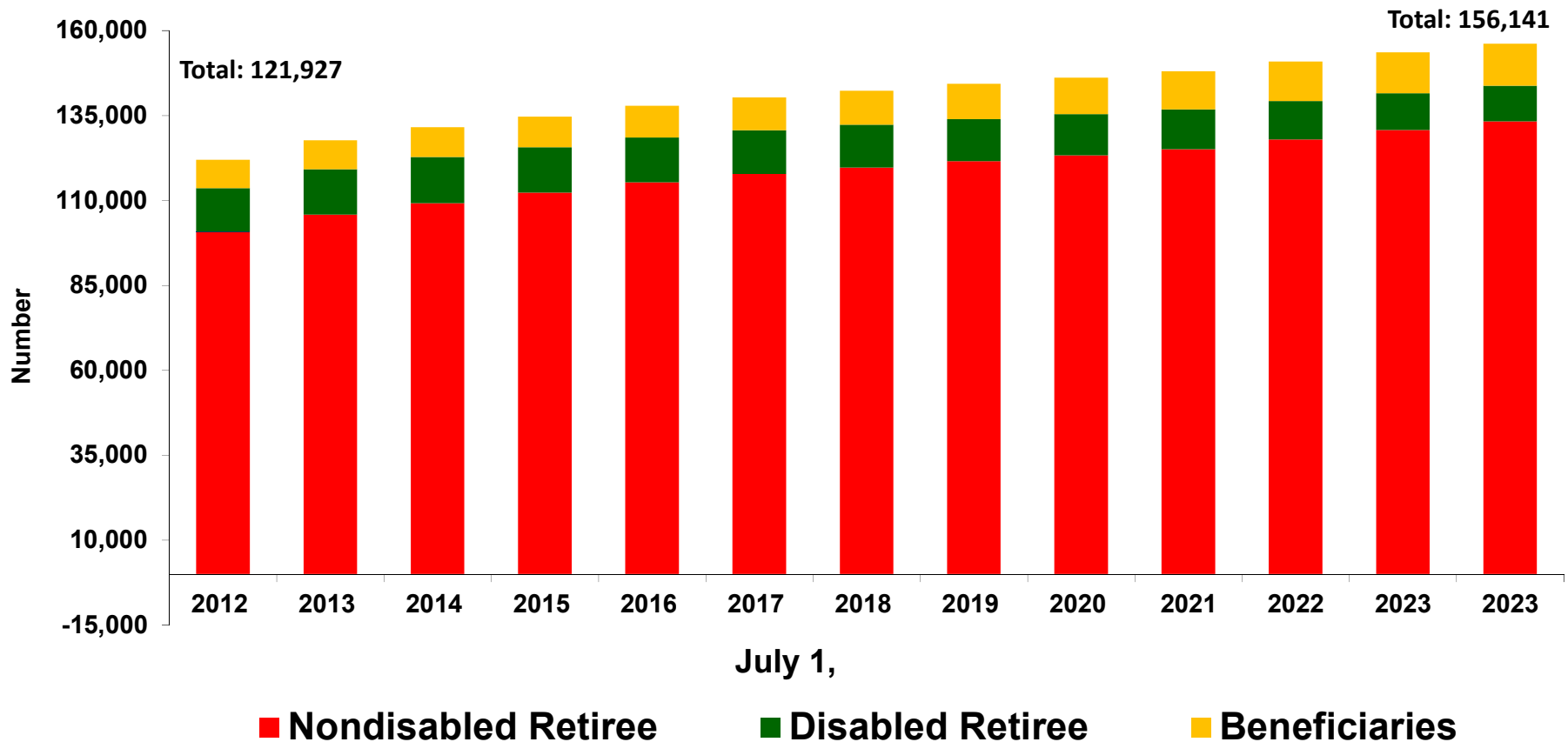
- Summary of Historical Demographics
- 2024 Valuation Results
- Projection Information for SCRS and PORS

# Contributing Membership - SCRS

Currently 60% of Active Members in SCRS are Class 3

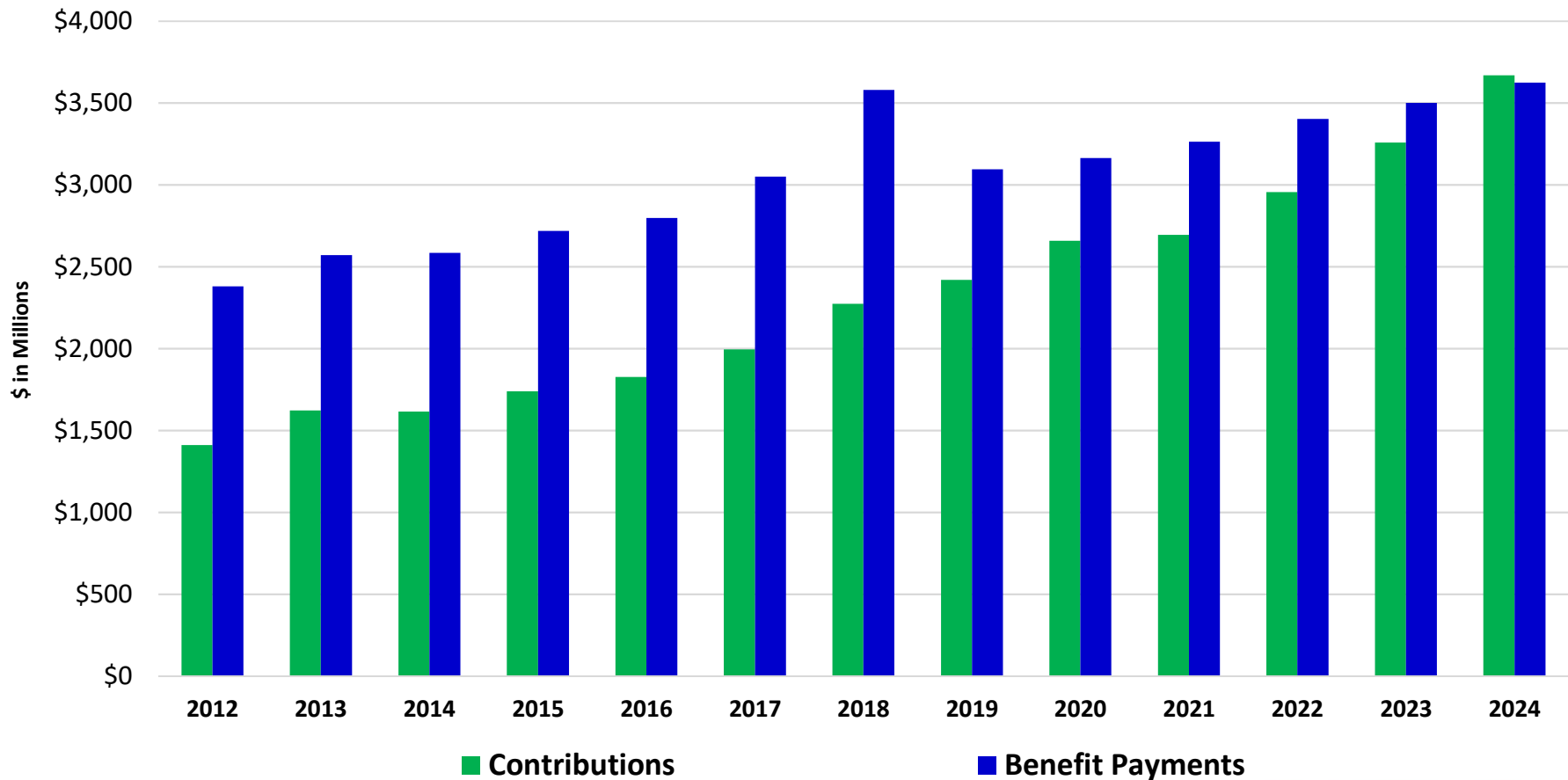


# Members Collecting a Benefit- SCRS



# Contributions and Benefit Payments - SCRS

## Total Contributions Vs Benefit Payments



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# 2024 Valuation Results





# Summary of Changes Since the Prior Valuation

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- 10.5% market investment return for FY 2024
  - \$1.186 billion more than expected for SCRS
  - \$0.222 billion more than expected for PORS
- Notable experience
  - This valuation incorporates the assumptions adopted by the Board in June 2024
  - Active membership in SCRS increased 2.4% and the covered payroll increased 8.0% over the prior year
  - Active membership in PORS increased 3.9% and the covered payroll increased 18.5% over the prior year

# Summary of July 1, 2024 Valuation Results – SCRS and PORS (\$ in millions)

Item	SCRS		PORS	
	2024	2023	2024	2023
(1)	(2)	(3)	(4)	(5)
Actuarial accrued liability	\$62,139	\$59,164	\$10,387	\$9,707
Actuarial (smoothed) value assets	<u>37,016</u>	<u>34,254</u>	<u>7,010</u>	<u>6,401</u>
Unfunded liability (UAAL)	\$25,123	\$24,910	\$3,377	\$3,306
Funded ratio	60%	58%	68%	66%
Member contribution rate	9.00%	9.00%	9.75%	9.75%
Employer contribution rate next FY	<u>18.56%</u>	<u>18.56%</u>	<u>21.24%</u>	<u>21.24%</u>
Total contribution rate	27.56%	27.56%	30.99%	30.99%
Calculated funding period (based on FY 2025 contribution rate)	14 Years	16 Years	13 Years	16 Years
Expected contributions (actual for prior year)				
Member	\$1,120	\$1,117	\$202	\$198
Employer	2,596	2,552	430	420



# FY 2024 Salary Increase for Continuing Actives – SCRS

Public School							State						
Years of Service	Count	Actual FY2023 Pay	Actual FY2024 Pay	Expected FY2024 Pay	Actual % Increase	Expected % Increase	Years of Service	Count	Actual FY2023 Pay	Actual FY2024 Pay	Expected FY2024 Pay	Actual % Increase	Expected % Increase
0-4	24,982	\$ 905	\$ 1,030	\$ 986	13.8%	9.0%	0-4	21,023	\$ 994	\$ 1,123	\$ 1,069	13.0%	7.5%
5-9	17,451	814	885	853	8.8%	4.8%	5-9	10,182	588	649	613	10.3%	4.2%
10-14	11,438	618	666	643	7.7%	4.0%	10-14	5,823	388	424	402	9.4%	3.6%
15-19	11,208	666	709	688	6.6%	3.4%	15-19	5,302	360	394	373	9.4%	3.5%
20-24	8,659	568	604	586	6.2%	3.0%	20-24	4,128	295	319	304	8.2%	3.0%
25-29	5,161	372	396	383	6.5%	3.0%	25-29	2,629	193	209	199	8.4%	3.0%
30-34	975	75	80	77	6.2%	3.0%	30-34	1,225	92	99	95	8.0%	3.0%
>35	327	24	26	25	5.8%	3.0%	>35	562	48	51	50	6.5%	3.0%
<b>Grand Total</b>	<b>80,201</b>	<b>\$ 4,041</b>	<b>\$ 4,394</b>	<b>\$ 4,241</b>	<b>8.7%</b>	<b>4.9%</b>	<b>Grand Total</b>	<b>50,874</b>	<b>\$ 2,958</b>	<b>\$ 3,270</b>	<b>\$ 3,103</b>	<b>10.5%</b>	<b>4.9%</b>

Other Agency							All Groups Combined						
Years of Service	Count	Actual FY2023 Pay	Actual FY2024 Pay	Expected FY2024 Pay	Actual % Increase	Expected % Increase	Years of Service	Count	Actual FY2023 Pay	Actual FY2024 Pay	Expected FY2024 Pay	Actual % Increase	Expected % Increase
0-4	18,878	\$ 777	\$ 861	\$ 835	10.8%	7.5%	0-4	64,883	\$ 2,676	\$ 3,015	\$ 2,890	12.7%	8.0%
5-9	10,281	571	608	595	6.5%	4.2%	5-9	37,914	1,973	2,142	2,061	8.6%	4.5%
10-14	6,143	398	419	412	5.3%	3.6%	10-14	23,404	1,404	1,509	1,457	7.5%	3.8%
15-19	5,151	348	368	361	5.7%	3.5%	15-19	21,661	1,374	1,472	1,421	7.1%	3.4%
20-24	3,697	251	265	259	5.4%	3.1%	20-24	16,484	1,114	1,187	1,148	6.6%	3.0%
25-29	1,936	140	148	144	5.7%	3.0%	25-29	9,726	705	753	726	6.8%	3.0%
30-34	714	53	56	55	5.3%	3.0%	30-34	2,914	220	235	227	6.7%	3.0%
>35	242	18	19	19	5.5%	3.0%	>35	1,131	91	96	93	6.1%	3.0%
<b>Grand Total</b>	<b>47,042</b>	<b>\$ 2,557</b>	<b>\$ 2,744</b>	<b>\$ 2,679</b>	<b>7.3%</b>	<b>4.8%</b>	<b>Grand Total</b>	<b>178,117</b>	<b>\$ 9,556</b>	<b>\$ 10,408</b>	<b>\$ 10,024</b>	<b>8.9%</b>	<b>4.9%</b>



\$ in millions

# FY 2024 Salary Increase for Continuing Actives – PORS

Years of Service	Count	State				Actual % Increase	Expected % Increase	Years of Service	Count	Other Agency				Actual % Increase	Expected % Increase
		FY2023 Pay	Actual FY2024 Pay	Expected FY2024 Pay	% Increase					FY2023 Pay	Actual FY2024 Pay	Expected FY2024 Pay	% Increase		
0-4	2,509	\$ 125	\$ 148	\$ 134	18.8%	7.3%	0-4	6,117	\$ 306	\$ 349	\$ 329	14.0%	7.5%		
5-9	1,667	98	110	102	12.4%	4.7%	5-9	3,918	234	255	245	8.9%	4.6%		
10-14	999	63	71	65	12.6%	4.2%	10-14	2,493	165	179	171	8.7%	4.1%		
15-19	971	63	71	65	13.6%	3.7%	15-19	2,143	152	164	158	7.6%	3.8%		
20-24	650	45	51	46	13.4%	3.6%	20+	1,562	115	125	119	8.2%	3.6%		
25-29	376	28	32	29	12.2%	3.5%	25-29	587	48	51	49	7.5%	3.5%		
30-34	125	9	11	10	13.1%	3.5%	30-34	196	17	18	17	7.1%	3.5%		
>35	56	4	5	4	11.4%	3.5%	>35	40	3	4	4	7.1%	3.5%		
<b>Grand Total</b>	<b>7,353</b>	<b>\$ 434</b>	<b>\$ 497</b>	<b>\$ 456</b>	<b>14.5%</b>	<b>5.0%</b>	<b>Grand Total</b>	<b>17,056</b>	<b>\$ 1,040</b>	<b>\$ 1,144</b>	<b>\$ 1,093</b>	<b>10.0%</b>	<b>5.1%</b>		

Years of Service	Count	Both Groups Combined				Actual % Increase	Expected % Increase
		FY2023 Pay	Actual FY2024 Pay	Expected FY2024 Pay	% Increase		
0-4	8,626	\$ 431	\$ 498	\$ 463	15.4%	7.4%	
5-9	5,585	332	365	347	10.0%	4.6%	
10-14	3,492	227	250	237	9.8%	4.2%	
15-19	3,114	215	235	223	9.4%	3.8%	
20-24	2,212	160	175	165	9.6%	3.6%	
25-29	963	76	83	79	9.3%	3.5%	
30-34	321	26	28	27	9.3%	3.5%	
>35	96	8	8	8	9.5%	3.5%	
<b>Grand Total</b>	<b>24,409</b>	<b>\$ 1,474</b>	<b>\$ 1,642</b>	<b>\$ 1,549</b>	<b>11.4%</b>	<b>5.1%</b>	



\$ in millions

# Summary of July 1, 2024 Valuation Results – Other Systems (\$ in Millions)

Item	JSRS		GARS		SCNG	
	2024	2023	2024	2023	2024	2023
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Actuarial accrued liability	\$488	\$478	\$67	\$68	\$69	\$69
Actuarial (smoothed) value assets	<u>238</u>	<u>222</u>	<u>49</u>	<u>46</u>	<u>47</u>	<u>43</u>
Unfunded liability (UAAL)	\$250	\$256	\$18	\$22	\$22	\$26
Funded ratio	49%	46%	74%	67%	68%	63%
Member contribution rate	10.00%	10.00%	11.0%	11.0%	\$0.0	\$0.0
Employer contribution rate	62.49%	62.49%	\$6.2	\$6.2	\$3.4	\$3.6
Amortization period	19 Years	21 Years	5 Years <sup>1</sup>	4 Years	12 Years	13 Years
Expected contributions (actual for prior year)						
Member	\$3.6	\$3.5	\$0.1	\$0.1	\$0.0	\$0.0
Employer	25.6 <sup>2</sup>	24.2 <sup>2</sup>	6.2	6.2	5.3	5.3

<sup>1</sup> New gains/losses occurring after 2023 are amortized over separate, closed, 5-year bases.

<sup>2</sup> Includes \$2.9 million non-payroll based appropriation.

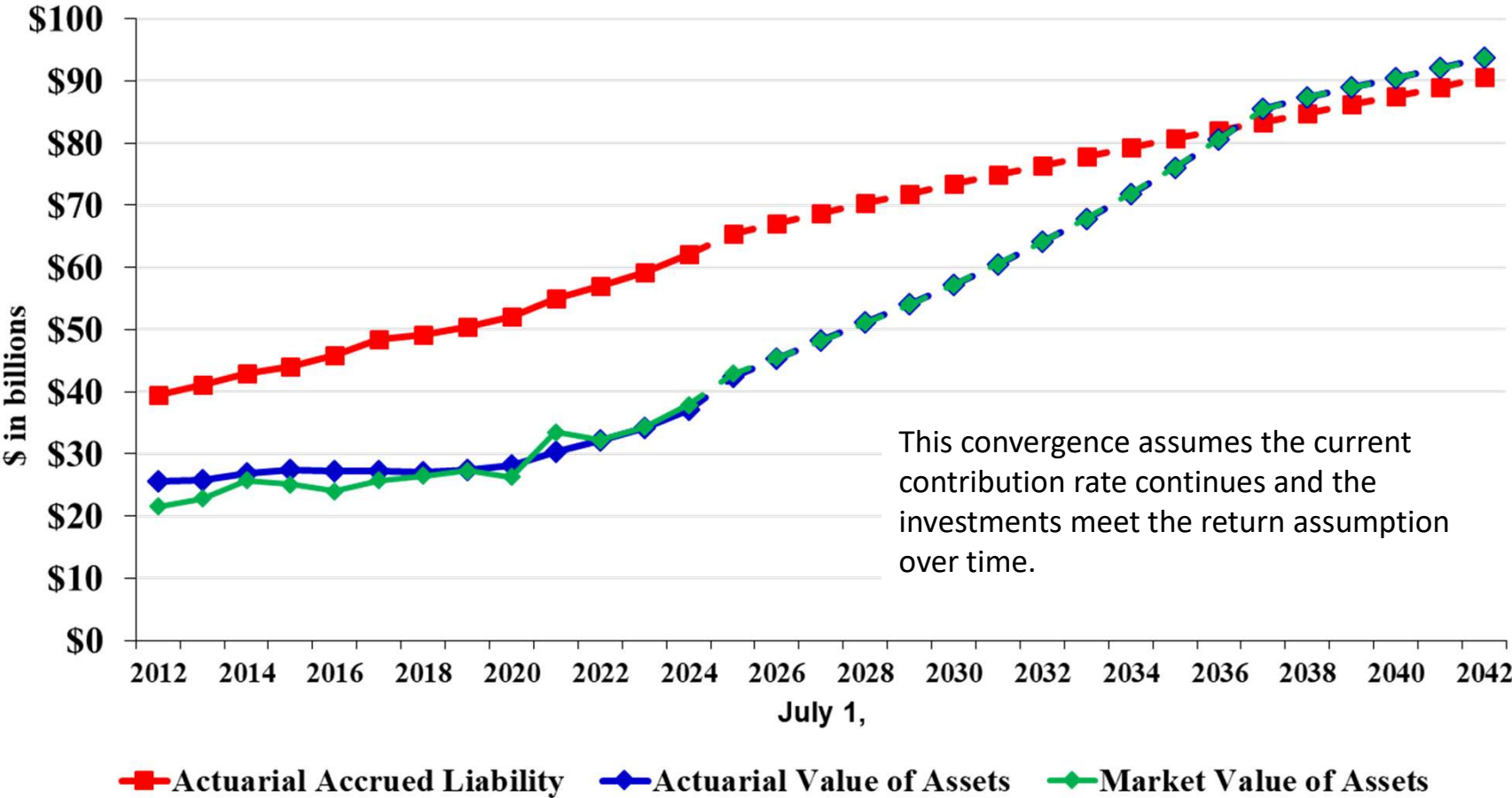


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# Projection Information SCRS



# Historical and Projected Liability and Assets - SCRS



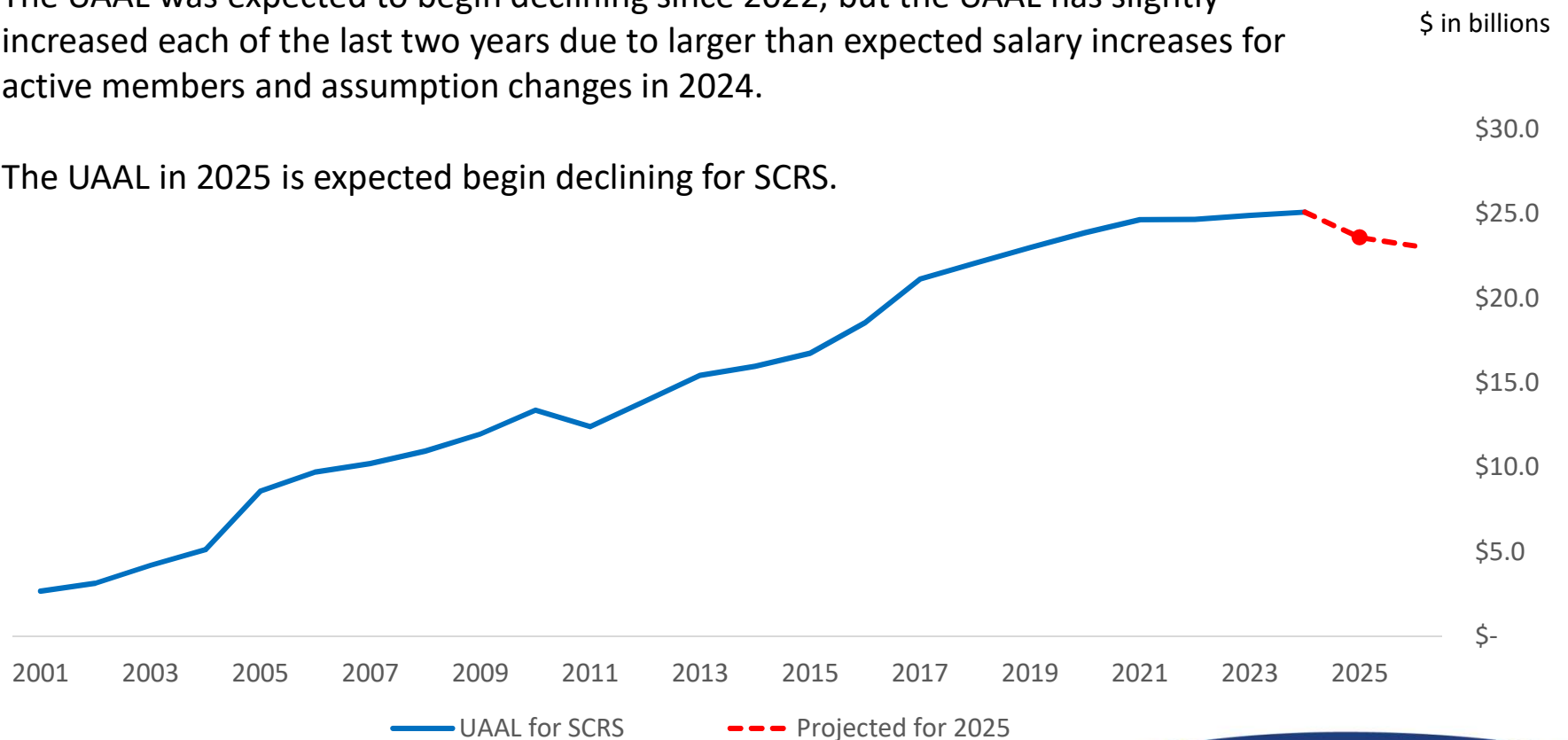
Projected information based on the 2024 actuarial valuation.

# History of UAAL for SCRS

The UAAL has had an increasing trend since 2001.

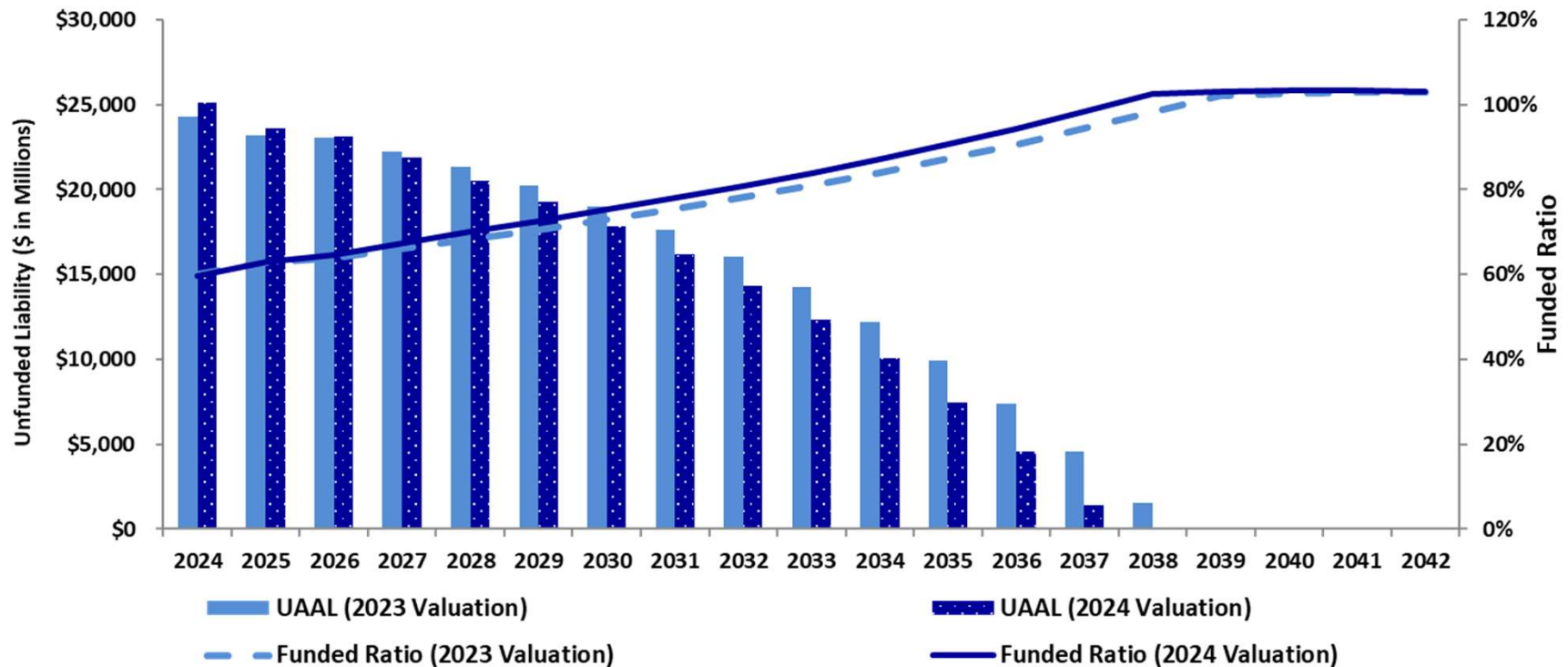
The UAAL was expected to begin declining since 2022, but the UAAL has slightly increased each of the last two years due to larger than expected salary increases for active members and assumption changes in 2024.

The UAAL in 2025 is expected begin declining for SCRS.





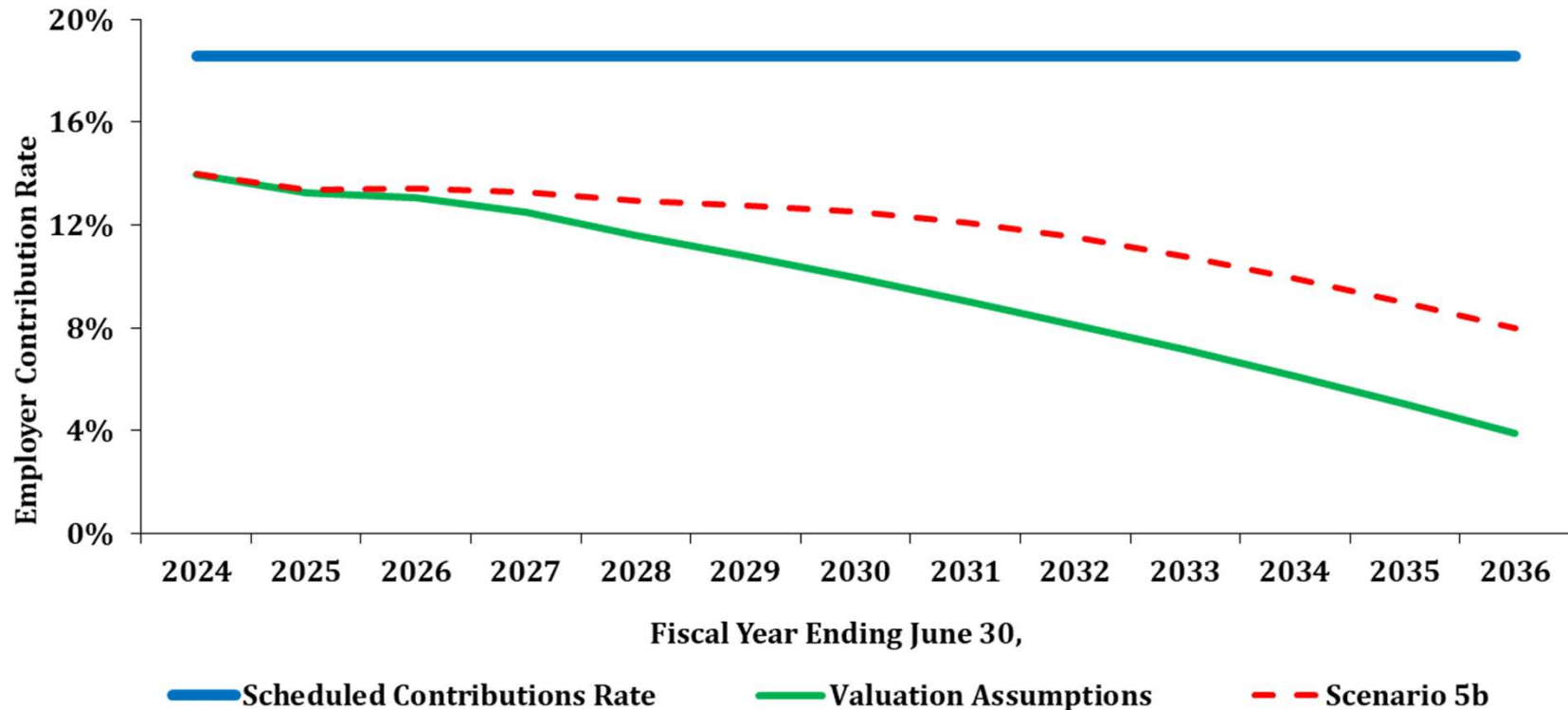
# Projected Unfunded Liability – SCRS 2024 Valuation Versus 2023 Valuation



The projection for 2023 and 2024 assumes the current contribution rate remains in effect future years and actuarial assumptions are met (including a 7.00% return on market assets from the valuation date).

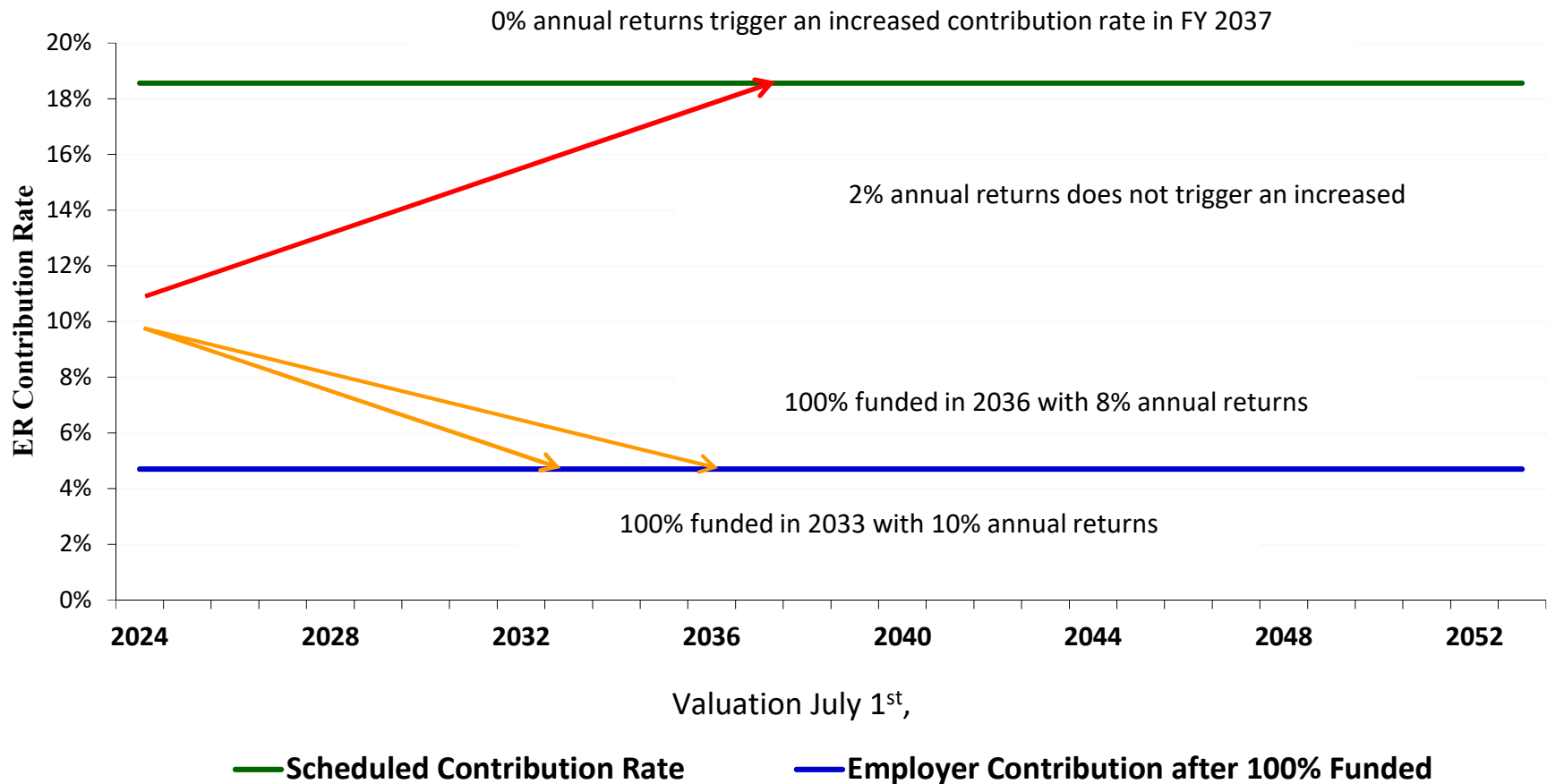


# Projected Contribution Rates – SCRS Legislative Decision Making (Scenario 5b)



Scenario 5b: Emerging investment experience is 4.00% for each of the next five years and 7.00% each year thereafter.

# Test comparing multiple outcomes over different time horizons



# Projected Probabilities of Outcomes

	2024 Valuation	2023 Valuation	2022 Valuation
Probability greater than 85% funded ratio in 2035	55%	51%	39%
Probability greater than 90% funded ratio in 2040	57%	59%	54%
Probability UAAL smaller than current in 5 Years	71%	70%	63%
Probability UAAL smaller than current in 10 Years	73%	74%	68%
Probability contributions required to exceed 18.56% at some point (funding period exceeds 20 years)	11%	8%	22%

Current Funded Ratio is 60%

Simulations from both years use 7% expected geometric return with a 14.8% annual standard deviation

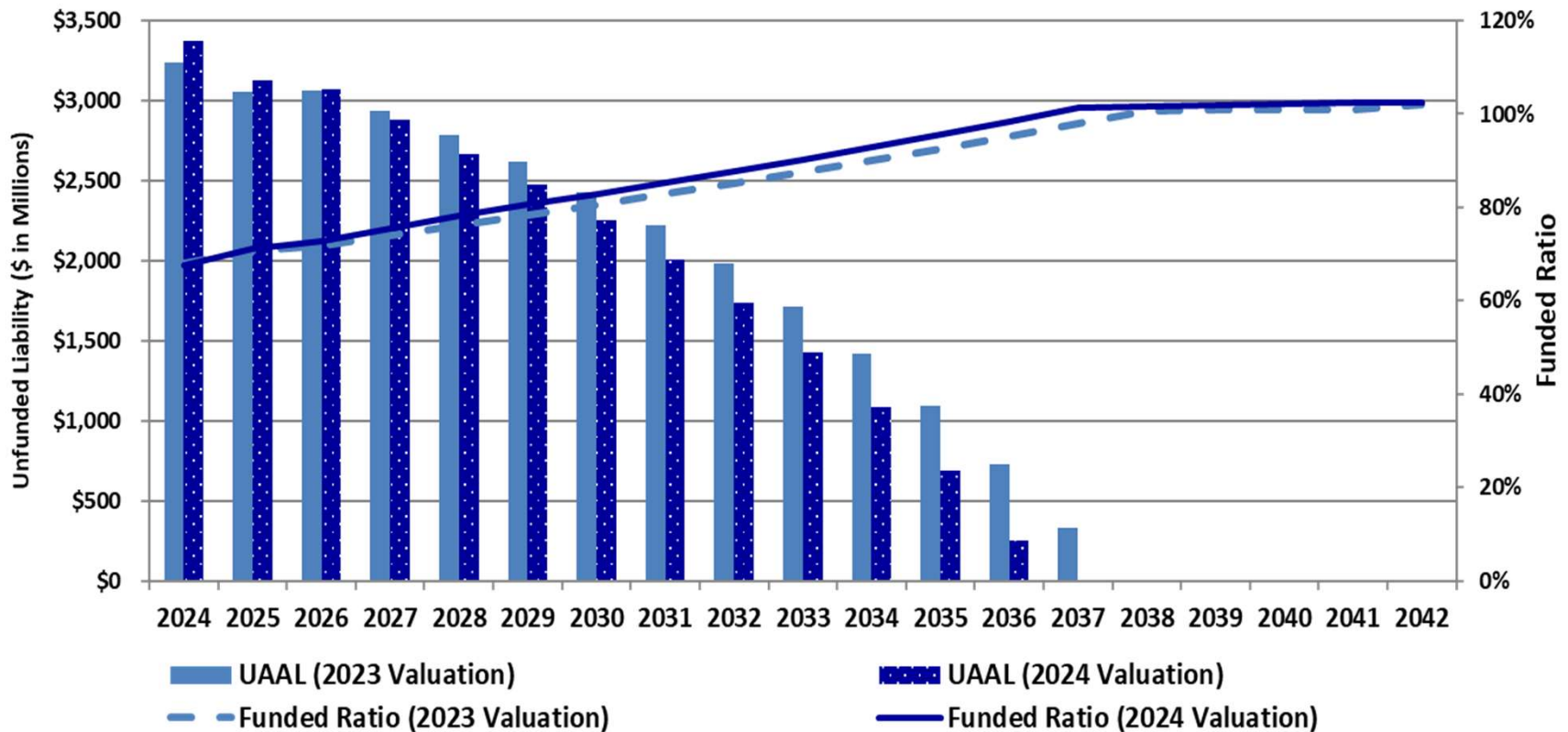


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# Projection Information PORS



# Projected Unfunded Liability – PORS 2024 Valuation



The projection for 2023 and 2024 assumes the current contribution rate is remains effect in future years and the current actuarial assumptions are met (including a 7.00% return on market assets from the valuation date).



# Valuation Comment Summary

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- The UAAL dollar amount is projected to begin decreasing for SCRS and PORS
- It is highly likely the current employer contribution rates for SCRS and PORS will satisfy the 20 year maximum amortization period in Statute
- Recommend staying the course and give the current funding policy time to achieve its objectives

# Disclaimers

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- This presentation is intended to be used in conjunction with the actuarial valuations as of July 1, 2024. 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.





November 20, 2024

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

**Subject: Recommended Investment Return Assumption – 2025 Through 2028 Actuarial Valuations**

Dear Members of the Board:

The investment return assumption is established by the General Assembly pursuant to Section 9-16-335 of South Carolina State Code. Under this Statute, the current seven percent (7.00%) investment return assumption is timed to expire on June 30, 2025 and a new annual rate of return must be made effective.

Before January 1, 2025, the Board is required to recommend a new investment return assumption for the subsequent four-year period, that begins July 1, 2025 and ends June 30, 2029, to the Chairman of the Senate Finance Committee and the Chairman of the House Ways and Means Committee. The recommended investment return assumption is to be developed based on the recommendation of the Board's actuary and in consultation with the Retirement System Investment Commission (RSIC).

We, as the Board's actuary, conducted an experience study investigation in early 2024 that included an analysis of the investment return assumption using forward-looking return expectations developed by several investment consulting firms. **As a result of that analysis, we recommend to the Board the continued use of a seven percent (7.00%) investment return assumption for the subsequent four-year period.** The documentation of this analysis is provided in the experience study report dated June 26, 2024. Furthermore, we have not identified any information subsequent to that review that would change our recommendation provided in that report.


#### **CERTIFICATION**

It is our opinion that the recommended investment return assumption reasonably reflects the anticipated future experience of the System and meets the parameters set by Actuarial Standards of Practice (ASOP) issued by the Actuarial Standards Board, including ASOP Number 27.

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

Sincerely,

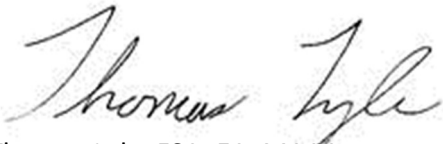
**Gabriel, Roeder, Smith & Co.**



Joseph P. Newton, FSA, MAAA, EA  
Pension Market Leader and Actuary



Daniel J. White, FSA, MAAA, EA  
Vice President and Actuary



Thomas Lyle, FSA, EA, MAAA  
Consultant

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## SUMMARY OF 2024 VALUATION RESULTS

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# South Carolina Retirement System (SCRS)

## Executive Summary

(Dollar amounts expressed in thousands)

	Valuation Date:	
	July 1, 2024	July 1, 2023
<b>Membership</b> <ul style="list-style-type: none"> <li>• Number of               <ul style="list-style-type: none"> <li>- Active Members <span style="float: right;">210,887</span></li> <li>- Retirees and Beneficiaries <span style="float: right;">156,141</span></li> <li>- Inactive Members <span style="float: right;"><u>237,262</u></span></li> <li>- Total <span style="float: right;">604,290</span></li> </ul> </li> <li>• Projected payroll of active members <span style="float: right;">\$11,927,904</span></li> <li>• Projected payroll for all members, including working retirees and members in ORP <span style="float: right;">\$14,557,617</span></li> </ul>	<u>227,527</u>	<u>587,070</u> \$11,041,023 \$13,412,935
<b>Required Contribution Rates</b> <ul style="list-style-type: none"> <li>• Employer contribution rate<sup>1</sup> <span style="float: right;">18.56%</span></li> <li>• Member <span style="float: right;">9.00%</span></li> </ul>	18.56%	18.56% 9.00%
<b>Assets</b> <ul style="list-style-type: none"> <li>• Market value <span style="float: right;">\$37,919,492</span></li> <li>• Actuarial value <span style="float: right;">37,015,945</span></li> <li>• Return on market value <span style="float: right;">10.5%</span></li> <li>• Return on actuarial value <span style="float: right;">7.9%</span></li> <li>• Ratio of actuarial to market value of assets <span style="float: right;">97.6%</span></li> <li>• External cash flow % <span style="float: right;">0.1%</span></li> </ul>	\$34,286,962	34,253,870 7.2% 7.0% 99.9% -0.7%
<b>Actuarial Information</b> <ul style="list-style-type: none"> <li>• Normal cost % <span style="float: right;">10.92%</span></li> <li>• Actuarial accrued liability (AAL) <span style="float: right;">\$62,139,097</span></li> <li>• Unfunded actuarial accrued liability (UAAL) <span style="float: right;">25,123,152</span></li> <li>• Funded ratio <span style="float: right;">59.6%</span></li> <li>• Funding period (years)<sup>2</sup> <span style="float: right;">14</span></li> </ul>	\$59,164,049	24,910,179 57.9% 16
<b>Reconciliation of UAAL</b> <ul style="list-style-type: none"> <li>• Beginning of Year UAAL <span style="float: right;">\$24,910,179</span></li> <li>- Interest on UAAL <span style="float: right;">1,743,713</span></li> <li>- Amortization payment <span style="float: right;">(2,458,752)</span></li> <li>- Assumption/method changes <span style="float: right;">530,045</span></li> <li>- Asset experience <span style="float: right;">(318,262)</span></li> <li>- Salary experience <span style="float: right;">753,474</span></li> <li>- Other liability experience <span style="float: right;">(37,245)</span></li> <li>- Legislative Changes <span style="float: right;"><u>0</u></span></li> <li>• End of Year UAAL <span style="float: right;">\$25,123,152</span></li> </ul>	<u>24,674,015</u>	1,727,181 (2,126,151) 0 2,192 637,831 (4,889) <u>0</u> \$24,910,179

<sup>1</sup> The employer contribution rates in effect for FY 2025 and FY 2026 is 18.56% of pay. The scheduled contribution rates were enacted by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent proviso. These contribution rates include the cost of incidental death benefits.

<sup>2</sup> The funding period for 2024 is determined on an actuarial value of asset basis and is based on the contribution rate scheduled to become effective for FY 2026 (i.e. beginning July 1, 2025 and ending June 30, 2026).

# Police Officers Retirement System (PORS)

## Executive Summary

(Dollar amounts expressed in thousands)

	Valuation Date:	
	July 1, 2024	July 1, 2023
<b>Membership</b>		
• Number of		
- Active members	28,882	27,797
- Retirees and beneficiaries	21,787	21,367
- Inactive members	<u>23,681</u>	<u>22,530</u>
- Total	74,350	71,694
• Projected payroll of active members	\$1,898,424	\$1,601,690
• Projected payroll for all active members, including working retirees	\$2,025,734	\$1,714,682
<b>Required Contribution Rates</b>		
• Employer contribution rate <sup>1</sup>	21.24%	21.24%
• Member	9.75%	9.75%
<b>Assets</b>		
• Market value	\$7,178,119	\$6,405,925
• Actuarial value	7,009,939	6,400,701
• Return on market value	10.4%	7.3%
• Return on actuarial value	7.9%	7.0%
• Ratio - actuarial value to market value	97.7%	99.9%
• External cash flow %	1.5%	0.6%
<b>Actuarial Information</b>		
• Normal cost %	15.66%	15.22%
• Actuarial accrued liability (AAL)	\$10,386,571	\$9,706,642
• Unfunded actuarial accrued liability (UAAL)	3,376,632	3,305,941
• Funded ratio	67.5%	65.9%
• Funding period (years) <sup>2</sup>	13	16
<b>Reconciliation of UAAL</b>		
• Beginning of Year UAAL	\$3,305,941	\$3,144,867
- Interest on UAAL	231,416	220,141
- Amortization payment	(345,622)	(288,338)
- Assumption/method changes	68,762	0
- Asset experience	(59,743)	2,256
- Salary experience	204,128	246,341
- Other liability experience	(28,250)	(19,326)
- Legislative Changes	<u>0</u>	<u>0</u>
• End of Year UAAL	\$3,376,632	\$3,305,941

<sup>1</sup> The employer contribution rates is 21.24% of pay for FY 2025 and FY 2026.

This scheduled contribution rate came into existence by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent budget proviso. These contribution rates include the cost of accidental and incidental death benefits.

<sup>2</sup> The funding period for 2024 is determined on an actuarial value of asset basis and is based on the contribution rate scheduled to become effective for FY 2026 (i.e. beginning July 1, 2025 and ending June 30, 2026).

# Retirement System for Judges and Solicitors (JSRS)

## Executive Summary

(Dollar amounts expressed in thousands)

Valuation Date:	July 1, 2024	July 1, 2023
<b>Membership</b>		
<ul style="list-style-type: none"> <li>• Number of               <ul style="list-style-type: none"> <li>- Active members<sup>1</sup> <span style="float: right;">168</span></li> <li>- Retirees and beneficiaries <span style="float: right;">227</span></li> <li>- Inactive members <span style="float: right;">5</span></li> <li>- Total <span style="float: right; border-top: 1px solid black;">400</span></li> </ul> </li> <li>• Projected payroll of active members <span style="float: right;">\$36,076</span></li> </ul>	<span style="float: right; border-top: 1px solid black;">386</span> <span style="float: right;">\$33,639</span>	
<b>Contribution Rates</b>		
<ul style="list-style-type: none"> <li>• Employer contribution rate <span style="float: right;">62.94% <sup>2</sup></span></li> <li>• Non-Payroll based State appropriations <span style="float: right;">\$2,900</span></li> <li>• Member <span style="float: right;">10.00%</span></li> </ul>	<span style="float: right;">62.94%</span> <span style="float: right;">\$2,900</span> <span style="float: right;">10.00%</span>	
<b>Assets</b>		
<ul style="list-style-type: none"> <li>• Market value <span style="float: right;">\$243,734</span></li> <li>• Actuarial value <span style="float: right;">237,611</span></li> <li>• Return on market value <span style="float: right;">10.7%</span></li> <li>• Return on actuarial value <span style="float: right;">7.9%</span></li> <li>• Ratio of actuarial to market value of assets <span style="float: right;">97.5%</span></li> <li>• External cash flow % <span style="float: right;">-0.6%</span></li> </ul>	<span style="float: right;">\$221,630</span> <span style="float: right;">221,629</span> <span style="float: right;">7.4%</span> <span style="float: right;">6.9%</span> <span style="float: right;">100.0%</span> <span style="float: right;">-0.1%</span>	
<b>Actuarial Information</b>		
<ul style="list-style-type: none"> <li>• Normal cost % <span style="float: right;">30.78%</span></li> <li>• Actuarial accrued liability (AAL) <span style="float: right;">\$488,265</span></li> <li>• Unfunded actuarial accrued liability (UAAL) <span style="float: right;">250,654</span></li> <li>• Funded ratio <span style="float: right;">48.7%</span></li> <li>• Calculated funding period (years) <span style="float: right;">19</span></li> </ul>	<span style="float: right;">30.58%</span> <span style="float: right;">\$477,736</span> <span style="float: right;">256,107</span> <span style="float: right;">46.4%</span> <span style="float: right;">21</span>	
<b>Reconciliation of UAAL</b>		
<ul style="list-style-type: none"> <li>• Beginning of Year UAAL <span style="float: right;">\$256,107</span></li> <li>- Interest on UAAL <span style="float: right;">17,927</span></li> <li>- Amortization payment <span style="float: right;">(18,935)</span></li> <li>- Assumption/method changes <span style="float: right;">(2,649)</span></li> <li>- Asset experience <span style="float: right;">(2,029)</span></li> <li>- Benefit adjustment <span style="float: right;">(2,170)</span></li> <li>- Salary experience <span style="float: right;">(1,209)</span></li> <li>- Other liability experience <span style="float: right;">3,612</span></li> <li>- Legislative Changes <span style="float: right;">0</span></li> <li>• End of Year UAAL <span style="float: right; border-top: 1px solid black;">\$250,654</span></li> </ul>	<span style="float: right;">\$242,056</span> <span style="float: right;">16,944</span> <span style="float: right;">(18,947)</span> <span style="float: right;">0</span> <span style="float: right;">124</span> <span style="float: right;">5,669</span> <span style="float: right;">3,026</span> <span style="float: right;">7,235</span> <span style="float: right;">0</span> <span style="float: right; border-top: 1px solid black;">\$256,107</span>	

<sup>1</sup> Active member counts include 13 retired-in-place members as of July 1, 2024 and 15 as of July 1, 2023 and also includes unfilled positions.

<sup>2</sup> The 62.94% contribution rate includes the cost of incidental death benefits.

# Retirement System for Members of the General Assembly of the State of South Carolina (GARS)

## Executive Summary

(Dollar amounts expressed in thousands)

Valuation Date:	July 1, 2024	July 1, 2023
<b>Membership</b> <ul style="list-style-type: none"> <li>• Number of               <ul style="list-style-type: none"> <li>- Active positions</li> <li>- Special contributors</li> <li>- Retirees and beneficiaries</li> <li>- Inactive members</li> </ul> </li> <li>- Total</li> <li>• Projected payroll</li> </ul>	43 16 336 <u>25</u> 420 \$967	44 18 336 <u>27</u> 425 \$1,000
<b>Contribution Requirement</b> <ul style="list-style-type: none"> <li>• Member contribution rate</li> <li>• Employer contribution requirement <sup>1</sup></li> </ul>	11.00% \$6,201	11.00% \$6,200
<b>Assets</b> <ul style="list-style-type: none"> <li>• Market value</li> <li>• Actuarial value</li> <li>• Return on market value</li> <li>• Return on actuarial value</li> <li>• Ratio - actuarial value to market value</li> <li>• External cash flow %</li> </ul>	\$50,526 49,399 10.5% 7.7% 97.8% 0.4%	\$45,560 45,723 7.3% 6.7% 100.4% 0.0%
<b>Actuarial Information</b> <ul style="list-style-type: none"> <li>• Normal cost %</li> <li>• Actuarial accrued liability (AAL)</li> <li>• Unfunded actuarial accrued liability (UAAL)</li> <li>• Funded ratio</li> <li>• Funding period from the valuation date <sup>2</sup></li> </ul>	22.04% \$66,520 17,121 74.3% 5 Years	22.16% \$67,853 22,130 67.4% 4 Years
<b>Reconciliation of UAAL</b> <ul style="list-style-type: none"> <li>• Beginning of Year UAAL</li> <li>- Interest on UAAL</li> <li>- Amortization payment</li> <li>- Assumption change</li> <li>- Asset experience</li> <li>- Liability experience</li> <li>- Legislative changes</li> <li>• End of Year UAAL</li> </ul>	\$22,130 1,118 (6,152) (247) (317) 589 <u>0</u> \$17,121	\$27,007 1,459 (6,168) 0 124 (292) <u>0</u> \$22,130

<sup>1</sup> The contribution requirement determined by the July 1, 2024 valuation is effective for the fiscal year beginning July 1, 2025. The contribution requirement determined by the July 1, 2023 valuation was adopted by the Board to be effective for the fiscal year beginning July 1, 2024.

<sup>2</sup> Gains/losses occurring after 2023 are amortized over separate closed 5-year amortization bases.

# South Carolina National Guard Supplemental Retirement Plan (SCNG)

## Executive Summary

(Dollar amounts expressed in thousands)

Valuation Date:	July 1, 2024	July 1, 2023
<b>Membership</b> <ul style="list-style-type: none"> <li>• Number of               <ul style="list-style-type: none"> <li>- Active Members</li> <li>- Retirees</li> <li>- Inactive Members</li> <li>- Total</li> </ul> </li> </ul>	12,620 5,211 1,292 <hr/> 19,123	12,071 5,161 1,400 <hr/> 18,632
<b>Annual Required Contribution</b> <ul style="list-style-type: none"> <li>• Member</li> <li>• Employer contribution<sup>1</sup></li> </ul>	\$0 \$3,402	\$0 \$3,621
<b>Assets</b> <ul style="list-style-type: none"> <li>• Market value</li> <li>• Actuarial value</li> <li>• Return on market value</li> <li>• Return on actuarial value</li> <li>• Ratio - actuarial value to market value</li> <li>• External cash flow %</li> </ul>	\$47,789 47,096 10.0% 7.2% 98.5% 1.2%	\$42,943 43,401 7.0% 6.4% 101.1% 1.5%
<b>Actuarial Information</b> <ul style="list-style-type: none"> <li>• Normal cost</li> <li>• Actuarial accrued liability (AAL)</li> <li>• Unfunded actuarial accrued liability (UAAL)</li> <li>• Funded ratio</li> <li>• Amortization period</li> </ul>	\$859 68,988 21,892 68.3% 12	\$801 68,975 25,574 62.9% 13
<b>Reconciliation of UAAL</b> <ul style="list-style-type: none"> <li>• Beginning of Year UAAL</li> <li>- Interest on UAAL</li> <li>- Amortization payment</li> <li>- Assumption/method changes</li> <li>- Asset experience</li> <li>- Other liability experience</li> <li>- Legislative changes</li> <li>• End of Year UAAL</li> </ul>	\$25,574 1,790 (4,646) 114 (108) (832) 0 <hr/> \$21,892	\$28,580 2,001 (4,650) 0 256 (613) 0 <hr/> \$25,574

<sup>1</sup> The contribution amount determined by the actuarial valuation is effective for the following fiscal year. The calculated contribution requirement for FY 2024 was \$3,837 thousand. However, the state's actual appropriation for FY 2024 was \$5,290 thousand.



# South Carolina Retirement System (SCRS)

ACTUARIAL VALUATION REPORT  
AS OF JULY 1, 2024

DRAFT





December 4, 2024

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

**Subject: Actuarial Valuation as of July 1, 2024**

Dear Members of the Board:

This report describes the current actuarial condition of the South Carolina Retirement System (SCRS), determines the unfunded liability and the calculated funding period based on the scheduled employer and member contribution rates, as well as 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) Statement Nos. 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 contribution rate is established in accordance with Section 9-1-1085 of the South Carolina Code, which first came into existence by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent budget proviso. In accordance with that statutory schedule, as modified, the employer contribution rate in effect for the fiscal year ending June 30, 2024 is 18.56% of pay and that contribution rate will be maintained in future years.

Additionally, the Statute specifies that the maximum amortization period is 23 years as of July 1, 2024 and the maximum amortization period will decrease by one year in each of the next three years until reaching a maximum 20-year funding period on July 1, 2027. The employer contribution rate determined by an actuarial valuation must be sufficient to maintain an amortization period that does not exceed 20 years each year thereafter. Finally, the Board is not permitted to decrease the employer and member contribution rates until the funded ratio of the plan is at least 85%.

If new legislation is enacted between the valuation date and the date the contribution rate becomes effective, the General Assembly may adjust the scheduled contribution 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 increased from 57.9% to 59.6%. Absent unfavorable investment or liability experience, the funded ratio is projected to continue improving.

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 61.0%, compared to 58.0% in the prior year. The increase in the funded ratio on a market value basis is primarily due to the contribution effort by the employers and members as well as the favorable investment return during the prior fiscal year. Plan assets earned a 10.49% return on a time weighted-basis (net of fees) as reported in the financial statement of the South Carolina Retirement Systems for the year ending June 30, 2024. The 10.5% return documented in this report was determined on a dollar-weighted basis and assumes mid-year cash flows.

### **ASSUMPTIONS AND METHODS**

South Carolina State Code requires an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. The last experience study was performed for the five-year period ending June 30, 2023, and the Board has adopted the assumptions recommended in that report for first use in the July 1, 2024 actuarial valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.00% for the July 1, 2024 actuarial valuation. Updated assumptions used in the July 1, 2024 valuation include:

- Updated mortality assumption for active members
- Updated mortality improvement assumption
- Increase the salary assumption for members with less than 20 years of service
- Slight increase in the rate of termination prior to retirement eligibility
- Increase in rate of retirement for public school employees
- Reduced rate of disability incidence

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System. The combined effect of the assumptions used in this valuation is expected to have no significant bias.

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.

This report was prepared using our proprietary valuation model and related software, which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.



## BENEFIT PROVISIONS

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2024. There were no legislative changes enacted since the prior valuation that materially changed or modified the benefits that members earn or receive.

## DATA

Member data for retired, active and inactive members was supplied as of July 1, 2024, by the PEBA staff. The staff also supplied asset information as of July 1, 2024. 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, 2024.

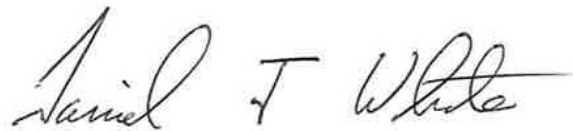
All of our work conforms with generally accepted actuarial principles and practices, and is in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of South Carolina Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and consultants. All three are also Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Each are experienced in performing valuations for large public retirement systems.

Sincerely,

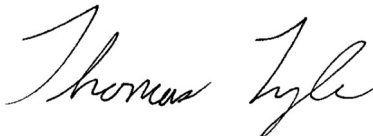
**Gabriel, Roeder, Smith & Co.**



Joseph P. Newton, FSA, MAAA, EA  
Pension Market Leader and Actuary



Daniel J. White, FSA, MAAA, EA  
Vice President and Actuary



Thomas Lyle, FSA, MAAA, EA  
Consultant



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## **SECTION A**

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### **EXECUTIVE SUMMARY**

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# Executive Summary

(Dollar amounts expressed in thousands)

	Valuation Date:	
	July 1, 2024	July 1, 2023
<b>Membership</b>		
• Number of		
- Active Members	210,887	205,985
- Retirees and Beneficiaries	156,141	153,558
- Inactive Members	<u>237,262</u>	<u>227,527</u>
- Total	604,290	587,070
• Projected payroll of active members	\$11,927,904	\$11,041,023
• Projected payroll for all members, including working retirees and members in ORP	\$14,557,617	\$13,412,935
<b>Required Contribution Rates</b>		
• Employer contribution rate <sup>1</sup>	18.56%	18.56%
• Member	9.00%	9.00%
<b>Assets</b>		
• Market value	\$37,919,492	\$34,286,962
• Actuarial value	37,015,945	34,253,870
• Return on market value	10.5%	7.2%
• Return on actuarial value	7.9%	7.0%
• Ratio of actuarial to market value of assets	97.6%	99.9%
• External cash flow %	0.1%	-0.7%
<b>Actuarial Information</b>		
• Normal cost %	10.92%	10.89%
• Actuarial accrued liability (AAL)	\$62,139,097	\$59,164,049
• Unfunded actuarial accrued liability (UAAL)	25,123,152	24,910,179
• Funded ratio	59.6%	57.9%
• Funding period (years) <sup>2</sup>	14	16
<b>Reconciliation of UAAL</b>		
• Beginning of Year UAAL	\$24,910,179	\$24,674,015
- Interest on UAAL	1,743,713	1,727,181
- Amortization payment	(2,458,752)	(2,126,151)
- Assumption/method changes	530,045	0
- Asset experience	(318,262)	2,192
- Salary experience	753,474	637,831
- Other liability experience	(37,245)	(4,889)
- Legislative Changes	<u>0</u>	<u>0</u>
• End of Year UAAL	\$25,123,152	\$24,910,179

<sup>1</sup> The employer contribution rates in effect for FY 2025 and FY 2026 is 18.56% of pay.

The scheduled contribution rates were enacted by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent proviso. These contribution rates include the cost of incidental death benefits.

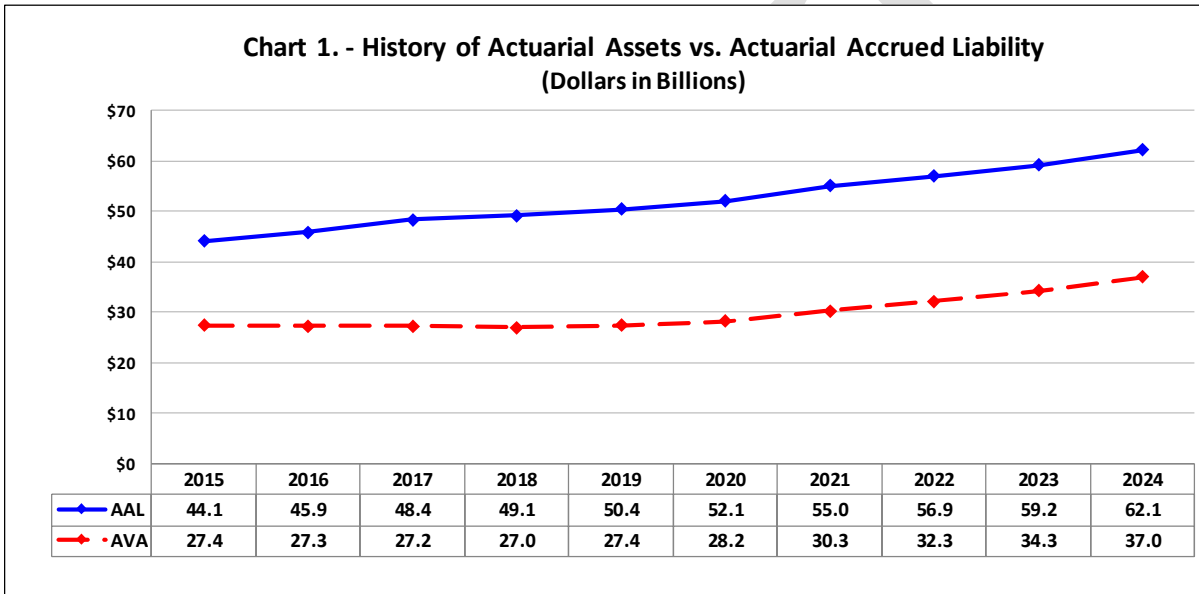
<sup>2</sup> The funding period for 2024 is determined on an actuarial value of asset basis and is based on the contribution rate scheduled to become effective for FY 2026 (i.e. beginning July 1, 2025 and ending June 30, 2026).



## Executive Summary (Continued)

The unfunded actuarial accrued liability increased by \$213 million since the prior year’s valuation to \$25.123 billion. The largest source of this increase is the \$753 million increase due to individual salary increases during the prior year being higher than assumed. Below is a chart with the historical actuarial value of assets and actuarial accrued liability for SCRS.

The divergence in the assets and liabilities over the last 10 years has been due to a combination of: (i) the actual investment experience being less than the System’s expected investment return assumption, (ii) assumption changes that occurred during the period, and (iii) contributions that were less than the interest on the unfunded actuarial accrued liability. It is now projected that the assets will begin to close the difference and achieve the value of the liabilities over the next 14 years.



The employer contribution rate is 18.56% of pay in fiscal year 2025 and future years. This employer contribution rate and the maximum amortization that is specified in state statute will, in time, result in improved financial security of the System. Finally, the Board is not permitted to decrease the employer and member contribution rates until the funded ratio of the plan is at least 85%.



## SECTION B

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### DISCUSSION

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## Discussion

The results of the July 1, 2024 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 and analyze changes in the System's financial condition. In addition, the report provides various summaries of the data.

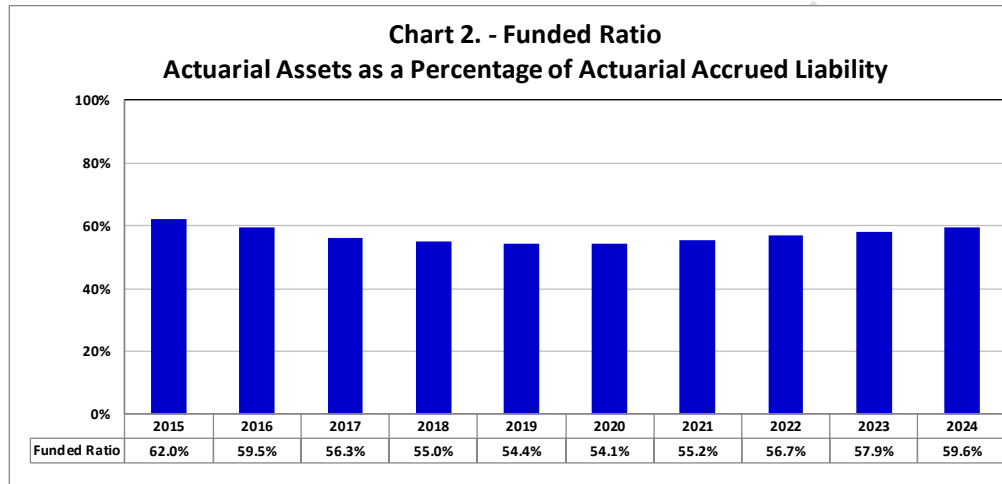
This section discusses the determination of the current funding requirements and the System's funded status, as well as changes in financial condition of the retirement system.

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. Section E provides an assessment and disclosure of risk as required by Actuarial Standards of Practice No. 51. 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.

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## Funding Progress

The funded ratio increased from 57.9% to 59.6% since the prior valuation. Chart 2, shown below provides a 10-year history of the System's funded ratio. The maintenance of the 18.56% employer contribution rate in effect for fiscal year 2025 and future years is projected to result in an upward trend in the funded ratio. Table 10, Schedule of Funding Progress, in the following section of the report provides additional detail regarding the funding progress of the Retirement System.

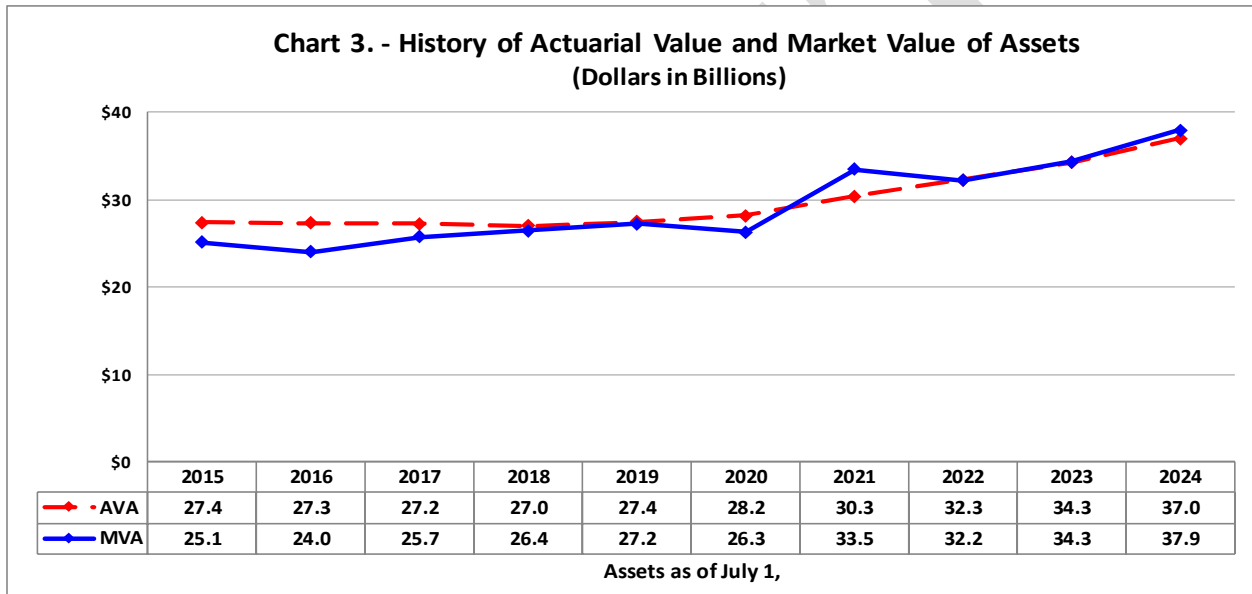


Absent future unfavorable investment or demographic experience, or legislative changes, we expect the funded ratio to gradually improve each year in the future. Also, we expect the dollar amount of the unfunded actuarial accrued liability, or the difference between the actuarial accrued liability and the actuarial value of assets, to gradually decrease in the coming years.

## 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 to \$37.0 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 2024 was 10.5%; which is greater than the 7.00% investment return assumption. The return on an actuarial (smoothed) asset value was 7.9%. This difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.



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 to \$25.1 billion from July 1, 2023 to July 1, 2024. The table below shows the source of the gains and losses and the impact of those gains and losses on the UAAL.

<b>Reconciliation of UAAL</b>	
<b>(Dollars in thousands)</b>	
• Beginning of Fiscal Year UAAL	\$24,910,179
- Interest on UAAL	1,743,713
- Amortization payment	(2,458,752)
- Assumption/method changes	530,045
- Asset Experience	(318,262)
- Salary Experience	753,474
- Other liability experience	(37,245)
- Legislative changes	0
• End of Fiscal Year UAAL	<u>\$25,123,152</u>

## Actuarial Gains/ (Losses) and the Funding Period (Continued)

The following table reconciles the change in the funding period from the prior year's valuation based on the contribution rates that are currently in effect.

<b>Change in Funding Period (Years)</b>	
• 2023 Valuation and FY 2025 Contribution Rate	15.3
- Expected experience	(1.0)
- Assumption and method changes	0.4
- Asset experience	(0.2)
- Salary and demographic experience <sup>1</sup>	(0.7)
- Legislative changes	0.0
- Total Change	(1.5)
• 2024 Valuation and FY 2026 Contribution Rates	13.8

<sup>1</sup> The effect of the higher than expected increase in total payroll (including ORP and working retirees) resulted in a net decrease in the funding period.

The employer contribution rate is established in accordance with Section 9-1-1085 of the South Carolina Code, which first came into existence by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent budget proviso. The employer contribution rate scheduled to be in effect for the fiscal year ending June 30, 2025 is 18.56% and will be maintained in future years.

# 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 Statute requires an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. The last experience study was conducted for the five-year period ending June 30, 2023, and the Board has adopted the assumptions recommended in that report for first use in the July 1, 2024 actuarial valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.00% for the July 1, 2024 actuarial valuation. Updated assumptions used in the July 1, 2024 valuation include:

- Updated mortality assumption for active members
- Updated mortality improvement assumption
- Increase the salary assumption for members with less than 20 years of service
- Slight increase in the rate of termination prior to retirement eligibility
- Increase in rate of retirement for public school employees
- Reduced rate of disability incidence

It is our opinion that the current assumptions are internally consistent and reasonable reflect the anticipated future experience of the System. Appendix A includes a summary of the actuarial assumptions and methods used in this valuation.

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 7.00% 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 Statute.

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 the maximum amortization period that is specified in State Statute.

## Benefit Provisions

Appendix B of this report includes a summary of the benefit provisions for SCRS. There were no material legislative changes enacted since the prior actuarial valuation that changed or modified the benefits that members earn or receive. 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 with an effective date of membership 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 a benefit adjustment equal to the lesser of 1.00% of their retirement benefit or \$500 per annum.

#### *Class Three Members (members with an effective date of membership 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 a benefit adjustment equal to the lesser of 1.00% of their retirement benefit or \$500 per annum.



## SECTION C

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### ACTUARIAL TABLES

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# Actuarial Tables

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**Summary of Cost Items**  
(Dollar amounts expressed in thousands)

	July 1, 2024 (1)	July 1, 2023 (2)
1. Projected payroll of active members <sup>1</sup>	\$ 11,927,904	\$ 11,041,023
2. Present value of future pay	\$ 90,474,609	\$ 87,600,649
3. Normal cost rate		
a. Total normal cost rate	10.92%	10.89%
b. Less: member contribution rate	<u>-9.00%</u>	<u>-9.00%</u>
c. Employer normal cost rate	1.92%	1.89%
4. Actuarial accrued liability for active members		
a. Present value of future benefits	\$ 33,635,817	\$ 31,386,509
b. Less: present value of future normal costs	<u>(9,424,574)</u>	<u>(9,113,395)</u>
c. Actuarial accrued liability	\$ 24,211,243	\$ 22,273,114
5. Total actuarial accrued liability		
a. Retirees and beneficiaries	\$ 36,099,755	\$ 35,169,807
b. Inactive members	1,828,099	1,721,128
c. Active members (Item 4c)	<u>24,211,243</u>	<u>22,273,114</u>
d. Total	\$ 62,139,097	\$ 59,164,049
6. Actuarial value of assets	\$ 37,015,945	\$ 34,253,870
7. Unfunded actuarial accrued liability (UAAL) (Item 5d - Item 6)	\$ 25,123,152	\$ 24,910,179
8. Required Contribution Rate		
a. Employer normal cost rate	1.92%	1.89%
b. Employer contribution rate available to amortize the UAAL	<u>16.64%</u>	<u>16.67%</u>
c. Total employer contribution rate	18.56%	18.56%
9. Funding period based on the required employer contribution rate (years) <sup>2</sup>	14	16
10. Applicable statutorily required contribution rates <sup>3</sup>		
a. Employer contribution rate	18.56%	18.56%
b. Member contribution rate	9.00%	9.00%

<sup>1</sup> The projected payroll does not include payroll for members in ORP or working retirees.

<sup>2</sup> The funding period for 2024 is determined on an actuarial value of asset basis and is based on the scheduled contribution rate for FY 2026 (i.e. beginning July 1, 2025 and ending June 30, 2026).

<sup>3</sup> The employer contribution rates in effect for FY 2025 and FY 2026 is 18.56% of pay. The scheduled contribution rates first came into existence by the Retirement System Funding and Administration Act of 2017 as last amended by Act 135 and a subsequent budget proviso. These contribution rates include the cost of incidental death benefits.



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

	July 1, 2024	July 1, 2023
	(1)	(2)
1. Active members		
a. Service retirement	\$ 29,768,202	\$ 27,730,547
b. Deferred termination benefits and refunds	2,383,664	1,750,584
c. Survivor benefits	748,015	858,829
d. Disability benefits	735,936	1,046,549
e. Total	\$ 33,635,817	\$ 31,386,509
2. Retired members		
a. Service retirement	\$ 32,906,047	\$ 32,000,828
b. Disability retirement	1,416,405	1,463,751
c. Beneficiaries	1,561,463	1,496,137
d. Incidental death benefits	215,840	209,091
e. Total	\$ 36,099,755	\$ 35,169,807
3. Inactive members		
a. Vested terminations	\$ 1,253,101	\$ 1,194,678
b. Nonvested terminations	574,998	526,450
c. Total	\$ 1,828,099	\$ 1,721,128
4. Total actuarial present value of future benefits	\$ 71,563,671	\$ 68,277,444



## Analysis of Normal Cost

	July 1, 2024 (1)	July 1, 2023 (2)
1. Total normal cost rate		
a. Service retirement	7.38%	7.44%
b. Deferred termination benefits and refunds	2.74%	2.48%
c. Survivor benefits	0.31%	0.36%
d. Disability benefits	<u>0.31%</u>	<u>0.43%</u>
e. Total	10.74%	10.71%
2. Administrative expenses	0.18%	0.18%
3. Less: member contribution rate	<u>9.00%</u>	<u>9.00%</u>
4. Net employer normal cost rate	1.92%	1.89%

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**Results of July 1, 2024 Valuation**  
(Dollar amounts expressed in thousands)

	July 1, 2024
	(1)
1. <u>Actuarial Present Value of Future Benefits</u>	
a. Present retired members and beneficiaries	\$ 36,099,755
b. Present active and inactive members	35,463,916
c. Total actuarial present value	\$ 71,563,671
2. <u>Present Value of Future Normal Contributions</u>	
a. Member	\$ 8,142,715
b. Employer	1,281,859
c. Total future normal contributions	\$ 9,424,574
3. <u>Actuarial Liability</u>	\$ 62,139,097
4. <u>Current Actuarial Value of Assets</u>	\$ 37,015,945
5. <u>Unfunded Actuarial Liability</u>	\$ 25,123,152
6. <u>UAAL Amortization Rates Based on an Employer Contribution Rate of 18.56%</u>	
a. Active members	16.64%
b. ORP members	13.56%
c. Re-employed retirees (including employee contributions)	27.56%
7. <u>Unfunded Actuarial Liability Liquidation Period</u>	14 years

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

**Actuarial Balance Sheet**  
(Dollar amounts expressed in thousands)

	July 1, 2024	July 1, 2023
	(1)	(2)
<b>1. <u>Assets</u></b>		
a. Current assets (actuarial value)		
i. Employee annuity savings fund	\$ 11,728,326	\$ 11,155,045
ii. Employer annuity accumulation fund	25,287,619	23,098,825
iii. Total current assets	\$ 37,015,945	\$ 34,253,870
b. Present value of future member contributions	\$ 8,142,715	\$ 7,884,058
c. Present value of future employer contributions		
i. Normal contributions	\$ 1,281,859	\$ 1,229,337
ii. Accrued liability contributions	25,123,152	24,910,179
iii. Total future employer contributions	\$ 26,405,011	\$ 26,139,516
d. Total assets	\$ 71,563,671	\$ 68,277,444
<b>2. <u>Liabilities</u></b>		
a. Employee annuity savings fund		
i. Past member contributions	\$ 11,728,326	\$ 11,155,045
ii. Present value of future member contributions	8,142,715	7,884,058
iii. Total contributions to employee annuity savings fund	\$ 19,871,041	\$ 19,039,103
b. Employer annuity accumulation fund		
i. Benefits currently in payment	\$ 36,099,755	\$ 35,169,807
ii. Benefits to be provided to other members	15,592,875	14,068,534
iii. Total benefits payable from employer annuity accumulation fund	\$ 51,692,630	\$ 49,238,341
c. Total liabilities	\$ 71,563,671	\$ 68,277,444

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

Item (1)	July 1, 2024 (2)	July 1, 2023 (3)
1. Cash and cash equivalents (operating cash)	\$ 3,048,335	\$ 2,245,797
2. Receivables	931,888	565,528
3. Investments		
a. Short-term securities	\$ 198,938	\$ 120,151
b. Fixed income (global)	1,070,675	1,574,960
c. Global public equities	16,876,914	14,841,207
d. Alternative investments	16,034,474	15,840,140
e. Total investments	<u>\$ 34,181,001</u>	<u>\$ 32,376,458</u>
4. Securities lending cash collateral invested	\$ 258,217	\$ 1,443
5. Prepaid administrative expenses	411	492
6. Capital assets, net of accumulated depreciation	<u>1,541</u>	<u>1,613</u>
7. Total assets	<u>\$ 38,421,393</u>	<u>\$ 35,191,331</u>
8. Liabilities		
a. Due to other systems	\$ 142	\$ 307
b. Accounts payable	29,820	761,616
c. Investment fees payable	3,668	2,535
d. Obligations under securities lending	258,217	1,443
e. Due to South Carolina Retiree Health Insurance Trust Fund	105,260	84,030
f. Benefit payable	6,998	7,266
g. Other liabilities	97,796	47,172
h. Total liabilities	<u>\$ 501,901</u>	<u>\$ 904,369</u>
9. Total market value of assets available for benefits (Item 7 - Item 8.h.)	<u>\$ 37,919,492</u>	<u>\$ 34,286,962</u>
10. Asset allocation (investments) <sup>1</sup>		
a. Short-term securities	10.4%	5.9%
b. Fixed income	2.8%	4.6%
c. Public equities	44.5%	43.3%
d. Alternative investments	42.3%	46.2%
e. Total investments	<u>100.0%</u>	<u>100.0%</u>

<sup>1</sup> 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.



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

	Year Ending	
	July 1, 2024 (1)	July 1, 2023 (2)
1. Value of assets at beginning of year	\$ 34,286,962	\$ 32,212,627
2. Revenue for the year		
a. Contributions		
i. Member contributions	\$ 1,117,409	\$ 1,035,919
ii. Employer contributions	2,463,393	2,133,735
ii. Nonemployer contributions	88,706	88,706
iii. Total	\$ 3,669,508	\$ 3,258,360
b. Income		
i. Interest, dividends, and other income	\$ 532,765	\$ 465,593
ii. Investment expenses	(412,400)	(398,686)
iii. Net	\$ 120,365	\$ 66,907
c. Net realized and unrealized gains (losses)	3,467,680	2,250,377
d. Total revenue	\$ 7,257,553	\$ 5,575,644
3. Expenditures for the year		
a. Disbursements		
i. Refunds	\$ 152,910	\$ 145,376
ii. Regular annuity benefits	3,422,601	3,309,645
iii. Other benefit payments	29,549	26,947
iv. Transfers to other systems	1,808	2,135
v. Total	\$ 3,606,868	\$ 3,484,103
b. Administrative expenses and depreciation	18,155	17,206
c. Total expenditures	\$ 3,625,023	\$ 3,501,309
4. Increase in net assets (Item 2. - Item 3.)	\$ 3,632,530	\$ 2,074,335
5. Value of assets at end of year (Item 1. + Item 4.)	\$ 37,919,492	\$ 34,286,962
6. Net external cash flow		
a. Dollar amount	\$ 44,485	\$ (242,949)
b. Percentage of market value	0.1%	-0.7%

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

		Year Ending June 30, 2024																																								
1.	Actuarial value of assets at beginning of year	\$ 34,253,870																																								
2.	Market value of assets at beginning of year	\$ 34,286,962																																								
3.	Net new investments																																									
a.	Contributions	\$ 3,669,508																																								
b.	Disbursements	(3,625,023)																																								
c.	Subtotal	44,485																																								
4.	Market value of assets at end of year	\$ 37,919,492																																								
5.	Net earnings (Item 4. - Item 2. - Item 3.c.)	\$ 3,588,045																																								
6.	Assumed investment return rate for fiscal year	7.00%																																								
7.	Expected return (Item 6. x (Item 2. + 1/2 Item 3.c))	\$ 2,401,644																																								
8.	Excess/(Deficit) return (Item 5. - Item 7.)	\$ 1,186,401																																								
9.	Excess/(Deficit) return on assets as of June 30, 2024:																																									
	<table style="width: 100%; border-collapse: collapse; margin-left: 40px;"> <thead> <tr> <th style="width: 5%;"></th> <th style="text-align: center; border-bottom: 1px solid black;">Fiscal Year Ending June 30,</th> <th style="text-align: center; border-bottom: 1px solid black;">Excess/(Deficit) Return</th> <th style="text-align: center; border-bottom: 1px solid black;">Percent Deferred</th> <th style="text-align: center; border-bottom: 1px solid black;">Deferred Amount</th> </tr> <tr> <td></td> <th style="text-align: center;">(1)</th> <th style="text-align: center;">(2)</th> <th style="text-align: center;">(3)</th> <th style="text-align: center;">(4)</th> </tr> </thead> <tbody> <tr> <td>a.</td> <td style="text-align: center;">2024</td> <td style="text-align: right;">\$ 1,186,401</td> <td style="text-align: center;">80%</td> <td style="text-align: right;">\$ 949,121</td> </tr> <tr> <td>b.</td> <td style="text-align: center;">2023</td> <td style="text-align: right;">70,903</td> <td style="text-align: center;">60%</td> <td style="text-align: right;">42,542</td> </tr> <tr> <td>c.</td> <td style="text-align: center;">2022</td> <td style="text-align: right;">(3,161,099)</td> <td style="text-align: center;">40%</td> <td style="text-align: right;">(1,264,440)</td> </tr> <tr> <td>d.</td> <td style="text-align: center;">2021</td> <td style="text-align: right;">5,881,622</td> <td style="text-align: center;">20%</td> <td style="text-align: right;">1,176,324</td> </tr> <tr> <td>e.</td> <td style="text-align: center;">2020</td> <td style="text-align: right;">(2,398,098)</td> <td style="text-align: center;">0%</td> <td style="text-align: right;">0</td> </tr> <tr> <td>f.</td> <td style="text-align: center;">Total</td> <td></td> <td></td> <td style="text-align: right; border-top: 1px solid black;">\$ 903,547</td> </tr> </tbody> </table>		Fiscal Year Ending June 30,	Excess/(Deficit) Return	Percent Deferred	Deferred Amount		(1)	(2)	(3)	(4)	a.	2024	\$ 1,186,401	80%	\$ 949,121	b.	2023	70,903	60%	42,542	c.	2022	(3,161,099)	40%	(1,264,440)	d.	2021	5,881,622	20%	1,176,324	e.	2020	(2,398,098)	0%	0	f.	Total			\$ 903,547	
	Fiscal Year Ending June 30,	Excess/(Deficit) Return	Percent Deferred	Deferred Amount																																						
	(1)	(2)	(3)	(4)																																						
a.	2024	\$ 1,186,401	80%	\$ 949,121																																						
b.	2023	70,903	60%	42,542																																						
c.	2022	(3,161,099)	40%	(1,264,440)																																						
d.	2021	5,881,622	20%	1,176,324																																						
e.	2020	(2,398,098)	0%	0																																						
f.	Total			\$ 903,547																																						
10.	Actuarial value of assets as of June 30, 2024 (Item 4. - Item 9.f.)	\$ 37,015,945																																								
11.	Expected actuarial value as of June 30, 2024	\$ 36,697,683																																								
12.	Asset gain (loss) for year (Item 10. - Item 11.)	\$ 318,262																																								
13.	Asset gain (loss) as % of the actuarial value of assets	0.9%																																								
14.	Ratio of actuarial value to market value	97.6%																																								



**Estimation of Yields**  
(Dollar amounts expressed in thousands)

	Year Ending	
	July 1, 2024 (1)	July 1, 2023 (2)
1. Market value yield		
a. Beginning of year market assets	\$ 34,286,962	\$ 32,212,627
b. Contributions to fund during the year	3,669,508	3,258,360
c. Disbursements	(3,625,023)	(3,501,309)
d. Investment income (net of investment expenses)	<u>3,588,045</u>	<u>2,317,284</u>
e. End of year market assets	\$ 37,919,492	\$ 34,286,962
f. Estimated dollar-weighted market value yield	10.5%	7.2%
2. Actuarial value yield		
a. Beginning of year actuarial assets	\$ 34,253,870	\$ 32,250,013
b. Contributions to fund during the year	3,669,508	3,258,360
c. Disbursements	(3,625,023)	(3,501,309)
d. Investment income (net of investment expenses)	<u>2,717,590</u>	<u>2,246,806</u>
e. End of year actuarial assets	\$ 37,015,945	\$ 34,253,870
f. Estimated actuarial value yield	7.9%	7.0%



**Schedule of Funding Progress**  
(Dollar amounts expressed in thousands)

July 1,	Actuarial Value of	Actuarial Accrued	Unfunded Actuarial Accrued Liability	Funded Ratio	Annual Covered	UAAL as % of
<u>July 1,</u>	<u>Assets (AVA)</u>	<u>Liability (AAL)</u>	<u>(UAAL) (3) - (2)</u>	<u>(2)/(3)</u>	<u>Payroll<sup>1</sup></u>	<u>Payroll (4)/(6)</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)
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%
2017	27,241,570	48,374,725	21,133,155	56.3%	8,592,885	245.9%
2018	27,030,937	49,104,763	22,073,826	55.0%	9,183,081	240.4%
2019	27,443,804	50,438,807	22,995,003	54.4%	9,272,010	248.0%
2020	28,171,964	52,061,245	23,889,281	54.1%	9,788,610	244.1%
2021	30,346,626	54,997,995	24,651,369	55.2%	9,925,834	248.4%
2022	32,250,013	56,924,028	24,674,015	56.7%	10,429,574	236.6%
2023	34,253,870	59,164,049	24,910,179	57.9%	11,041,023	225.6%
2024	37,015,945	62,139,097	25,123,152	59.6%	11,927,904	210.6%

<sup>1</sup> Covered payroll does not include payroll attributable to members in ORP or 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, 2024
Actuarial cost method:	Entry Age Normal
Amortization method:	Level percentage of payroll
Amortization period for contribution rate:	23-year maximum, closed period <sup>1</sup>
Asset valuation method:	5-Year Smoothed
Actuarial assumptions:	
Investment rate of return <sup>2</sup>	7.00%
Projected salary increases	3.00% to 11.25% (varies by service)
Inflation	2.25%
Post-retirement benefit adjustments <sup>3</sup>	1.00%
Retiree Mortality	2020 Public Retirees of South Carolina Mortality Table for Males and Females, projected using 80% of the Scale UMP from the year 2020. Male rates are multiplied by 97% for non-educators and 95% for educators. Female rates are multiplied by 107% for non-educators and 94% for educators.

<sup>1</sup> The employer and member contribution rates are determined in accordance with Section 9-1-1085 of the South Carolina Code. For 2024, the funding period determined on an actuarial value of asset basis may not exceed 23 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 85%.

<sup>2</sup> This is a prescribed assumption in Section 9-16-335 of South Carolina State Code.

<sup>3</sup> The benefit increase is the lesser of 1.00% or \$500 annually.

**Solvency Test**  
(Dollar amounts expressed in thousands)

July 1,	Actuarial Accrued Liability			Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets		
	Active Member Contributions	Retirants & Beneficiaries	Active & Inactive Members (Employer Financed)		Active	Retirants	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
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%
2017	7,938,850	30,745,598	9,690,277	27,241,570	100.0%	62.8%	0.0%
2018	8,501,051	30,760,223	9,843,489	27,030,937	100.0%	60.2%	0.0%
2019	9,106,401	31,051,873	10,280,533	27,443,804	100.0%	59.1%	0.0%
2020	9,714,420	31,534,153	10,812,672	28,171,964	100.0%	58.5%	0.0%
2021	10,241,141	33,050,214	11,706,640	30,346,626	100.0%	60.8%	0.0%
2022	10,675,964	34,071,915	12,176,149	32,250,013	100.0%	63.3%	0.0%
2023	11,155,045	35,169,807	12,839,197	34,253,870	100.0%	65.7%	0.0%
2024	11,728,326	36,099,755	14,311,016	37,015,945	100.0%	70.0%	0.0%



## **SECTION D**

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### **MEMBERSHIP INFORMATION**

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# Membership Information

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## Summary of Membership Data

	July 1, 2024 (1)	July 1, 2023 (2)
1. Active members		
a. Males	65,833	63,844
b. Females	145,054	142,141
c. Total members	210,887	205,985
d. Total annualized prior year salaries	\$ 11,569,838,972	\$ 10,697,157,927
e. Average salary	\$ 54,863	\$ 51,932
f. Average age	45.4	45.5
g. Average service	9.8	10.0
h. Member contributions with interest	\$ 10,185,257,412	\$ 9,700,948,896
i. Average contributions with interest	\$ 48,297	\$ 47,095
2. Vested inactive members		
a. Number	23,053	23,011
b. Total annual deferred benefits	\$ 196,020,364	\$ 188,599,397
c. Average annual deferred benefit	\$ 8,503	\$ 8,196
3. Nonvested inactive members		
a. Number	214,209	204,516
b. Member contributions with interest	\$ 574,998,201	\$ 526,450,142
c. Average contributions with interest	\$ 2,684	\$ 2,574
4. Service retirees		
a. Number	133,217	130,696
b. Total annual benefits	\$ 3,149,300,472	\$ 3,035,250,640
c. Average annual benefit	\$ 23,640	\$ 23,224
d. Average age at the valuation date	72.5	72.2
e. Average age at retirement date	59.4	59.3
5. Disabled retirees		
a. Number	10,486	10,845
b. Total annual benefits	\$ 158,493,443	\$ 162,139,588
c. Average annual benefit	\$ 15,115	\$ 14,951
d. Average age at the valuation date	69.1	68.5
e. Average age at retirement date	51.5	51.6
6. Beneficiaries		
a. Number	12,438	12,017
b. Total annual benefits	\$ 169,547,498	\$ 161,063,471
c. Average annual benefit	\$ 13,631	\$ 13,403
d. Average age at the valuation date	68.1	68.0

Note: Total salaries for active members is their annualized pay for the prior year.



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

	June 30, 2024 (1)	June 30, 2023 (2)
<b>1. Active Members</b>		
a. Number of state employees	61,968	59,003
Total annual compensation	\$ 3,726,104	\$ 3,305,601
b. Number of public school employees	91,976	91,423
Total annual compensation	\$ 4,763,765	\$ 4,502,180
c. Number of other agency employees	56,943	55,559
Total annual compensation	\$ 3,079,970	\$ 2,889,377
Total number of active members	210,887	205,985
Total annual compensation	\$ 11,569,839	\$ 10,697,158
<b>2. Rehired Retired Participants</b>		
a. Number of state employees	2,508	2,539
Total annual compensation	\$ 99,172	\$ 99,523
b. Number of public school employees	7,166	6,447
Total annual compensation	\$ 321,248	\$ 268,319
c. Number of other agency employees	2,089	2,074
Total annual compensation	\$ 96,508	\$ 96,119
Number of rehired retired members	11,763	11,060
Total annual compensation	\$ 516,928	\$ 463,961
<b>3. ORP Participants</b>		
a. Number of state employees	19,806	18,744
Total annual compensation	\$ 1,486,585	\$ 1,334,198
b. Number of public school employees	12,894	12,637
Total annual compensation	\$ 674,840	\$ 624,144
Number of ORP members	32,700	31,381
Total annual compensation	\$ 2,161,425	\$ 1,958,342
<b>4. All Groups Combined</b>		
a. Number of state employees	84,282	80,286
Total annual compensation	\$ 5,311,861	\$ 4,739,322
b. Number of public school employees	112,036	110,507
Total annual compensation	\$ 5,759,853	\$ 5,394,643
c. Number of other agency employees	59,032	57,633
Total annual compensation	\$ 3,176,478	\$ 2,985,496
Total number members	255,350	248,426
Total annual compensation	\$ 14,248,192	\$ 13,119,461

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



## Summary of Historical Active Membership

July 1, (1)	Number of Employers <sup>2</sup> (2)	Active Members		Covered Payroll <sup>1</sup>		Average Annual Pay		Average Age (9)	Average Service (10)
		Number (3)	Percent Increase /(Decrease) (4)	Amount in Thousands (5)	Percent Increase /(Decrease) (6)	Amount (7)	Percent Increase /(Decrease) (8)		
2010	800	190,239	-1.1%	7,769,820	-4.7%	40,842	1.20%	45.2	10.2
2011	803	187,611	-1.4%	7,687,558	-1.1%	40,976	0.33%	45.5	10.5
2012	806	185,748	-1.0%	7,356,231	-4.3%	39,603	-3.35%	45.3	10.4
2013	808	184,690	-0.6%	7,434,820	1.1%	40,256	1.65%	45.2	10.2
2014	810	185,265	0.3%	7,539,996	1.4%	40,698	1.10%	45.2	10.2
2015	816	187,318	1.1%	7,765,588	3.0%	41,457	1.86%	45.1	10.2
2016	812	190,923	1.9%	8,213,042	5.8%	43,018	3.77%	45.1	10.1
2017	807	193,985	1.6%	8,592,885	4.6%	44,297	2.97%	45.1	10.1
2018	812	196,184	1.1%	8,797,592	2.4%	44,844	1.23%	45.2	10.1
2019	814	200,264	2.1%	9,272,010	5.4%	46,299	3.25%	45.3	10.2
2020	817	201,144	0.4%	9,788,610	5.6%	48,665	5.11%	45.5	10.3
2021	807	199,162	-1.0%	9,925,834	1.4%	49,838	2.41%	45.5	10.4
2022	809	200,989	0.9%	10,429,574	5.1%	51,891	4.12%	45.5	10.3
2023	809	205,985	2.5%	11,041,023	5.9%	53,601	3.30%	45.5	10.0
2024	824	210,887	2.4%	11,927,904	8.0%	56,561	5.52%	45.4	9.8

<sup>1</sup> Covered payroll is the annualized, projected compensation for the following year and does not include payroll attributable to members in ORP or working retirees.

<sup>2</sup> Based on the number of employers that made a contribution during FY 2024. Also, each agency is considered to be separate participating employer for disclosure in this schedule.



## Distribution of Active Members by Age and by Years of Service

Attained Age	Years of Credited Service												Total	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	Count & Avg. Comp.	
Under 20	878 \$15,784	145 \$14,142	22 \$13,532	1 \$16,472	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	1,046 \$15,510
20-24	4,076 \$28,301	2,961 \$35,927	1,314 \$40,273	372 \$39,030	136 \$41,233	52 \$34,134	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	8,911 \$33,280
25-29	3,698 \$35,592	3,884 \$41,547	3,291 \$45,260	2,512 \$47,617	1,823 \$49,340	2,860 \$51,508	27 \$41,497	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	18,095 \$44,207
30-34	2,890 \$35,949	2,923 \$41,531	2,209 \$45,809	1,546 \$49,029	1,513 \$50,878	7,752 \$54,656	1,832 \$59,700	25 \$46,226	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	20,690 \$48,984
35-39	2,674 \$35,904	2,514 \$41,333	2,052 \$45,526	1,331 \$50,061	1,227 \$53,341	6,349 \$57,575	5,620 \$64,628	1,755 \$67,755	34 \$58,612	0 \$0	0 \$0	0 \$0	0 \$0	23,556 \$54,129
40-44	2,392 \$36,866	2,258 \$42,773	1,946 \$46,825	1,330 \$48,353	1,185 \$51,721	5,677 \$58,180	4,157 \$66,540	5,715 \$71,159	1,600 \$73,027	41 \$65,937	0 \$0	0 \$0	0 \$0	26,301 \$58,348
45-49	1,898 \$37,306	1,974 \$43,448	1,576 \$47,438	1,082 \$48,118	1,036 \$53,027	5,144 \$56,804	3,540 \$65,672	3,928 \$71,469	4,593 \$77,835	1,780 \$79,814	9 \$86,826	0 \$0	0 \$0	26,560 \$61,901
50-54	1,843 \$39,408	1,904 \$43,853	1,569 \$47,600	1,085 \$51,398	987 \$51,599	4,958 \$56,698	3,586 \$62,005	3,766 \$69,393	3,713 \$73,503	4,655 \$81,442	623 \$85,274	14 \$73,916	14 \$73,916	28,703 \$63,007
55-59	1,603 \$38,213	1,604 \$41,700	1,364 \$46,563	960 \$48,013	854 \$48,576	4,361 \$53,779	3,150 \$60,122	3,390 \$62,211	3,048 \$67,573	3,021 \$74,184	1,473 \$83,241	359 \$80,389	359 \$80,389	25,187 \$59,379
60-64	1,036 \$32,272	1,099 \$40,262	989 \$43,523	682 \$43,598	722 \$45,743	3,633 \$52,449	2,528 \$58,383	2,803 \$59,563	2,488 \$63,253	2,099 \$68,882	914 \$76,360	713 \$83,937	713 \$83,937	19,706 \$56,844
65 & Over	964 \$23,520	1,028 \$28,259	821 \$28,272	515 \$32,692	536 \$34,419	2,559 \$42,468	1,652 \$49,882	1,309 \$58,458	992 \$60,677	838 \$64,943	434 \$74,857	484 \$84,123	484 \$84,123	12,132 \$46,624
Total	23,952 \$33,806	22,294 \$40,420	17,153 \$44,722	11,416 \$47,423	10,019 \$49,715	43,345 \$54,808	26,092 \$62,261	22,691 \$67,127	16,468 \$71,215	12,434 \$76,162	3,453 \$80,742	1,570 \$83,094	1,570 \$83,094	210,887 \$54,863

Note: Average compensation for active members is their annualized pay for the prior year.



## Schedule of Annuitants by Type of Benefit

Type of Benefit/ Form of Payment (1)	Number (2)	Annual Benefits Amount (3)	Average Monthly Benefit (4)
<b>Service:</b>			
Maximum & QDRO	90,801	\$ 2,021,704,724	\$ 1,855
100% J&S	24,574	626,139,436	2,123
50% J&S	14,358	408,596,101	2,371
10 Years C&L	156	4,164,846	2,225
Level Income	<u>3,328</u>	<u>88,695,365</u>	2,221
Subtotal:	133,217	\$ 3,149,300,472	1,970
<b>Disability:</b>			
Maximum	8,519	\$ 130,711,568	\$ 1,279
100% J&S	1,269	16,087,598	1,056
50% J&S	624	10,636,788	1,421
10 Years C&L	<u>74</u>	<u>1,057,489</u>	1,191
Subtotal:	10,486	\$ 158,493,443	1,260
Beneficiaries:	12,438	\$ 169,547,498	\$ 1,136
<b>Total:</b>	<u>156,141</u>	<u>\$ 3,477,341,413</u>	<u>\$ 1,856</u>

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## Distribution of Annuitants by Monthly Benefit

Monthly Benefit Amount		Number of Annuitants	Female	Male	Average Service
(1)		(2)	(3)	(4)	(5)
	Under \$200	6,655	4,151	2,504	6.87
\$	200 - 399	12,315	8,800	3,515	10.38
	400 - 599	12,819	9,185	3,634	13.12
	600 - 799	11,201	8,205	2,996	15.80
	800 - 999	10,123	7,417	2,706	18.06
	1,000 - 1,199	9,272	6,787	2,485	20.10
	1,200 - 1,399	8,324	6,108	2,216	22.00
	1,400 - 1,599	7,385	5,393	1,992	23.24
	1,600 - 1,799	7,224	5,223	2,001	24.45
	1,800 - 1,999	6,616	4,743	1,873	25.59
	2,000 - 2,199	6,345	4,516	1,829	26.45
	2,200 - 2,399	6,821	4,949	1,872	27.15
	2,400 - 2,599	7,385	5,511	1,874	27.67
	2,600 - 2,799	7,748	5,915	1,833	28.09
	2,800 - 2,999	7,424	5,719	1,705	28.40
	3,000 - 3,199	5,734	4,180	1,554	28.82
	3,200 - 3,399	4,412	3,095	1,317	29.11
	3,400 - 3,599	3,446	2,286	1,160	29.32
	3,600 - 3,799	2,563	1,615	948	29.56
	3,800 - 3,999	2,058	1,252	806	29.73
	4,000 - 4,199	1,766	1,015	751	29.71
	4,200 - 4,399	1,467	809	658	29.89
	4,400 - 4,599	1,249	668	581	30.10
	4,600 - 4,799	1,021	494	527	30.16
	4,800 - 4,999	785	366	419	30.50
	5,000 - 5,499	1,380	609	771	30.56
	5,500 - 5,999	843	362	481	30.78
	6,000 - 6,499	528	204	324	31.00
	6,500 - 6,999	364	114	250	30.99
	7,000 - 7,499	229	72	157	31.62
	7,500 - 7,999	171	58	113	31.26
	8,000 & Over	468	126	342	31.91
Total		156,141	109,947	46,194	21.89

Average age at retirement for service retirees as of July 1, 2024 is age 59.4.



### Distribution of Average Annual Benefit by Employer and Age

Current Age	Public School		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	885	\$ 8,980	808	\$ 8,244	717	\$ 8,389	2,410	\$ 8,557
50 - 54	1,676	30,394	753	24,802	714	20,060	3,143	26,707
55 - 59	3,521	32,352	1,992	28,088	1,569	23,208	7,082	29,127
60 - 64	7,950	26,193	5,240	26,210	3,497	21,764	16,687	25,270
65 - 69	13,995	22,944	9,944	23,953	6,599	19,493	30,538	22,527
70 - 74	16,698	22,776	11,964	23,621	7,009	18,193	35,671	22,159
75 - 79	14,358	22,342	10,517	24,373	5,422	15,648	30,297	21,849
80 - 84	7,766	20,075	6,357	24,248	2,953	13,560	17,076	20,502
85 - 89	3,751	18,514	3,291	23,569	1,439	12,550	8,481	19,464
90 And Over	2,313	18,301	1,722	22,225	721	12,131	4,756	18,786
Total	72,913	\$ 22,917	52,588	\$ 24,069	30,640	\$ 17,647	156,141	\$ 22,271

The annuitant count includes all annuity recipients including disabled retirees and surviving beneficiaries. The average annual benefit amounts also include post-retirement benefit adjustments (COLAs) provided to annuitants after their benefit commencement date.



**Schedule of Retirants Added to And Removed from Rolls**  
(Dollar amounts except average allowance expressed in thousands)

Year Ended	Added to Rolls		Removed from Rolls		Rolls End of the Year		% Increase in Annual Benefit	Average Annual Benefit
	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
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
2017	6,044	132,616	3,611	57,354	140,288	2,841,725	2.7%	20,256
2018	5,841	127,882	3,851	63,463	142,278	2,906,144	2.3%	20,426
2019	5,753	130,114	3,739	61,746	144,292	2,974,512	2.4%	20,615
2020	5,805	141,580	3,966	69,050	146,131	3,047,042	2.4%	20,851
2021	6,781	168,053	4,904	85,201	148,008	3,129,894	2.7%	21,147
2022	7,533	193,496	4,685	81,732	150,856	3,241,658	3.6%	21,488
2023	7,197	200,048	4,495	83,252	153,558	3,358,454	3.6%	21,871
2024	6,933	200,362	4,350	81,474	156,141	3,477,341	3.5%	22,271

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





## SECTION E

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### ASSESSMENT AND DISCLOSURE OF RISK

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# Risks Associated with Measuring the Accrued Liability And Actuarially Determined Contribution

(As Required by ASOP No. 51)

The determination of SCRS's accrued liability, actuarially determined contribution, and calculated funding period requires the use of assumptions regarding future economic and demographic experience. The risk measures illustrated in this section are intended to aid stakeholders in understanding the effects when future experience differs from the assumptions used in performing an actuarial valuation. These risk measures may also help with illustrating the potential volatility in the funded status and actuarially determined contributions that result from differences between actual experience and the expected experience based on the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience (economic and demographic) differing from the assumptions, changes in assumptions due to changing conditions, changes in contribution requirements due to modifications to the funding policy, and changes in the liability and cost due to changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

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

- Investment risk – actual investment returns may differ from expected returns;
- Longevity risk – members may live longer or shorter than expected and receive pensions for a time period different than assumed;
- Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liabilities and contributions differing from expected;
- Salary and payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liabilities and contributions differing from expected;
- Asset/Liability mismatch – changes in assets may be inconsistent with changes in liabilities, thereby altering the relative difference between the assets and liabilities, which may alter the funded status and contribution requirements;
- Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions are not made in accordance with the System's funding policy or Statute, other anticipated payments to the plan are not made, or material changes occur in the anticipated number of covered employees, covered payroll, or another relevant contribution base.

On the other hand, effects of certain experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate of return, the funded status of the plan can be expected to decrease (or increase) more than anticipated.

## Employer Risk with Contribution Rates

The contribution rate in this report was established in accordance with Section 9-1-1085 of the South Carolina Code, which first came into existence by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent budget proviso. However, stakeholders should be aware that the scheduled contribution rates specified in State Code do not necessarily guarantee that the contribution requirements will not increase in a future year.

These scheduled contribution rates in the Code are intended to finance the unfunded actuarial accrued liability over a reasonable time period and provide stability in the employer contribution rates so employers are better able to budget their pension cost in future years. The greater the difference between the calculated funding period based on the contribution rate specified in State Code and the maximum permitted funding period also specified in State Code, the greater the ability for the System to incur some adverse experience without requiring an increase in the employer contribution rate.

However, providing stability in the contribution rates means that projecting the year the fund actually attains a 100% funded ratio becomes less certain. If actual experience is more favorable than assumed, then the year the fund attains a 100% funded ratio will be earlier than projected, but the projected year the fund attains a 100% funded ratio will be later than projected if actual experience is less favorable than assumed.

## Plan Maturity Measures

Risks faced by a pension plan evolve over time. A relatively new plan with virtually no assets and paying few benefits will experience lower investment risk than a mature plan with a significant amount of assets and large number of members receiving benefits. There are a few measures that can assist stakeholders in understanding and comparing the maturity of a plan to other systems, which include:

- Ratio of market value of assets to payroll: The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. If assets are approximately the same as covered payroll, an investment return that is 5% different than assumed would equal 5% of payroll. In another example, if the assets are approximately twice as large as covered payroll, an investment return that is 5% different than assumed would equal 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.
- Ratio of actuarial accrued liability to payroll: The ratio of actuarial accrued liability to payroll can be used as a measure to indicate the potential volatility of contributions due to volatility in the liability experience. For instance, if the actuarial accrued liability is 5 times the size of the covered payroll, then a change in the liability that is 2% different than expected would be a change in magnitude that is 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.

- Ratio of active to retired members: A relatively mature open plan is likely to have close to the same number of actives to retirees resulting in a ratio that is around 1.0. On the other hand, a super-mature plan, or a plan that is closed to new entrants will have more retirees than active members resulting in a ratio below 1.0. As this ratio declines, a larger portion of the total actuarial accrued liability in the System is attributable to retirees. This metric also typically moves in tandem with the liability to payroll metric, which provides an indication of potential contribution volatility.
- Ratio of net cash flow to market value of assets: A negative net cash flow means that benefit payments exceed contributions and the plan is depending on investment earnings and possibly existing funds to make payments to retirees. A certain amount of negative net cash flow is expected to occur when benefits are prefunded and the plan has matured. However, a relatively large negative net cash flow as a percent of assets may be an indication of the need for additional contributions for a plan with a low funded ratio.

The following exhibit provides a summary of these measures for SCRS. We have also included these metrics for the prior four years so stakeholders can identify how these measures are trending.

Measure	July 1,				
	2024	2023	2022	2021	2020
Ratio of the market value of assets to total payroll	2.60	2.56	2.55	2.78	2.20
Ratio of actuarial accrued liability to payroll	4.27	4.41	4.50	4.56	4.36
Ratio of actives to retirees and beneficiaries	1.35	1.34	1.33	1.35	1.38
Ratio of net cash flow to market value of assets	0.1%	-0.7%	-1.4%	-1.7%	-1.9%

Note: For purposes of this analysis, includes payroll for all members that the System receives contributions, including working retirees and members in the ORP.

## Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a low-default-risk obligation measure (LDROM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

*“The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the “right” liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan’s funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.”*

The LDROM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The current model expects lower costs but with higher investment risk, which creates less certainty and a possibility of higher costs. Thus, the difference between the two measures (Valuation and LDROM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio. However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 5.32%.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

South Carolina Retirement System	
Valuation Accrued Liability	LDROM
\$62,139 Million	\$75,541 Million

Again, the difference between the two measures, or \$13,402 million, is one illustration of the savings the sponsor anticipates by assuming investment risk in a diversified portfolio.

Disclosures: Discount rate used to calculate LDROM: 5.32% Intermediate FTSE Pension Discount Curve as of June 30, 2024. This measure may not be appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.

## **APPENDIX A**

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### **ACTUARIAL ASSUMPTIONS AND METHODS**

## 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 7.00% composed of a 2.25% inflation component and a 4.75% 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				
Years of Service	General Employees		Teachers	
	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	6.65%	9.65%	8.25%	11.25%
2	4.15%	7.15%	8.00%	11.00%
3	2.40%	5.40%	3.75%	6.75%
4	1.90%	4.90%	2.75%	5.75%
5	1.65%	4.65%	2.50%	5.50%
6	1.40%	4.40%	2.25%	5.25%
7	1.40%	4.40%	2.00%	5.00%
8	1.15%	4.15%	1.75%	4.75%
9	1.15%	4.15%	1.75%	4.75%
10	0.90%	3.90%	1.50%	4.50%
11	0.90%	3.90%	1.50%	4.50%
12	0.65%	3.65%	1.25%	4.25%
13	0.65%	3.65%	1.00%	4.00%
14	0.65%	3.65%	1.00%	4.00%
15	0.65%	3.65%	0.75%	3.75%
16	0.65%	3.65%	0.75%	3.75%
17	0.65%	3.65%	0.50%	3.50%
18	0.65%	3.65%	0.50%	3.50%
19	0.40%	3.40%	0.50%	3.50%
20	0.40%	3.40%	0.50%	3.50%
21-29	0.15%	3.15%	0.25%	3.25%
30+	0.00%	3.00%	0.00%	3.00%

## Active Member Decrement Rates

- a. Assumed rate of Service Retirement 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.

Class Two Annual Age Based Retirement Rates						
Age	General Employees			Public School Employees		
	Reduced		Normal*	Reduced		Normal*
	<25 YOS	>= 25 YOS		<25 YOS	>= 25 YOS	
55	0%	7%	0%	0%	5%	0%
56	0%	7%	0%	0%	6%	0%
57	0%	7%	0%	0%	7%	0%
58	0%	7%	0%	0%	8%	0%
59	0%	7%	0%	0%	9%	0%
60	5%	7%	0%	10%	15%	0%
61	5%	7%	0%	10%	15%	0%
62	15%	17%	0%	15%	20%	0%
63	15%	17%	0%	15%	20%	0%
64	15%	17%	0%	15%	20%	0%
65	0%		25%	0%		25%
66	0%		30%	0%		30%
67	0%		30%	0%		30%
68	0%		25%	0%		25%
69	0%		25%	0%		25%
70	0%		25%	0%		25%
71	0%		25%	0%		25%
72	0%		25%	0%		25%
73	0%		25%	0%		25%
74	0%		25%	0%		25%
75	0%		100%	0%		0%

\* Normal retirement rate 30% for general, and 40% for teachers, at ages 62 - 64 and age 65 with more than 15 years of service.

(i.e., the ages the member is eligible to concurrently commence benefits and continue employment.)



Class Two Annual Service Based Retirement Rates*		
Years of Service		
	General Employees	Teachers
28	27%	35%
29	20%	24%
30	14%	24%
31	14%	24%
32	14%	24%
33	14%	24%
34	14%	24%
35	14%	24%
36	14%	24%
37	14%	24%
38	14%	24%
39	14%	24%
40	20%	30%
41	20%	30%
42	20%	30%
43	20%	30%
44	20%	30%
45	25%	50%
46	25%	50%
47	25%	50%
48	25%	50%
49	25%	50%
50 & Over	100%	100%

\* Normal retirement rate 30% for general, and 40% for teachers, at ages 62 - 64 and age 65 with more than 15 years of service.

Class Three Annual Age Based Retirement Rates					
Age	General Employees		Public School Employees		Rule of
	Reduced	Normal*	Reduced	Normal*	
55	0%	0%	0%	0%	20%
56	0%	0%	0%	0%	20%
57	0%	0%	0%	0%	20%
58	0%	0%	0%	0%	20%
59	0%	0%	0%	0%	20%
60	5%	0%	10%	0%	20%
61	5%	0%	10%	0%	20%
62	15%	0%	15%	0%	20%
63	15%	0%	15%	0%	20%
64	15%	0%	15%	0%	20%
65	0%	25%	0%	25%	20%
66	0%	30%	0%	30%	20%
67	0%	30%	0%	30%	20%
68	0%	25%	0%	25%	20%
69	0%	25%	0%	25%	20%
70	0%	25%	0%	25%	20%
71	0%	25%	0%	25%	20%
72	0%	25%	0%	25%	20%
73	0%	25%	0%	25%	20%
74	0%	25%	0%	25%	20%
75	0%	100%	0%	0%	100%

\* Normal retirement rate 30% for general, and 40% for teachers, at ages 62 - 64 and age 65 with more than 15 years of service.

(i.e., the ages the member is eligible to concurrently commence benefits and continue employment.)

\*\* The "Rule of 90" retirement rates do not apply if the "Rule of 90" is achieved on or after age 65.

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

Disability Rates				
Age	General Employees		Public School Employees	
	Males	Females	Males	Females
25	0.0225%	0.0150%	0.0140%	0.0172%
30	0.0450%	0.0210%	0.0210%	0.0231%
35	0.0675%	0.0420%	0.0280%	0.0231%
40	0.1125%	0.0540%	0.0525%	0.0403%
45	0.1575%	0.0780%	0.0875%	0.0825%
50	0.2250%	0.1320%	0.1400%	0.1320%
55	0.3600%	0.2100%	0.2275%	0.2145%
60	0.4500%	0.3210%	0.3500%	0.3300%
64	0.5625%	0.4470%	0.4375%	0.4125%

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

c. Active Member Mortality

Rates of active member mortality are based upon the amount-weighted PUB-2010 Public Retirement Plans Mortality Table for Safety with applicable multipliers to better reflect anticipated experience and provide margin for future improvement in mortality.

Active Mortality Rates (Multiplier Applied) *				
Age	General Employees		Teachers	
	Males	Females	Males	Females
25	0.0410%	0.0120%	0.0220%	0.0110%
30	0.0520%	0.0190%	0.0300%	0.0170%
35	0.0680%	0.0300%	0.0410%	0.0260%
40	0.0960%	0.0470%	0.0570%	0.0400%
45	0.1430%	0.0720%	0.0900%	0.0620%
50	0.2180%	0.1070%	0.1490%	0.0930%
55	0.3200%	0.1570%	0.2320%	0.1350%
60	0.4660%	0.2380%	0.3570%	0.2040%
64	0.6310%	0.3440%	0.5290%	0.3070%
Multiplier	100%	100%	100%	100%

\* For purpose of determining active death benefits, 5% of active deaths of general employees and teachers are assumed to be duty related.

d. Rates of Withdrawal

1). For the first 10 years of service for general employees/11 years of service for teachers, rates are developed for each employee group and differ by gender and service. Sample rates are shown in the tables below.

Years of Service	SCRS - General Employees	SCRS - Teachers
	Male and Female	Male and Female
0	0.2300	0.1400
1	0.1700	0.1200
2	0.1400	0.1000
3	0.1111	0.0875
4	0.1023	0.0796
5	0.0941	0.0724
6	0.0866	0.0658
7	0.0797	0.0598
8	0.0734	0.0544
9	0.0675	0.0495
10	0.0622	0.0450
12	0.0527	0.0372
13	0.0485	0.0338
14	0.0446	0.0308
15	0.0410	0.0280
16	0.0378	0.0255
17	0.0348	0.0231
18	0.0320	0.0210
19	0.0294	0.0191
20	0.0271	0.0174
21	0.0249	0.0158
22	0.0230	0.0144
23	0.0211	0.0131
24	0.0194	0.0119
25	0.0179	0.0108
26	0.0165	0.0098

**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 and Over
Refund Rate:	45%	40%	35%



## Post Retirement Mortality

- a. Healthy retirees and beneficiaries – The gender-distinct South Carolina Retirees 2020 Mortality Tables. The rates are projected on a fully generational basis by the 80% of Scale UMP to account for future mortality improvements and adjusted with multipliers based on plan experience. The following are sample rates of the base table:

Nondisabled Annuitant Mortality Rates Before Projection (Multiplier Applied)				
Age	General Employees		Teachers	
	Males	Females	Males	Females
50	0.1920%	0.2192%	0.1880%	0.1926%
55	0.3243%	0.2824%	0.3176%	0.2481%
60	0.5751%	0.3863%	0.5633%	0.3393%
65	0.8761%	0.5616%	0.8580%	0.4934%
70	1.4502%	0.9097%	1.4203%	0.7992%
75	2.5442%	1.7869%	2.4918%	1.5698%
80	4.7175%	3.5220%	4.6202%	3.0941%
85	8.5346%	6.8204%	8.3587%	5.9917%
90	14.9914%	12.8871%	14.6823%	11.3214%
Multiplier	97%	107%	95%	94%

The life expectancies for a 65 year old retiree in future years based on the assumption with full generational projection are shown as follows:

Life Expectancy for an Age 65 Retiree In Years					
Employee Type / Gender	Year of Retirement				
	2020	2025	2030	2035	2040
General Employee - Male	20.8	21.1	21.4	21.6	21.9
General Employee - Female	22.8	23.1	23.4	23.6	23.9
Teacher - Male	20.9	21.2	21.5	21.8	22.1
Teacher - Female	23.8	24.1	24.3	24.6	24.8

- b. A separate table of mortality rates is used for disabled retirees based on the Pub-2010 Public Retirement Plans Disabled Mortality tables on a fully generational basis by 80% of Scale UMP to account for future mortality 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	2.2470%	1.9279%	2.0865%	1.7796%
55	2.9596%	2.2646%	2.7482%	2.0904%
60	3.5042%	2.5428%	3.2539%	2.3472%
65	4.2616%	2.9328%	3.9572%	2.7072%
70	5.4614%	3.7206%	5.0713%	3.4344%
75	7.2688%	5.2039%	6.7496%	4.8036%
80	10.2872%	7.8091%	9.5524%	7.2084%
85	15.1410%	12.1303%	14.0595%	11.1972%
90	22.7542%	17.7645%	21.1289%	16.3980%
Multiplier	140%	130%	130%	120%

## 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. 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 contribution rate is set by statute for both employees and employers. The funding period is determined, as described below, using the Entry Age Normal. 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 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 actuarial determined contribution rate and amortization period reflects additional contributions the System receives with respect to ORP participants and return to work retirees. 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.

## 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 cost (normal cost and actuarial accrued liability) due to incidental death benefits provided to members in the ORP.
- 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 the 2012 legislative changes.

- 3) The money collected on the payroll of members 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.
- 4) 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 Average Final Compensation, liabilities for active members are increased 2.14%.

### **Unused Sick Leave**

To account for the effect of unused sick leave on members' final 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% 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 ORP members and working retirees) is assumed to increase at an annual rate of 2.70%. This rate represents the underlying expected annual rate of wage inflation and does not anticipate increases in the number of members. The number rehired retirees is expected to decrease over the next two years, then remain constant to reflect the pension reform legislation enacted in 2012.

### **Other Assumptions**

1. The normal cost rate is increased by 0.18% to account for administrative expenses that are paid with plan assets.
2. 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 return to work employees by dividing the actual member contributions received during the prior fiscal year by the applicable member contribution rate and rolled-forward one year with the payroll growth assumption.
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. No surviving spouse will remarry and there will be no children's benefit.
11. 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.
12. 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.
13. Decrement relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
14. 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.
15. Benefit service: All members are assumed to accrue one year of service each year.
16. 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 employer 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.

## **APPENDIX B**

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### **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 Statement Nos. 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 9.00% of earnable compensation on and after July 1, 2017. 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.



**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.

### ***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 has at least five years of earned service credit (eight years of earned service for a Class three member) and either: (1) has at least 15 years of total service credit or (2) they are at least age 60 at the time of your death, their 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 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.

- b. Option B (100% Joint & Survivor with Pop-up): A reduced annuity payable as long as either the member or his/her beneficiary(ies) are 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(ies). 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

**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.

## **APPENDIX C**

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### **GLOSSARY**

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## 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.)
- 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.

**Decremments:** 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 Statement Nos. 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, 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.

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# Police Officers Retirement System (PORS)

ACTUARIAL VALUATION REPORT  
AS OF JULY 1, 2024

DRAFT





December 4, 2024

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

**Subject: Actuarial Valuation as of July 1, 2024**

Dear Members of the Board:

This report describes the current actuarial condition of the Police Officers Retirement System (PORS), determines the unfunded liability and calculated funding period based on the scheduled employer and member contribution rates, as well as 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 contribution rate is established in accordance with Section 9-11-225 of the South Carolina Code, which first came into existence by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent budget proviso. In accordance with that statutory schedule, as modified, the employer contribution rate in effect for the fiscal year ending June 30, 2024 is 21.24% of pay and that contribution rate will be maintained in future years.

Additionally, the Statute specifies that the maximum amortization period is 23 years as of July 1, 2024 and the maximum amortization period will decrease by one year in each of the next three years until reaching a maximum 20-year funding period on July 1, 2027. The employer contribution rate determined by an actuarial valuation must be sufficient to maintain an amortization period that does not exceed 20 years each year thereafter. Finally, the Board is not permitted to decrease the employer and member contribution rates until the funded ratio of the plan is at least 85%.

If new legislation is enacted between the valuation date and the date the contribution rate becomes effective, the General Assembly may adjust the scheduled contribution rate 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 increased from 65.9% to 67.5% in the most recent plan year. Absent unfavorable investment or liability experience, the funded ratio is projected to continue to 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 69.1%, compared to 66.0% in the prior year. The increase in the funded ratio on a market value basis is primarily due to the employer and member contribution effort to increase the financial security of the system. Specifically, plan assets earned a 10.49% return on a time weighted-basis (net of fees) as reported in the financial statement of the South Carolina Retirement Systems for the year ending June 30, 2024. The 10.4% return documented in this report was determined on a dollar-weighted basis and assumes mid-year cash flows.

#### **ASSUMPTIONS AND METHODS**

South Carolina State Code requires an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. The last experience study was conducted for the five-year period ending June 30, 2023, and the Board has adopted the assumptions recommended in that report for first use in the July 1, 2024 actuarial valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.00% for the July 1, 2024 actuarial valuation. Updated assumptions used in the July 1, 2024 valuation include:

- Updated mortality assumption for active members
- Updated mortality improvement assumption
- Increase the salary assumption for members with less than 20 years of service
- Slight increase in the rates of termination at certain ages prior to retirement eligibility
- Slight decrease in the rates of retirement at certain ages

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System. The combined effect of the assumptions used in this valuation is expected to have no significant bias.

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.

This report was prepared using our proprietary valuation model and related software, which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

#### **BENEFIT PROVISIONS**

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2024. There were no legislative changes enacted since the prior valuation that materially changed or modified the benefits that members earn or receive.



**DATA**

Member data for retired, active and inactive members was supplied as of July 1, 2024, by the PEBA staff. The staff also supplied asset information as of July 1, 2024. 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.

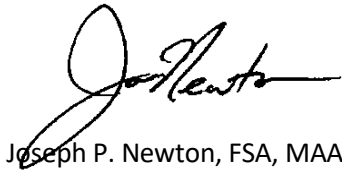
**CERTIFICATION**

We certify that the information presented herein is accurate and fairly portrays the actuarial position of PORS as of July 1, 2024.

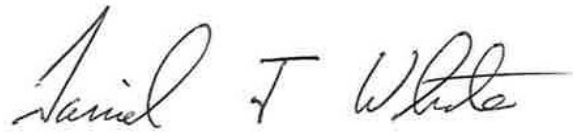
All of our work conforms with generally accepted actuarial principles and practices, and is in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of South Carolina Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and consultants. All three are also Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Each are experienced in performing valuations for large public retirement systems.

Sincerely,

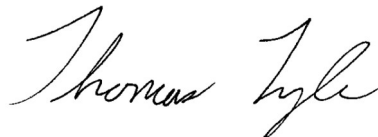
**Gabriel, Roeder, Smith & Co.**



Joseph P. Newton, FSA, MAAA, EA  
Pension Market Leader and Actuary



Daniel J. White, FSA, MAAA, EA  
Vice President and Actuary



Thomas Lyle, FSA, MAAA, EA  
Consultant

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## SECTION A

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### EXECUTIVE SUMMARY

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# Executive Summary

(Dollar amounts expressed in thousands)

	Valuation Date:	
	July 1, 2024	July 1, 2023
<b>Membership</b>		
• Number of		
- Active members	28,882	27,797
- Retirees and beneficiaries	21,787	21,367
- Inactive members	23,681	22,530
- Total	74,350	71,694
• Projected payroll of active members	\$1,898,424	\$1,601,690
• Projected payroll for all active members, including working retirees	\$2,025,734	\$1,714,682
<b>Required Contribution Rates</b>		
• Employer contribution rate <sup>1</sup>	21.24%	21.24%
• Member	9.75%	9.75%
<b>Assets</b>		
• Market value	\$7,178,119	\$6,405,925
• Actuarial value	7,009,939	6,400,701
• Return on market value	10.4%	7.3%
• Return on actuarial value	7.9%	7.0%
• Ratio - actuarial value to market value	97.7%	99.9%
• External cash flow %	1.5%	0.6%
<b>Actuarial Information</b>		
• Normal cost %	15.66%	15.22%
• Actuarial accrued liability (AAL)	\$10,386,571	\$9,706,642
• Unfunded actuarial accrued liability (UAAL)	3,376,632	3,305,941
• Funded ratio	67.5%	65.9%
• Funding period (years) <sup>2</sup>	13	16
<b>Reconciliation of UAAL</b>		
• Beginning of Year UAAL	\$3,305,941	\$3,144,867
- Interest on UAAL	231,416	220,141
- Amortization payment	(345,622)	(288,338)
- Assumption/method changes	68,762	0
- Asset experience	(59,743)	2,256
- Salary experience	204,128	246,341
- Other liability experience	(28,250)	(19,326)
- Legislative Changes	0	0
• End of Year UAAL	\$3,376,632	\$3,305,941

<sup>1</sup> The employer contribution rates is 21.24% of pay for FY 2025 and FY 2026. This scheduled contribution rate came into existence by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent budget proviso. These contribution rates include the cost of accidental and incidental death benefits.

<sup>2</sup> The funding period for 2024 is determined on an actuarial value of asset basis and is based on the contribution rate scheduled to become effective for FY 2026 (i.e. beginning July 1, 2025 and ending June 30, 2026).

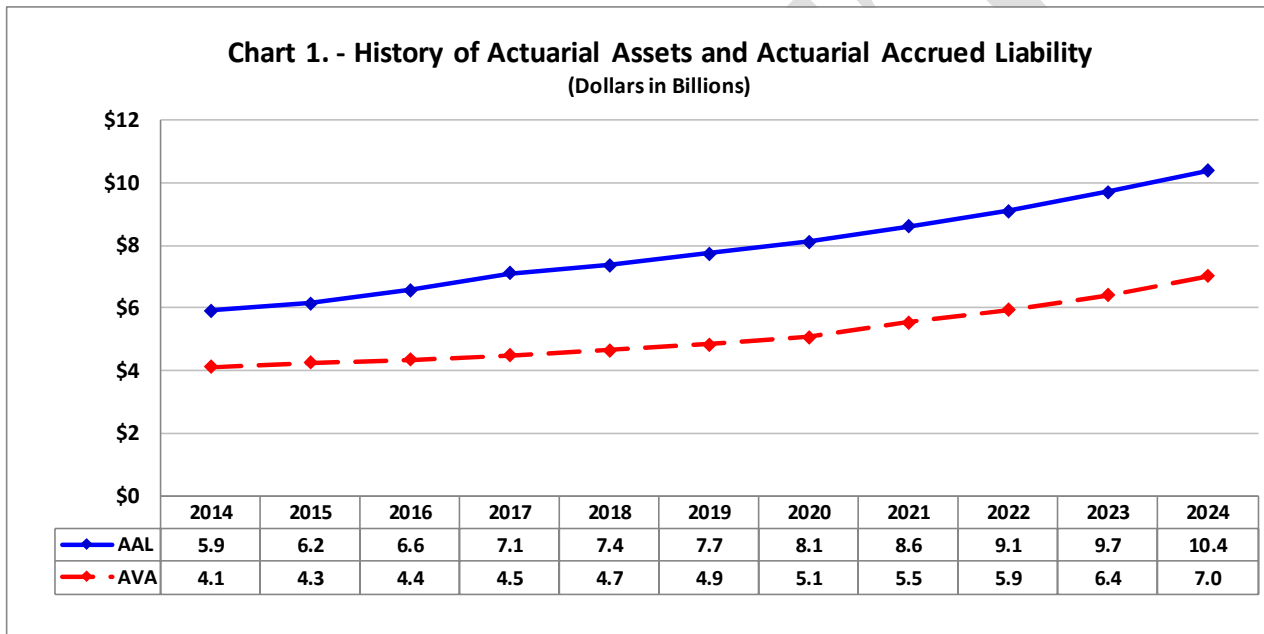




## Executive Summary (Continued)

The unfunded actuarial accrued liability increased by \$0.077 billion since the prior year’s valuation to \$3.377 billion. The largest source of this increase is \$0.204 billion loss due to individual salary increases during the prior year being higher than assumed.

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 been due to a combination of: (i) the actual investment experience being less than the System’s expected investment return assumption, (ii) assumption changes adopted in 2016, 2017, 2021, and again in 2024, and (iii) contributions that were less than the interest on the unfunded actuarial accrued liability.



The employer contribution rate is 21.24% of pay in fiscal year 2024 and future years. This employer contribution rate and the maximum amortization that is specified in state statute will, in time, result in improved financial security of the System. Finally, the Board is not permitted to decrease the employer and member contribution rates until the funded ratio of the plan is at least 85%.

## **SECTION B**

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### **DISCUSSION**

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## Discussion

The results of the July 1, 2024 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 and analyze changes in the System's financial condition. In addition, the report provides various summaries of the data.

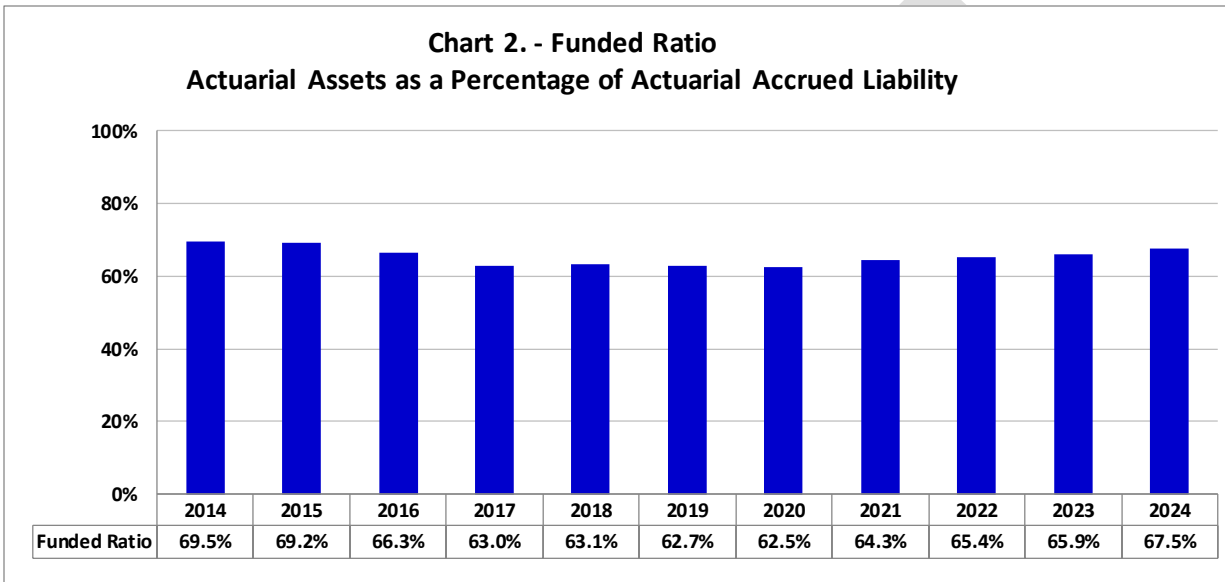
This section discusses the determination of the current funding requirements and the System's funded status, as well as changes in financial condition of the retirement system. The valuation results for the prior year are shown in this report for comparison purposes.

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. Section E provides an assessment and disclosure of risk as required by Actuarial Standards of Practice No. 51. 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.

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## Funding Progress

The funded ratio increased from 65.9% to 67.5% since the prior valuation. Chart 2 shown below, provides a 10-year history of the System’s funded ratio. The maintenance of the 21.24% employer contribution rate in effect for fiscal year 2024 and future years is projected to result in an upward trend in the funded ratio. Table 10, Schedule of Funding Progress, in the following section of the report provides additional detail regarding the funding progress of the Retirement System.

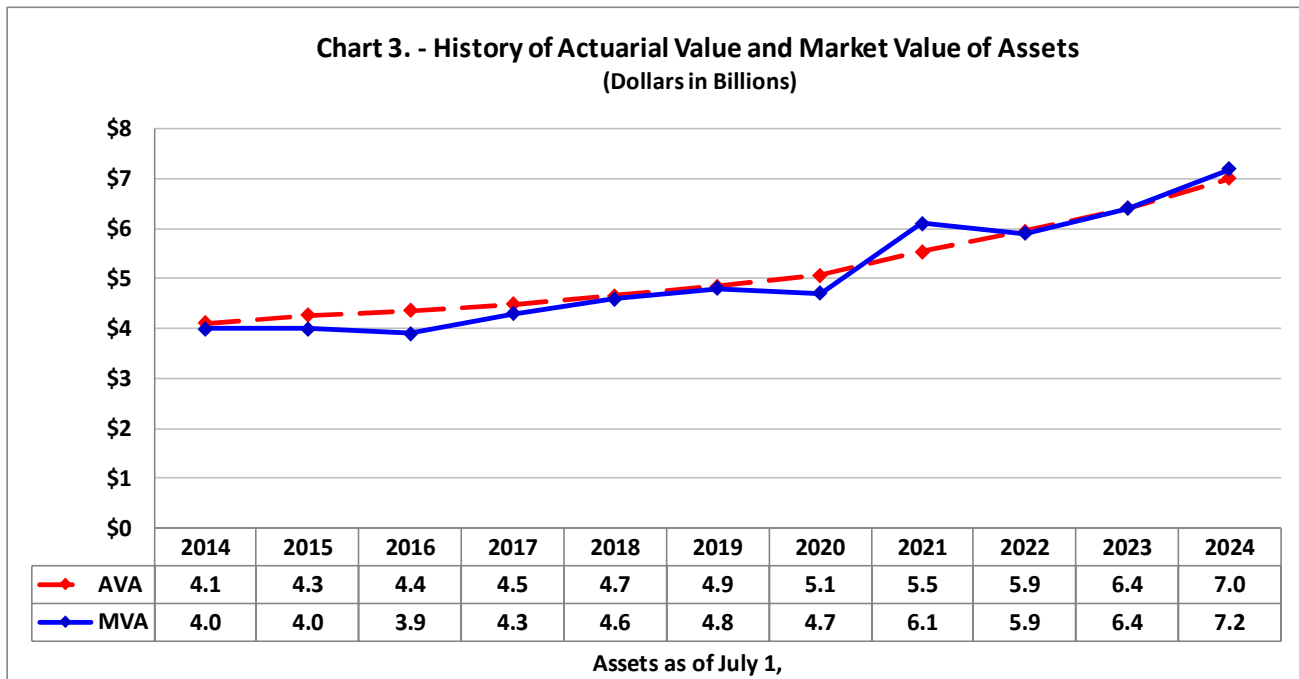


Absent future unfavorable investment or demographic experience, or legislative changes, we expect the funded ratio to continue to improve in future years. Also, we expect the dollar amount of the unfunded actuarial accrued liability, or the difference between the actuarial accrued liability and the actuarial value of assets, to gradually decrease in the coming years.

## 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 \$6.4 billion to \$7.0 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 10.4% on a dollar-weighted basis; the return on an actuarial (smoothed) asset value was 7.9%, which was greater than the 7.00% expected annual return. The difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.



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 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) increased by \$69 million to \$3.377 billion on July 1, 2024. The table below shows the source of the gains and losses and the impact of those gains and losses on the UAAL.

<b>Reconciliation of UAAL</b>	
(Dollars in thousands)	
• Beginning of Year UAAL	\$3,305,941
- Interest on UAAL	231,416
- Amortization payment	(345,622)
- Assumption/method changes	68,762
- Asset experience	(59,743)
- Salary experience	204,128
- Other liability experience	(28,250)
- Legislative changes	0
• End of Year UAAL	\$3,376,632

The following table reconciles the change in the funding period from the prior year's valuation based on the contribution rates that are currently in effect.

<b>Change in Funding Period (Years)</b>	
• 2023 Valuation and FY 2025 Contribution Rate	15.2
- Expected experience	(1.0)
- Assumption and method changes	0.8
- Asset experience	(0.4)
- Salary and demographic experience	(1.9)
- Legislative changes	0.0
- Total Change	(2.5)
• 2024 Valuation and FY 2026 Contribution Rate	12.7

## Actuarial Gains/ (Losses) and the Funding Period (Continued)

The employer contribution rate is established in accordance with Section 9-11-225 of the South Carolina Code, which first came into existence by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent budget proviso. The employer contribution rate scheduled to be in effect for the fiscal year ending June 30, 2025 is 21.24%.

The calculated funding period documented in this actuarial valuation reflects the scheduled 21.24% employer contribution that is assumed to be maintained in future years.

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## 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 Statute requires an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. The last experience study was conducted for the five-year period ending June 30, 2024, and adopted by the Board in June 2024 for first use in the July 1, 2024 actuarial valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.00% for the July 1, 2024 actuarial valuation. Updated assumptions used in the July 1, 2024 valuation include:

- Updated mortality assumption for active members
- Updated mortality improvement assumption
- Increase the salary assumption for members with less than 20 years of service
- Slight increase in the rates of termination at certain ages prior to retirement eligibility
- Slight decrease in the rates of retirement at certain ages

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.

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. 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 7.00% 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 Statute.

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 the maximum amortization period that is specified in State Statute.



## Benefit Provisions

Appendix B of this report includes a summary of the benefit provisions for PORS. There were no material legislative changes enacted since the prior valuation that changed or modified the benefits that members earn or receive. 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 with an effective date of membership 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 a benefit adjustment equal to the lesser of 1.00% of their retirement benefit or \$500 per annum.

#### *Class Three Members (members with an effective date of membership 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 a benefit adjustment equal to the lesser of 1.00% of their retirement benefit or \$500 per annum.

## SECTION C

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### ACTUARIAL TABLES

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# Actuarial Tables

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**Summary of Cost Items**  
(Dollar amounts expressed in thousands)

	July 1, 2024	July 1, 2023
	(1)	(2)
1. Projected payroll of active members <sup>1</sup>	\$ 1,898,424	\$ 1,601,690
2. Present value of future pay <sup>1</sup>	\$ 14,601,558	\$ 13,089,302
3. Normal cost rate		
a. Total normal cost rate	15.66%	15.22%
b. Less: member contribution rate	-9.75%	-9.75%
c. Employer normal cost rate	5.91%	5.47%
4. Actuarial accrued liability for active members		
a. Present value of future benefits	\$ 6,554,899	\$ 5,789,516
b. Less: present value of future normal costs	2,222,005	1,933,576
c. Actuarial accrued liability	\$ 4,332,894	\$ 3,855,940
5. Total actuarial accrued liability for:		
a. Retirees and beneficiaries	\$ 5,700,465	\$ 5,515,114
b. Inactive members	353,212	335,588
c. Active members (Item 4.c.)	4,332,894	3,855,940
d. Total	\$ 10,386,571	\$ 9,706,642
6. Actuarial value of assets	\$ 7,009,939	\$ 6,400,701
7. Unfunded actuarial accrued liability (UAAL) (Item 5.d. - Item 6.)	\$ 3,376,632	\$ 3,305,941
8. Required Contribution Rate		
a. Employer normal cost rate	5.91%	5.47%
b. Employer contribution rate available to amortize the UAAL	15.33%	15.77%
c. Total employer contribution rate	21.24%	21.24%
9. Funding period based on the required employer contribution rate (years) <sup>2</sup>	13	16
10. Applicable statutorily required contribution rates <sup>3</sup>		
a. Employer contribution rate	21.24%	21.24%
b. Member contribution rate	9.75%	9.75%

<sup>1</sup> The projected payroll does not include payroll for working retirees.

<sup>2</sup> The funding period for 2024 is determined on an actuarial value of asset basis and is based on the contribution rate scheduled to become effective for FY 2026 (i.e. beginning July 1, 2025 and ending June 30, 2026).

<sup>3</sup> The actual employer contribution rate is 21.24% of pay for FY 2025 and FY 2026. This contribution rate includes the cost of accidental and incidental death benefits.

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

	<u>July 1, 2024</u>	<u>July 1, 2023</u>
	(1)	(2)
1. Active members		
a. Service retirement	\$ 5,415,832	\$ 4,701,300
b. Deferred termination benefits and refunds	643,494	500,079
c. Survivor benefits	89,038	92,525
d. Disability benefits	<u>406,534</u>	<u>495,612</u>
e. Total	\$ 6,554,898	\$ 5,789,516
2. Retired members		
a. Service retirement	\$ 4,676,005	\$ 4,508,742
b. Disability retirement	733,891	724,899
c. Beneficiaries	238,003	230,269
d. Incidental and accidental death benefits	<u>52,565</u>	<u>51,204</u>
e. Total	\$ 5,700,464	\$ 5,515,114
3. Inactive members		
a. Vested terminations	\$ 265,279	\$ 255,595
b. Nonvested terminations	<u>87,933</u>	<u>79,993</u>
c. Total	\$ 353,212	\$ 335,588
4. Total actuarial present value of future benefits	\$ 12,608,574	\$ 11,640,218

## Analysis of Normal Cost

	July 1, 2024 (1)	July 1, 2023 (2)
1. Total normal cost rate		
a. Service retirement	9.01%	8.59%
b. Deferred termination benefits and refunds	4.26%	3.99%
c. Survivor benefits	0.24%	0.28%
d. Disability benefits	<u>1.97%</u>	<u>2.18%</u>
e. Total	15.48%	15.04%
2. Administrative expense	0.18%	0.18%
3. Less: member contribution rate	<u>9.75%</u>	<u>9.75%</u>
4. Net employer normal cost rate	5.91%	5.47%

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

**Results of July 1, 2024 Valuation**  
(Dollar amounts expressed in thousands)

	July 1, 2024
	(1)
1. Actuarial Present Value of Future Benefits	
a. Present retired members and beneficiaries	\$ 5,700,464
b. Present active and inactive members	6,908,110
c. Total actuarial present value	\$ 12,608,574
2. Present Value of Future Normal Contributions	
a. Member	\$ 1,423,652
b. Employer	798,351
c. Total future normal contributions	\$ 2,222,003
3. Actuarial Liability	\$ 10,386,571
4. Current Actuarial Value of Assets	\$ 7,009,939
5. Unfunded Actuarial Liability	\$ 3,376,632
6. <u>UAAL Amortization Rates based on an employer contribution rate of 21.24%</u>	
a. Active members	15.33%
b. Re-employed retirees (including employee contributions)	30.99%
7. Unfunded Actuarial Liability Liquidation Period	13 years

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

**Actuarial Balance Sheet**  
(Dollar amounts expressed in thousands)

	July 1, 2024	July 1, 2023
	(1)	(2)
<b>1. <u>Assets</u></b>		
a. Current assets (actuarial value)		
i. Employee annuity savings fund	\$ 1,631,635	\$ 1,499,886
ii. Employer annuity accumulation fund	5,378,304	4,900,815
iii. Total current assets	\$ 7,009,939	\$ 6,400,701
b. Present value of future member contributions	\$ 1,423,652	\$ 1,276,207
c. Present value of future employer contributions		
i. Normal contributions	\$ 798,351	\$ 657,369
ii. Accrued liability contributions	3,376,632	3,305,941
iii. Total future employer contributions	\$ 4,174,983	\$ 3,963,310
d. Total assets	\$ 12,608,574	\$ 11,640,218
<b>2. <u>Liabilities</u></b>		
a. Employee annuity savings fund		
i. Past member contributions	\$ 1,631,635	\$ 1,499,886
ii. Present value of future member contributions	1,423,652	1,276,207
iii. Total contributions to employee annuity savings fund	\$ 3,055,287	\$ 2,776,093
b. Employer annuity accumulation fund		
i. Benefits currently in payment	\$ 5,700,464	\$ 5,515,114
ii. Benefits to be provided to other members	3,852,823	3,349,011
iii. Total benefits payable from employer annuity accumulation fund	\$ 9,553,287	\$ 8,864,125
c. Total liabilities	\$ 12,608,574	\$ 11,640,218





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

Item (1)	July 1, 2024 (2)	July 1, 2023 (3)
1. Cash and cash equivalents (operating cash)	\$ 673,464	\$ 434,034
2. Receivables	144,543	86,061
3. Investments		
a. Short-term securities	\$ 37,180	\$ 22,415
b. Fixed income (global)	200,102	293,815
c. Global public equity	3,154,177	2,768,688
d. Alternative investments	2,996,732	2,955,043
e. Total investments	<u>\$ 6,388,191</u>	<u>\$ 6,039,961</u>
4. Securities lending cash collateral invested	\$ 48,259	\$ 269
5. Prepaid administrative expenses	76	90
6. Capital assets, net of accumulated depreciation	<u>165</u>	<u>169</u>
7. Total assets	\$ 7,254,698	\$ 6,560,584
8. Liabilities		
a. Due to other Systems	\$ 0	\$ 0
b. Accounts payable	5,573	142,083
c. Investment fees payable	685	473
d. Obligations under securities lending	48,259	269
e. Due to South Carolina Retiree Health Insurance Trust Fund	1,949	1,648
f. Benefit payable	556	539
g. Other liabilities	19,557	9,647
h. Total liabilities	<u>\$ 76,579</u>	<u>\$ 154,659</u>
9. Total market value of assets available for benefits (Item 7. - Item 8.h.)	\$ 7,178,119	\$ 6,405,925
10. Asset allocation (investments) <sup>1</sup>		
a. Net invested cash	11.5%	6.1%
b. Fixed income	2.8%	4.6%
c. Public equities	44.0%	43.2%
d. Alternative investments	41.7%	46.1%
e. Total investments	<u>100.0%</u>	<u>100.0%</u>

<sup>1</sup> 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.

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

	Year Ending	
	July 1, 2024	July 1, 2023
	(1)	(2)
1. Value of assets at beginning of year	\$ 6,405,925	\$ 5,938,708
2. Revenue for the year		
a. Contributions		
i. Member contributions	\$ 197,697	\$ 179,072
ii. Employer contributions	407,497	342,457
iii. Nonemployer contributions	12,470	12,470
iv. Total	<u>\$ 617,664</u>	<u>\$ 533,999</u>
b. Income		
i. Interest, dividends, and other income	\$ 102,844	\$ 86,914
ii. Investment expenses	<u>(77,058)</u>	<u>(74,279)</u>
iii. Net	\$ 25,786	\$ 12,635
c. Net realized and unrealized gains (losses)	<u>648,393</u>	<u>420,199</u>
d. Total revenue	\$ 1,291,843	\$ 966,833
3. Expenditures for the year		
a. Disbursements		
i. Refunds	\$ 26,309	\$ 25,820
ii. Regular annuity benefits	486,675	468,123
iii. Other benefit payments	5,047	4,599
iv. Net transfers to other Systems	<u>(1,751)</u>	<u>(2,079)</u>
v. Total	\$ 516,280	\$ 496,463
b. Administrative expenses and depreciation	<u>3,369</u>	<u>3,153</u>
c. Total expenditures	\$ 519,649	\$ 499,616
4. Increase in net assets (Item 2.d.- Item 3.c.)	\$ 772,194	\$ 467,217
5. Value of assets at end of year (Item 1. + Item 4.)	\$ 7,178,119	\$ 6,405,925
6. Net External Cash Flow		
a. Dollar amount	\$ 101,384	\$ 37,536
b. Percentage of market value	1.5%	0.6%



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

		Year Ending June 30, 2024		
1. Actuarial value of assets at beginning of year	\$	6,400,701		
2. Market value of assets at beginning of year	\$	6,405,925		
3. Net new investments				
a. Contributions	\$	617,664		
b. Disbursements		(519,649)		
c. Subtotal		98,015		
4. Market value of assets at end of year	\$	7,178,119		
5. Net earnings (Item 4. - Item 2. - Item 3.c.)	\$	674,179		
6. Assumed investment return rate for fiscal year		7.00%		
7. Expected return (Item 6. x (Item 2. + 1/2 Item 3.c.))	\$	451,845		
8. Excess/(Deficit) return (Item 5. - Item 7.)	\$	222,334		
9. Excess/(Deficit) return on assets as of June 30, 2024:				
	<u>Fiscal Year</u> <u>Ending June 30,</u>	<u>Excess/(Deficit)</u> <u>Return</u>	<u>Percent</u> <u>Deferred</u>	<u>Deferred</u> <u>Amount</u>
	(1)	(2)	(3)	(4)
a. 2024		\$ 222,334	80%	\$ 177,867
b. 2023		15,921	60%	9,553
c. 2022		(582,849)	40%	(233,140)
d. 2021		1,069,498	20%	213,900
e. 2020		(428,016)	0%	0
f. Total				\$ 168,180
10. Actuarial value of assets as of June 30, 2024 (Item 4. - Item 9.f.)	\$	7,009,939		
11. Expected actuarial value as of June 30, 2024	\$	6,950,196		
12. Asset gain (loss) for year (Item 10. - Item 11.)	\$	59,743		
13. Asset gain (loss) as % of the actuarial value of assets		0.9%		
14. Ratio of actuarial value to market value		97.7%		

**Estimation of Yields**  
(Dollar amounts expressed in thousands)

	Year Ending	
	July 1, 2024 (1)	July 1, 2023 (2)
1. Market value yield		
a. Beginning of year market assets	\$ 6,405,925	\$ 5,938,708
b. Contributions to fund during the year	617,664	533,999
c. Disbursements	(519,649)	(499,616)
d. Investment income (net of investment expenses)	<u>674,179</u>	<u>432,834</u>
e. End of year market assets	\$ 7,178,119	\$ 6,405,925
f. Estimated dollar weighted market value yield	10.4%	7.3%
2. Actuarial value yield		
a. Beginning of year actuarial assets	\$ 6,400,701	\$ 5,947,764
b. Contributions to fund during the year	617,664	533,999
c. Disbursements	(519,649)	(499,616)
d. Investment income (net of investment expenses)	<u>511,223</u>	<u>418,554</u>
e. End of year actuarial assets	\$ 7,009,939	\$ 6,400,701
f. Estimated actuarial value yield	7.9%	7.0%

**Schedule of Funding Progress**  
(Dollar amounts expressed in thousands)

July 1, (1)	Actuarial Value of Assets (AVA) (2)	Actuarial Accrued Liability (AAL) (3)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2) (4)	Funded Ratio (2)/(3) (5)	Annual Covered Payroll <sup>1</sup> (6)	UAAL as % of Payroll (4)/(6) (7)
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%
2017	4,480,894	7,109,612	2,628,718	63.0%	1,263,314	208.1%
2018	4,654,193	7,378,084	2,723,891	63.1%	1,306,961	208.4%
2019	4,852,573	7,737,415	2,884,842	62.7%	1,378,255	209.3%
2020	5,069,748	8,111,938	3,042,190	62.5%	1,440,645	211.2%
2021	5,534,837	8,611,516	3,076,679	64.3%	1,434,621	214.5%
2022	5,947,764	9,092,631	3,144,867	65.4%	1,513,764	207.8%
2023	6,400,701	9,706,642	3,305,941	65.9%	1,601,690	206.4%
2024	7,009,939	10,386,571	3,376,632	67.5%	1,898,424	177.9%

<sup>1</sup> 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, 2024
Actuarial cost method:	Entry Age Normal
Amortization method:	Level percentage of payroll
Amortization period for contribution rate:	23-year maximum, closed period <sup>1</sup>
Asset valuation method:	5-Year Smoothing
Actuarial assumptions:	
Investment rate of return <sup>2</sup>	7.00%
Projected salary increases	3.50% to 11.00% (varies by service)
Inflation	2.25%
Post-retirement benefit adjustments <sup>3</sup>	1.00%
Retiree mortality	The 2020 Public Retirees of South Carolina Mortality Table projected at 80% of the ScaleUMP from the year 2020. Male rates are multiplied by 127% and female rates are multiplied by 107%.

<sup>1</sup> The employer and member contribution rates are determined in accordance with Section 9-11-225 of the South Carolina Code. For 2024, the funding period determined on an actuarial value of asset basis may not exceed 23 years. Contribution rates are not permitted to decrease until the ratio of the actuarial value of assets to the actuarial accrued liability is at least 85%.

<sup>2</sup> This is a prescribed assumption in Section 9-16-335 of South Carolina State Code.

<sup>3</sup> The benefit increase is the lesser of 1.00% or \$500 annually.

**Solvency Test**  
(Dollar amounts expressed in thousands)

July 1, (1)	Actuarial Accrued Liability			Valuation Assets (5)	Portion of Aggregate Accrued Liabilities Covered by Assets		
	Active Member Contributions (2)	Retirants & Beneficiaries (3)	Active & Inactive Members (Employer Financed) (4)		Active (6)	Retirants (7)	ER Financed (8)
	2010	\$ 758,695	\$ 2,577,772		\$ 1,513,990	\$ 3,612,700	100.0%
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%
2017	1,034,549	4,136,503	1,938,560	4,480,894	100.0%	83.3%	0.0%
2018	1,104,572	4,307,805	1,965,707	4,654,193	100.0%	82.4%	0.0%
2019	1,179,539	4,514,202	2,043,674	4,852,573	100.0%	81.4%	0.0%
2020	1,265,088	4,709,824	2,137,026	5,069,748	100.0%	80.8%	0.0%
2021	1,330,653	5,039,417	2,241,446	5,534,837	100.0%	83.4%	0.0%
2022	1,400,421	5,293,122	2,399,088	5,947,764	100.0%	85.9%	0.0%
2023	1,499,886	5,515,114	2,691,642	6,400,701	100.0%	88.9%	0.0%
2024	1,631,635	5,700,464	3,054,472	7,009,939	100.0%	94.3%	0.0%



## **SECTION D**

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### **MEMBERSHIP INFORMATION**

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# Membership Information

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## Summary of Membership Data

	July 1, 2024 (1)	July 1, 2023 (2)
1. Active members		
a. Males	21,418	20,587
b. Females	7,464	7,210
c. Total members	28,882	27,797
d. Total annualized prior year pay	\$ 1,843,952,234	\$ 1,641,015,689
e. Average pay	\$ 63,844	\$ 59,036
f. Average age	39.5	39.5
g. Average service	9.7	9.8
h. Member contributions with interest	\$ 1,411,290,949	\$ 1,293,375,990
i. Average contributions with interest	\$ 48,864	\$ 46,529
2. Vested inactive members		
a. Number	2,851	2,892
b. Total annual deferred benefits	\$ 31,039,771	\$ 30,568,965
c. Average annual deferred benefit	\$ 10,887	\$ 10,570
3. Nonvested inactive members		
a. Number	20,830	19,638
b. Member contributions with interest	\$ 87,932,570	\$ 79,992,786
c. Average refund due	\$ 4,221	\$ 4,073
4. Service retirees		
a. Number	17,271	16,887
b. Total annual benefits	\$ 412,640,390	\$ 395,409,698
c. Average annual benefit	\$ 23,892	\$ 23,415
d. Average age at the valuation date	67.1	66.7
e. Average age at retirement date	55.2	55.1
5. Disabled retirees		
a. Number	2,789	2,798
b. Total annual benefits	\$ 63,068,406	\$ 62,337,531
c. Average annual benefit	\$ 22,613	\$ 22,279
d. Average age at the valuation date	59.0	58.5
e. Average age at retirement date	43.8	43.8
6. Beneficiaries		
a. Number	1,727	1,682
b. Total annual benefits	\$ 23,830,484	\$ 22,965,573
c. Average annual benefit	\$ 13,799	\$ 13,654
d. Average age at the valuation date	67.4	67.3

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

	July 1, 2024 (1)	July 1, 2023 (2)
1. Active Members		
a. Number of State Employees	8,882	8,501
Total Annual Compensation	\$ 566,617	\$ 485,446
b. Number of Public School Employees	7	7
Total Annual Compensation	\$ 619	\$ 469
c. Number of Other Agency Employees	19,993	19,289
Total Annual Compensation	\$ 1,276,716	\$ 1,155,100
Total Number of Active Members	28,882	27,797
Total Annual Compensation	\$ 1,843,952	\$ 1,641,015
2. Rehired Retired Participants		
a. Number of State Employees	695	664
Total Annual Compensation	\$ 34,744	\$ 27,920
b. Number of Public School Employees	6	6
Total Annual Compensation	\$ 484	\$ 467
c. Number of Other Agency Employees	1,597	1,582
Total Annual Compensation	\$ 92,082	\$ 84,605
Total Number of Rehired Retired Members	2,298	2,252
Total Annual Compensation	\$ 127,310	\$ 112,992

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



## Summary of Historical Active Membership

July 1, (1)	Number of Employers <sup>2</sup> (2)	Active Members		Covered Payroll <sup>1</sup>		Average Annual Pay		Average Age (9)	Average Service (10)
		Number (3)	Percent Increase /(Decrease) (4)	Amount in Thousands (5)	Percent Increase /(Decrease) (6)	Amount (7)	Percent Increase /(Decrease) (8)		
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	313	26,651	0.3%	1,187,195	7.4%	44,546	7.06%	39.5	9.8
2017	332	27,056	1.5%	1,263,314	6.4%	46,693	4.82%	39.4	9.7
2018	333	27,093	0.1%	1,306,961	3.5%	48,240	3.31%	39.4	9.7
2019	336	27,397	1.1%	1,378,255	5.5%	50,307	4.28%	39.4	9.8
2020	340	27,795	1.5%	1,440,645	4.5%	51,831	3.03%	39.5	9.8
2021	338	26,555	-4.5%	1,434,621	-0.4%	54,025	4.23%	39.6	10.0
2022	339	26,606	0.2%	1,513,764	5.5%	56,896	5.31%	39.6	10.1
2023	346	27,797	4.5%	1,601,690	5.8%	57,621	1.27%	39.5	9.8
2024	352	28,882	3.9%	1,898,424	18.5%	65,730	14.07%	39.5	9.7

<sup>1</sup> Covered payroll does not include payroll attributable to members in working retirees.

<sup>2</sup> Number of employers and agencies that cover employees earning benefits in PORS and that contributed to the system during the last fiscal year.

## Distribution of Active Members by Age and by Years of Service

Attained Age	Years of Credited Service												Total Count & Avg. Comp.
	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.	
Under 20	99 \$41,901	9 \$40,730	1 \$47,510	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	109 \$41,856
20-24	881 \$42,872	652 \$50,782	345 \$52,452	163 \$53,232	104 \$56,119	50 \$55,711	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	2,195 \$48,417
25-29	736 \$44,910	720 \$52,496	676 \$55,803	549 \$57,125	482 \$58,652	1,064 \$60,152	36 \$58,124	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	4,263 \$54,961
30-34	564 \$44,546	482 \$52,486	376 \$56,110	293 \$57,103	323 \$58,835	1,942 \$63,610	699 \$68,566	26 \$70,023	0 \$0	0 \$0	0 \$0	0 \$0	4,705 \$59,625
35-39	321 \$47,411	300 \$54,105	231 \$57,895	174 \$56,649	158 \$59,179	1,085 \$63,995	1,263 \$70,834	637 \$74,553	36 \$77,507	0 \$0	0 \$0	0 \$0	4,205 \$64,973
40-44	255 \$47,841	240 \$54,869	154 \$55,164	113 \$59,434	127 \$57,964	630 \$65,478	656 \$70,811	1,199 \$76,658	493 \$78,499	23 \$87,490	0 \$0	0 \$0	3,890 \$68,964
45-49	158 \$47,145	159 \$54,246	116 \$56,152	80 \$57,925	79 \$61,483	416 \$64,766	380 \$69,681	641 \$75,599	860 \$79,733	312 \$85,432	5 \$78,276	0 \$0	3,206 \$71,608
50-54	160 \$46,858	147 \$58,473	81 \$55,254	60 \$63,341	70 \$60,845	424 \$66,896	380 \$68,716	427 \$71,742	546 \$77,392	551 \$87,232	148 \$90,865	6 \$66,112	3,000 \$72,634
55-59	101 \$49,484	117 \$58,057	61 \$55,568	45 \$59,968	52 \$62,710	281 \$65,904	225 \$67,348	275 \$70,996	243 \$73,946	236 \$84,489	200 \$88,675	45 \$90,796	1,881 \$71,273
60-64	58 \$49,973	53 \$58,158	41 \$57,798	41 \$59,209	28 \$59,880	192 \$64,697	160 \$65,417	139 \$68,026	113 \$68,472	83 \$80,904	37 \$80,162	46 \$96,330	991 \$67,254
65 & Over	26 \$45,713	18 \$70,075	16 \$52,369	10 \$55,327	17 \$57,639	85 \$59,324	80 \$66,485	55 \$70,878	46 \$78,660	39 \$73,583	18 \$75,549	27 \$66,582	437 \$65,735
<b>Total</b>	<b>3,359 \$45,116</b>	<b>2,897 \$53,272</b>	<b>2,098 \$55,491</b>	<b>1,528 \$57,236</b>	<b>1,440 \$58,928</b>	<b>6,169 \$63,591</b>	<b>3,879 \$69,468</b>	<b>3,399 \$74,491</b>	<b>2,337 \$77,724</b>	<b>1,244 \$85,415</b>	<b>408 \$87,991</b>	<b>124 \$86,382</b>	<b>28,882 \$63,848</b>



## Schedule of Annuitants by Type of Benefit

Type of Benefit/ Form of Payment (1)	Number (2)	Annual Benefits Amount (3)	Average Monthly Benefit (4)
<b>Service:</b>			
Maximum & QDRO	10,397	\$ 241,006,615	\$ 1,932
100% J&S	4,174	98,258,922	1,962
50% J&S	2,196	61,731,024	2,343
Level Income	<u>504</u>	<u>11,643,829</u>	1,925
Subtotal:	17,271	\$ 412,640,390	1,991
<b>Disability:</b>			
Maximum	2,066	\$ 47,944,573	\$ 1,934
100% J&S	498	9,815,089	1,642
50% J&S	<u>225</u>	<u>5,308,744</u>	1,966
Subtotal:	2,789	\$ 63,068,406	1,884
Beneficiaries:	1,727	\$ 23,830,484	\$ 1,150
Total:	<u>21,787</u>	<u>\$ 499,539,280</u>	\$ 1,911

## Distribution of Annuitants by Monthly Benefit

Monthly Benefit Amount	Number of Annuitants	Female	Male	Average Service
(1)	(2)	(3)	(4)	(5)
Under \$200	946	439	507	1.74
\$ 200 - 399	1,176	555	621	6.97
400 - 599	1,337	598	739	8.29
600 - 799	1,406	665	741	10.84
800 - 999	1,320	574	746	12.48
1,000 - 1,199	1,271	545	726	14.28
1,200 - 1,399	1,172	462	710	15.59
1,400 - 1,599	1,185	424	761	17.66
1,600 - 1,799	1,166	402	764	19.47
1,800 - 1,999	1,257	350	907	20.70
2,000 - 2,199	1,281	317	964	21.82
2,200 - 2,399	1,293	297	996	22.71
2,400 - 2,599	1,194	254	940	23.45
2,600 - 2,799	982	166	816	24.04
2,800 - 2,999	920	159	761	24.65
3,000 - 3,199	743	123	620	25.08
3,200 - 3,399	592	95	497	25.74
3,400 - 3,599	454	74	380	26.46
3,600 - 3,799	384	56	328	26.83
3,800 - 3,999	350	39	311	27.34
4,000 - 4,199	284	40	244	27.38
4,200 - 4,399	213	29	184	28.31
4,400 - 4,599	173	32	141	28.98
4,600 - 4,799	148	15	133	29.10
4,800 - 4,999	115	15	100	29.63
5,000 - 5,499	166	20	146	30.64
5,500 - 5,999	114	10	104	31.91
6,000 - 6,499	52	8	44	32.52
6,500 - 6,999	32	4	28	34.06
7,000 - 7,499	25	1	24	34.44
7,500 - 7,999	9	3	6	33.44
8,000 & Over	27	4	23	35.41
<b>Total</b>	<b>21,787</b>	<b>6,775</b>	<b>15,012</b>	<b>18.19</b>

Average age at retirement for service retirees as of July 1, 2024 is age 55.2.

## Distribution of Average Annual Benefit by Age and Employee Type

Current Age	State		Other		Total	
	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	69	\$ 10,057	150	\$ 14,060	219	\$ 12,799
40 - 44	65	16,888	159	21,041	224	19,836
45 - 49	188	25,672	464	29,614	652	28,477
50 - 54	475	27,241	1,235	30,554	1,710	29,634
55 - 59	1,031	24,409	1,969	27,689	3,000	26,562
60 - 64	1,617	22,931	2,213	26,228	3,830	24,836
65 - 69	1,877	20,029	2,034	23,689	3,911	21,932
70 - 74	1,808	19,369	1,659	22,172	3,467	20,710
75 - 79	1,293	18,816	1,335	20,829	2,628	19,839
80 - 84	545	16,280	757	19,323	1,302	18,049
85 - 89	159	14,950	457	19,424	616	18,269
90 And Over	24	12,333	204	17,055	228	16,558
Total	9,151	\$ 20,794	12,636	\$ 24,474	21,787	\$ 22,928





## Schedule of Retirants Added to And Removed from Rolls

(Dollar amounts except average allowance expressed in thousands)

Year Ending June 30,	Added to Rolls		Removed from Rolls		Rolls End of the Year		% Increase in Annual Benefit	Average Annual Benefit
	Number	Annual Benefits	Number	Annual Benefits	Number	Annual Benefits		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
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
2017	987	22,709	388	6,662	17,887	361,921	4.6%	20,234
2018	983	24,066	379	6,621	18,491	379,365	4.8%	20,516
2019	990	25,450	387	6,670	19,094	398,145	5.0%	20,852
2020	954	25,840	423	7,207	19,625	416,779	4.7%	21,237
2021	1,124	31,477	568	10,577	20,181	437,678	5.0%	21,688
2022	1,177	31,375	518	8,776	20,840	460,277	5.2%	22,086
2023	988	29,545	461	9,109	21,367	480,713	4.4%	22,498
2024	917	27,926	497	9,100	21,787	499,539	3.9%	22,928



## SECTION E

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### ASSESSMENT AND DISCLOSURE OF RISK

DRAFT

# Risks Associated with Measuring the Accrued Liability And Actuarially Determined Contribution

(As Required by ASOP No. 51)

The determination of PORS's accrued liability, actuarially determined contribution, and calculated funding period requires the use of assumptions regarding future economic and demographic experience. The risk measures illustrated in this section are intended to aid stakeholders in understanding the effects when future experience differs from the assumptions used in performing an actuarial valuation. These risk measures may also help with illustrating the potential volatility in the funded status and actuarially determined contributions that result from differences between actual experience and the expected experience based on the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience (economic and demographic) differing from the assumptions, changes in assumptions due to changing conditions, changes in contribution requirements due to modifications to the funding policy, and changes in the liability and cost due to changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

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

- Investment risk – actual investment returns may differ from expected returns;
- Longevity risk – members may live longer or shorter than expected and receive pensions for a time period different than assumed;
- Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liabilities and contributions differing from expected;
- Salary and payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liabilities and contributions differing from expected;
- Asset/Liability mismatch – changes in assets may be inconsistent with changes in liabilities, thereby altering the relative difference between the assets and liabilities, which may alter the funded status and contribution requirements;
- Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions are not made in accordance with the System's funding policy or Statute, other anticipated payments to the plan are not made, or material changes occur in the anticipated number of covered employees, covered payroll, or another relevant contribution base.

On the other hand, effects of certain experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate of return, the funded status of the plan can be expected to decrease (or increase) more than anticipated.

## Employer Risk with Contribution Rates

The contribution rate in this report was established in accordance with Section 9-11-225 of the South Carolina Code which first came into existence by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent budget proviso. However, stakeholders should be aware that the scheduled contribution rates specified in State Code do not necessarily guarantee that the contribution requirements will not increase in a future year.

These scheduled contribution rates in the Code are intended to finance the unfunded actuarial accrued liability over a reasonable time period and provide stability in the employer contribution rates so employers are better able to budget their pension cost in future years. The greater the difference between the calculated funding period based on the contribution rate specified in State Code and the maximum permitted funding period also specified in State Code, the greater the ability for the System to incur some adverse experience without requiring an increase in the employer contribution rate.

However, providing stability in the contribution rates means that projecting the year the fund actually attains a 100% funded ratio becomes less certain. If actual experience is more favorable than assumed, then the year the fund attains a 100% funded ratio will be earlier than projected, but the projected year the fund attains a 100% funded ratio will be later than projected if actual experience is less favorable than assumed.

## Plan Maturity Measures

Risks faced by a pension plan evolve over time. A relatively new plan with virtually no assets and paying few benefits will experience lower investment risk than a mature plan with a significant amount of assets and large number of members receiving benefits. There are a few measures that can assist stakeholders in understanding and comparing the maturity of a plan to other systems, which include:

- Ratio of market value of assets to payroll: The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. If assets are approximately the same as covered payroll, an investment return that is 5% different than assumed would equal 5% of payroll. In another example, if the assets are approximately twice as large as covered payroll, an investment return that is 5% different than assumed would equal 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.
- Ratio of actuarial accrued liability to payroll: The ratio of actuarial accrued liability to payroll can be used as a measure to indicate the potential volatility of contributions due to volatility in the liability experience. For instance, if the actuarial accrued liability is 5 times the size of the covered payroll, then a change in the liability that is 2% different than expected would be a change in magnitude that is 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.

- Ratio of active to retired members: A relatively mature open plan is likely to have close to the same number of actives to retirees resulting in a ratio that is around 1.0. On the other hand, a super-mature plan, or a plan that is closed to new entrants will have more retirees than active members resulting in a ratio below 1.0. As this ratio declines, a larger portion of the total actuarial accrued liability in the System is attributable to retirees. This metric also typically moves in tandem with the liability to payroll metric, which provides an indication of potential contribution volatility.
- Ratio of net cash flow to market value of assets: A negative net cash flow means that benefit payments exceed contributions and the plan is depending on investment earnings and possibly existing funds to make payments to retirees. A certain amount of negative net cash flow is expected to occur when benefits are prefunded and the plan has matured. However, a relatively large negative net cash flow as a percent of assets may be an indication of the need for additional contributions for a plan with a low funded ratio.

The following exhibit provides a summary of these measures for PORS. We have also included these metrics for the prior four years so stakeholders can identify how these measures are trending.

Measure	July 1,				
	2024	2023	2022	2021	2020
Ratio of the market value of assets to total payroll	3.54	3.74	3.65	3.96	3.04
Ratio of actuarial accrued liability to payroll	5.13	5.66	5.59	5.57	5.21
Ratio of actives to retirees and beneficiaries	1.33	1.30	1.28	1.32	1.42
Ratio of net cash flow to market value of assets	1.4%	0.6%	-0.2%	-0.4%	-0.1%

Note: For purposes of this analysis, payroll includes the payroll received by working retirees since the System receives contributions on that payroll.

## Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a low-default-risk obligation measure (LDROM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

*“The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the “right” liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan’s funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.”*

The LDROM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The current model expects lower costs but with higher investment risk, which creates less certainty and a possibility of higher costs. Thus, the difference between the two measures (Valuation and LDROM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio. However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 5.32%.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

Police Officers Retirement System	
Valuation Accrued Liability	LDROM
\$10,387 Million	\$11,617 Million

Again, the difference between the two measures, or \$1,230 million, is one illustration of the savings the sponsor anticipates by assuming investment risk in a diversified portfolio.

Disclosures: Discount rate used to calculate LDROM: 5.32% Intermediate FTSE Pension Discount Curve as of June 30, 2024. This measure may not be appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.

## APPENDIX A

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### ACTUARIAL ASSUMPTIONS AND METHODS

# 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. The actuarial assumptions are based on an experience study conducted as of July 1, 2023 and adopted by the Board in June 2024.

## Investment Rate of Return

Assumed annual rate of 7.00% composed of a 2.25% inflation component and a 4.75% 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 21 years of service to include anticipated merit and promotional increases. The assumed annual rate of increase is 3.50% for all members with 21 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		
Years of Service	PORS	
	Annual Promotional/Longevity Rates of Increase	Total Annual Rate of Increase Including 3.50% Wage Inflation
1	7.50%	11.00%
2	6.50%	10.00%
3	3.75%	7.25%
4	2.25%	5.75%
5	2.00%	5.50%
6	1.75%	5.25%
7	1.75%	5.25%
8	1.50%	5.00%
9	1.50%	5.00%
10 - 13	1.25%	4.75%
14	1.00%	4.50%
15 - 21	0.75%	4.25%
22-29	0.50%	4.00%
30+	0.00%	3.50%



### 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		Annual Service Based Retirement Rates		
Age	PORS	Years of Service		PORS
	Male and Female	Class Two	Class Three	Males and Females
55	20%	25	27	30%
56	20%	26	28	20%
57	20%	27	29	18%
58	12%	28	30	18%
59	12%	29	31	18%
60	12%	30	32	18%
61	25%	31	33	18%
62	25%	32	34	18%
63	25%	33	35	21%
64	25%	34	36	21%
65	25%	35	37	21%
66	25%	36	38	21%
67	25%	37	39	21%
68	25%	38	40	21%
69	25%	39	41	21%
70 & Over	100%	40	42	21%
		41	43	21%
		42	44	21%
		43	45	21%
		44	46	21%
		45	47	100%

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

Disability Rates		
Age	PORS	
	Males	Females
25	0.1200%	0.1200%
30	0.1600%	0.1600%
35	0.3000%	0.3000%
40	0.4000%	0.4000%
45	0.6000%	0.6000%
50	0.7500%	0.7500%
55+	0.0000%	0.0000%

c. Active Member Mortality

Rates of active member mortality are based upon the amount-weighted PUB-2010 Public Retirement Plans Mortality Table for Safety 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	0.0500%	0.0260%
30	0.0550%	0.0360%
35	0.0620%	0.0490%
40	0.0780%	0.0660%
45	0.1090%	0.0900%
50	0.1590%	0.1230%
55	0.2330%	0.1670%
60	0.3510%	0.2270%
64	0.4990%	0.2900%
Multiplier	100%	100%

For purposes of determining active death benefits, 10% 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 and Female
1	25.00%
2	18.00%
3	14.00%
4	12.00%
5	10.70%
6	10.02%
7	8.93%
8	7.96%
9	7.09%
10	6.32%
11	5.91%
12	5.26%
13	4.69%
14	4.18%
15	3.73%
16	3.62%
17	3.23%
18	2.88%
19	2.57%
20	2.29%
21	2.21%
22	1.96%
23	1.76%
24	1.56%

**Post Retirement Mortality**

- a. Healthy retirees and beneficiaries – The gender-distinct South Carolina Retirees 2020 Mortality Tables. The rates are projected on a fully generational basis by the 80% of Scale UMP to account for future mortality improvements and adjusted with multipliers based on plan experience. The following are sample rates of the base table:

<b>Nondisabled Annuitant Mortality Rates Before Projection (Multiplier Applied)</b>		
<b>Age</b>	<b>PORS</b>	
	<b>Males</b>	<b>Females</b>
50	0.2513%	0.2192%
55	0.4246%	0.2824%
60	0.7530%	0.3863%
65	1.1471%	0.5616%
70	1.8988%	0.9097%
75	3.3311%	1.7869%
80	6.1765%	3.5220%
85	11.1742%	6.8204%
90	19.6279%	12.8871%
Multiplier	127%	107%

<b>Life Expectancy for an Age 65 Retiree In Years</b>					
<b>Gender</b>	<b>Year of Retirement</b>				
	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
Male	19.0	19.3	19.6	19.9	20.2
Female	23.1	23.4	23.6	23.9	24.1

- b. A separate table of mortality rates is used for disabled retirees based on the Pub-2010 Public Retirement Plans Disabled Mortality tables on a fully generational basis by 80% of Scale UMP to account for future mortality and with multipliers based on plan experience. The following are sample rates of the base table:

<b>Disabled Annuitant Mortality Rates (Multiplier Applied)</b>		
<b>Age</b>	<b>PORS</b>	
	<b>Males</b>	<b>Females</b>
50	1.6050%	1.4830%
55	2.1140%	1.7420%
60	2.5030%	1.9560%
65	3.0440%	2.2560%
70	3.9010%	2.8620%
75	5.1920%	4.0030%
80	7.3480%	6.0070%
85	10.8150%	9.3310%
90	16.2530%	13.6650%
Multiplier	100%	100%

## Asset Valuation Method

The actuarial value of assets is equal to the market value, adjusted for a five-year phase in of the actual investment return in excess of (or less than) expected investment return on a market value of asset basis. 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 contribution rate is set by statute for both employees and employers. The funding period is determined, as described below, using the Entry Age Normal 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 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 actuarial determined contribution rate and amortization period reflects additional contributions the System receives with respect to return to work retirees. 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.

## 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) 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 remain unchanged from the current number in future years.
- 2) 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 Average Final Compensation, liabilities for active members are increased 3.75%.

## Unused Sick Leave

To account for the effect of unused sick leave on members' final 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 1<sup>st</sup> 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 rehired retiree participants) is assumed to increase at an annual rate of 2.70%. This rate represents the underlying expected annual rate of wage inflation and does not anticipate increases in the number of members. The number of rehired retirees is expected to remain constant at current levels each future year.

## Other Assumptions

1. The normal cost rate is increased by 0.18% to reflect administrative expenses that are paid with plan assets.
2. 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 for working retirees by dividing the actual 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.
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 four 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. Members with a vested benefit are assumed to elect a refund or a deferred benefit commencing at age 65, whichever is more valuable at the valuation date
9. There will be no recoveries once disabled.
10. No surviving spouse will remarry and there will be no children's benefit.



11. Decrement timing: Decrements of all types are assumed to occur mid-year.
12. 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.
13. Decrement relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
14. 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.
15. Benefit service: All members are assumed to accrue one year of service each year.
16. All calculations were performed without regard to the compensation limit in IRC Section 401(a)(17) and the benefit limit under IRC Section 415.
17. Refund of Member Contributions: Members will refund their contributions if the value of their member contributions exceeds the value of their deferred monthly retirement benefit

### **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 employer 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.

## **APPENDIX B**

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### **BENEFIT PROVISIONS**

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# 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 Statement Nos. 27, 67 and 68, 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 9.75% of earnable compensation on and after July 1, 2017. 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 have a membership date 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.





### ***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.

***Deferred Termination Benefit:***

- a. **Eligibility:** Member must be vested (i.e. five years of earned service for Class Two members and eight 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). 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.

**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.

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**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 1<sup>st</sup> following the receipt of 12 monthly benefit payments. The \$500 limit in the annual increase is not indexed to escalate in future years.

## **APPENDIX C**

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### **GLOSSARY**

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## 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.)
- 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.

**Decremments:** 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 Statement Nos. 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, 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.

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# Retirement System for Judges and Solicitors of the State of South Carolina (JSRS)

ACTUARIAL VALUATION REPORT  
AS OF JULY 1, 2024

DRAFT





December 4, 2024

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

**Subject: Actuarial Valuation as of July 1, 2024**

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 unfunded liability and the calculated funding period based on the current employer contribution effort, as well as analyzes changes in the System's financial condition. In addition, the report provides various summaries of the plan's membership. 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 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 certifies the employer contribution rate annually and is based on the Board's funding policy. If new legislation is enacted between the valuation date and the date the contribution rate becomes effective, the Board may adjust the contribution rate 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 Board's current funding policy is to establish a minimum contribution rate which results in the unfunded actuarial accrued liability being funded over a period that is the same as the maximum funding period established for the South Carolina Retirement System in accordance with Section 9-1-1085 of the South Carolina Code. Under this Statute reference, the maximum amortization period is 23 years as of July 1, 2024 and will decrease by one year in each of the next three years until reaching a maximum 20-year funding period on July 1, 2027. According to the Board's contribution policy, the calculated contribution rate is a minimum and the Board certified rate may not be less than the rate established for the prior fiscal year as long as the System's funded ratio is less than 85%.

For purposes of calculating the funding period for the System's unfunded liability, payroll based contributions and non-payroll based appropriations are considered.

Beginning July 1, 2019, the State increased the contribution rate to 62.94% of pay and has committed \$2.9 million in non-payroll based appropriations each future year until the System becomes fully funded. This contribution effort satisfies the Board's minimum 23-year funding period requirement.

### **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 System's funded ratio, based on the actuarial valuation of assets, slightly increased from 46.4% at July 1, 2023 to 48.7% at July 1, 2024. The State's contribution effort is expected to increase the funded ratio of the System to improve each year. This year the System experienced slight liability gains primarily due to adopting new demographic assumptions as a result of an experience study.

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 49.9%, compared to 46.4% in the prior year. The increase in the funded ratio on a market value basis is primarily due to the State's contribution effort to improve the financial security of the System, as well as the favorable investment return during the prior fiscal year. In particular, plan assets earned a 10.49% return on a time weighted-basis (net of fees) as reported in the financial statement of the South Carolina Retirement Systems for the year ending June 30, 2024. The 10.7% return documented in this report was determined on a dollar-weighted basis and assumes mid-year cash flows.

### **ASSUMPTIONS AND METHODS**

South Carolina State Code requires an experience analysis of the economic and demographic assumptions be performed at least every five years. The last experience study was conducted for the five-year period ending June 30, 2023, and the updated assumptions will be first used to prepare the July 1, 2024 valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.00% for the July 1, 2024 actuarial valuation. Updated assumptions used in the July 1, 2024 valuation include:

- Updated mortality assumption for active members
- Updated mortality improvement assumption based on the 2020 MP projection scale
- Reduced rate of disability incidence

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System. The combined effect of the assumptions used in this valuation is expected to have no significant bias.

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.

This report was prepared using our proprietary valuation model and related software, which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.



#### **BENEFIT PROVISIONS**

The benefit provisions reflected in this valuation are those that were in effect on July 1, 2024. There were no legislative changes enacted since the previous valuation that materially changed or modified the benefits that members earn or receive.

#### **DATA**

Census data for retired, active and inactive members was supplied as of July 1, 2024, by the PEBA staff. The staff also supplied asset information as of July 1, 2024. 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, 2024.

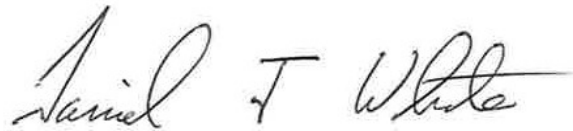
All of our work conforms with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of South Carolina Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and consultants. All three are also Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Each are experienced in performing valuations for large public retirement systems.

Sincerely,

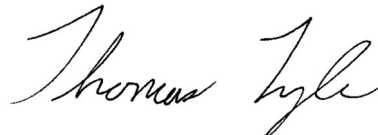
**Gabriel, Roeder, Smith & Co.**



Joseph P. Newton, FSA, MAAA, EA  
Pension Market Leader and Actuary



Daniel J. White, FSA, MAAA, EA  
Vice President and Actuary



Thomas Lyle, FSA, MAAA, EA  
Consultant



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## SECTION A

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### EXECUTIVE SUMMARY

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## Executive Summary

(Dollar amounts expressed in thousands)

Valuation Date:	July 1, 2024	July 1, 2023
<b>Membership</b> <ul style="list-style-type: none"> <li>• Number of               <ul style="list-style-type: none"> <li>- Active members<sup>1</sup> <span style="float: right;">168</span></li> <li>- Retirees and beneficiaries <span style="float: right;">227</span></li> <li>- Inactive members <span style="float: right; border-bottom: 1px solid black;">5</span></li> <li>- Total <span style="float: right;">400</span></li> </ul> </li> <li>• Projected payroll of active members <span style="float: right;">\$36,076</span></li> </ul>		<span style="float: right;">160</span> <span style="float: right;">221</span> <span style="float: right; border-bottom: 1px solid black;">5</span> <span style="float: right;">386</span> <span style="float: right;">\$33,639</span>
<b>Contribution Rates</b> <ul style="list-style-type: none"> <li>• Employer contribution rate <span style="float: right;">62.94%<sup>2</sup></span></li> <li>• Non-Payroll based State appropriations <span style="float: right;">\$2,900</span></li> <li>• Member <span style="float: right;">10.00%</span></li> </ul>		<span style="float: right;">62.94%</span> <span style="float: right;">\$2,900</span> <span style="float: right;">10.00%</span>
<b>Assets</b> <ul style="list-style-type: none"> <li>• Market value <span style="float: right;">\$243,734</span></li> <li>• Actuarial value <span style="float: right;">237,611</span></li> <li>• Return on market value <span style="float: right;">10.7%</span></li> <li>• Return on actuarial value <span style="float: right;">7.9%</span></li> <li>• Ratio of actuarial to market value of assets <span style="float: right;">97.5%</span></li> <li>• External cash flow % <span style="float: right;">-0.6%</span></li> </ul>		<span style="float: right;">\$221,630</span> <span style="float: right;">221,629</span> <span style="float: right;">7.4%</span> <span style="float: right;">6.9%</span> <span style="float: right;">100.0%</span> <span style="float: right;">-0.1%</span>
<b>Actuarial Information</b> <ul style="list-style-type: none"> <li>• Normal cost % <span style="float: right;">30.78%</span></li> <li>• Actuarial accrued liability (AAL) <span style="float: right;">\$488,265</span></li> <li>• Unfunded actuarial accrued liability (UAAL) <span style="float: right;">250,654</span></li> <li>• Funded ratio <span style="float: right;">48.7%</span></li> <li>• Calculated funding period (years) <span style="float: right;">19</span></li> </ul>		<span style="float: right;">30.58%</span> <span style="float: right;">\$477,736</span> <span style="float: right;">256,107</span> <span style="float: right;">46.4%</span> <span style="float: right;">21</span>
<b>Reconciliation of UAAL</b> <ul style="list-style-type: none"> <li>• Beginning of Year UAAL <span style="float: right;">\$256,107</span></li> <li>- Interest on UAAL <span style="float: right;">17,927</span></li> <li>- Amortization payment <span style="float: right;">(18,935)</span></li> <li>- Assumption/method changes <span style="float: right;">(2,649)</span></li> <li>- Asset experience <span style="float: right;">(2,029)</span></li> <li>- Benefit adjustment <span style="float: right;">(2,170)</span></li> <li>- Salary experience <span style="float: right;">(1,209)</span></li> <li>- Other liability experience <span style="float: right;">3,612</span></li> <li>- Legislative Changes <span style="float: right; border-bottom: 1px solid black;">0</span></li> <li>• End of Year UAAL <span style="float: right;">\$250,654</span></li> </ul>		<span style="float: right;">\$242,056</span> <span style="float: right;">16,944</span> <span style="float: right;">(18,947)</span> <span style="float: right;">0</span> <span style="float: right;">124</span> <span style="float: right;">5,669</span> <span style="float: right;">3,026</span> <span style="float: right;">7,235</span> <span style="float: right; border-bottom: 1px solid black;">0</span> <span style="float: right;">\$256,107</span>

<sup>1</sup> Active member counts include 13 retired-in-place members as of July 1, 2024 and 15 as of July 1, 2023 and also includes unfilled positions.

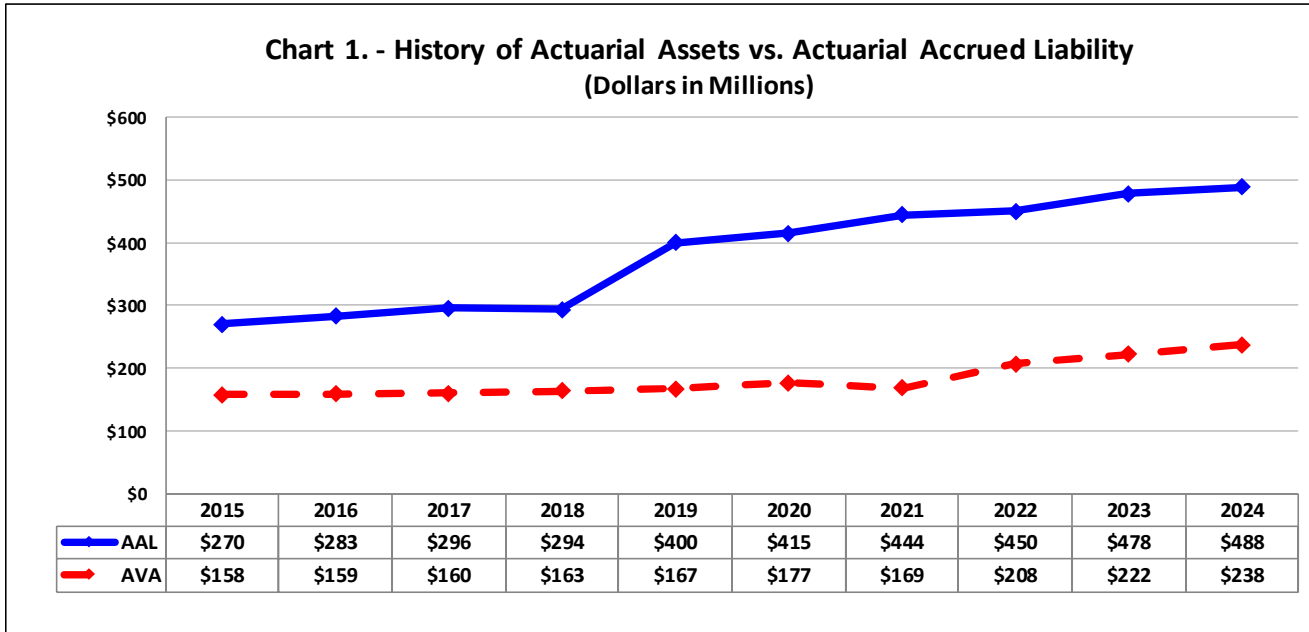
<sup>2</sup> The 62.94% contribution rate includes the cost of incidental death benefits.





## Executive Summary (Continued)

The unfunded actuarial accrued liability decreased by \$5.4 million since the prior year’s valuation to \$250.7 million. The largest source of this decrease is due to a liability gain due to updated actuarial demographic assumptions and investment gains on an actuarial value of assets basis. Below is a chart with the historical actuarial value of assets and actuarial accrued liability for JSRS.



Note, the System includes a benefit provision that increases benefits paid to retired members and surviving spouses by a percentage equal to the percentage increase in the current salary paid to the position from which the member retired. As a result, the System will experience significant actuarial gains or losses when the actual salary increase provided to covered positions is materially different than assumed. Due to the combination of this benefit feature and the current financial condition of the System, it is imperative that the State continues the current contribution effort each future year. Also, it is possible the current contribution effort may need to be increased in a future year depending on emerging economic and demographic experience.

## SECTION B

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### DISCUSSION

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## Discussion

The results of the July 1, 2024 actuarial valuation of the Retirement System for Judges and Solicitors are presented in this report. The primary purposes of the valuation report are to depict the current financial condition of the System 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.

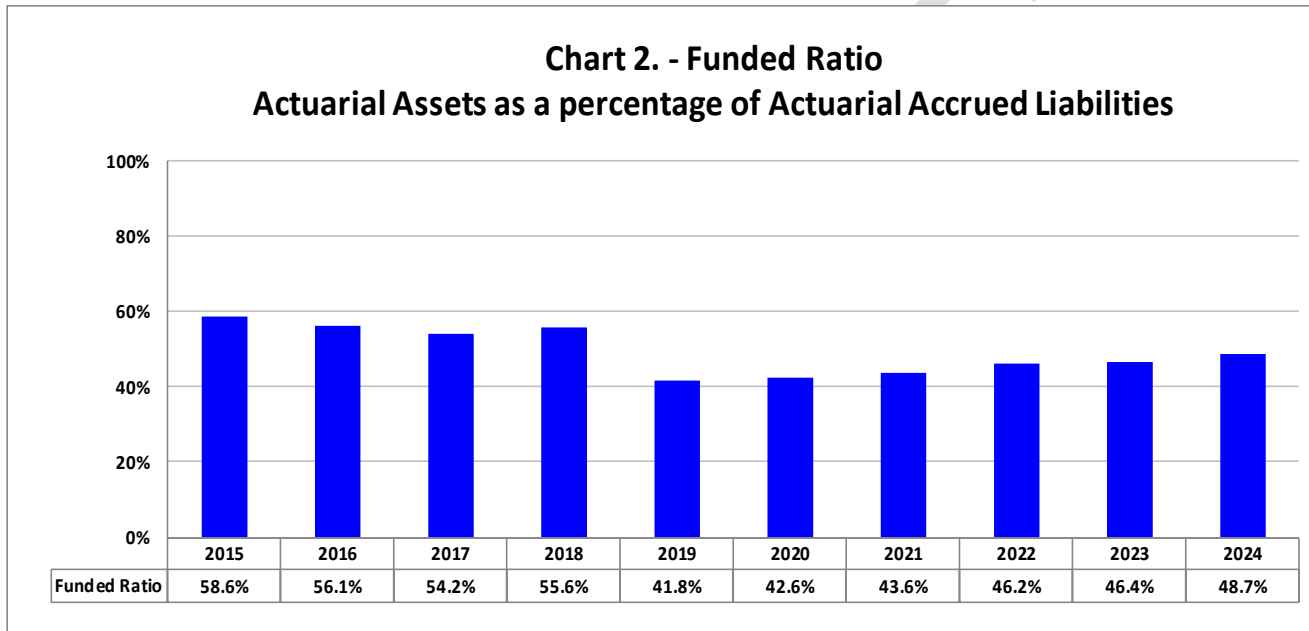
All of the actuarial and financial tables referenced by the other sections of this report appear in Section C. Section D provides member data and statistical information. Section E provides an assessment and disclosure of risk as required by Actuarial Standards of Practice No. 51. Appendices A and B 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.

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## Funding Progress

The funded ratio slightly increased from 46.4% to 48.7% since the prior valuation. The increase in the funded ratio is primarily due to the State’s contribution effort to reduce the existing unfunded actuarial accrued liability, with experiences gains on assets and liabilities during this last year.

As shown in the table below, the funding ratio (on a smoothed asset basis) increased from 2023 to 2024. Table 10, Schedule of Funding Progress, in the following section of the report provides additional detail regarding the funding progress of the Retirement System.

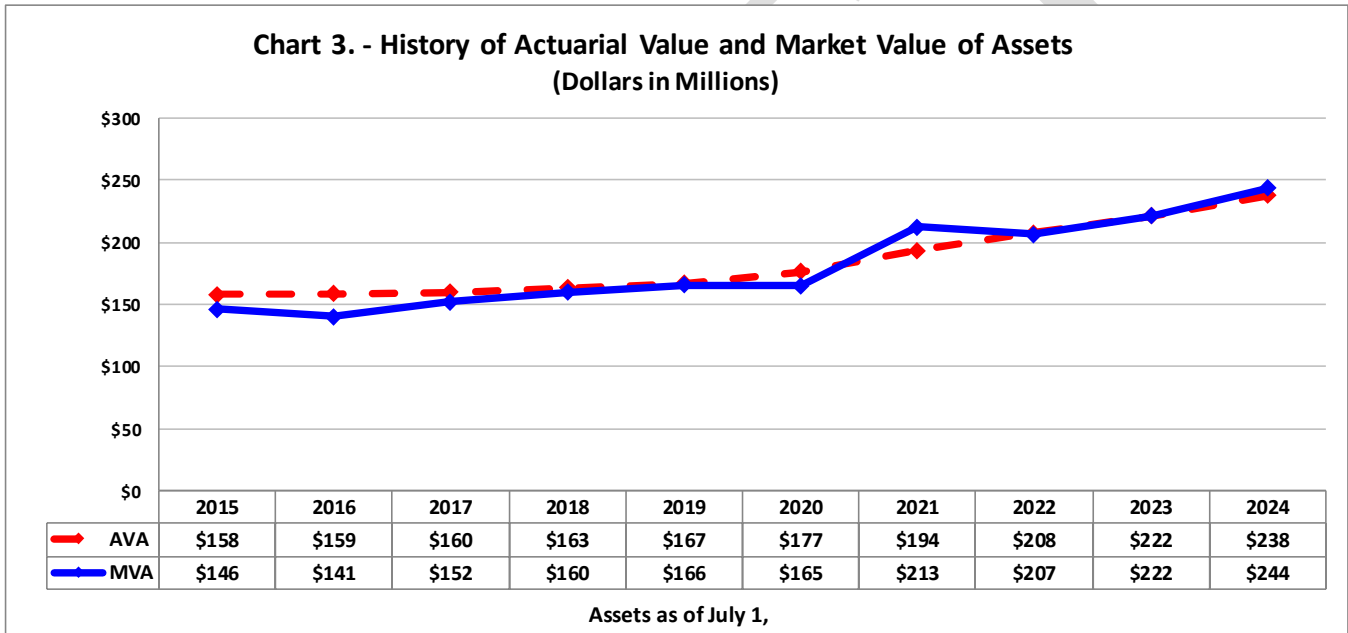


As a result of the increase in the contribution effort beginning July 1, 2019, we expect the funded ratio to continue improving. Also, we expect the dollar amount of the unfunded actuarial accrued liability to have a decreasing trend (i.e. positive amortization of the unfunded actuarial accrued liability).

## 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 \$221.6 million to \$237.6 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 for fiscal year 2024 was 10.7%. Because of the recognition of prior investment experience in prior years, the actuarial (smoothed) asset value returned was 7.9%. This difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.



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 over many years. The demographic experience for the last year is briefly summarized in the chart below.

The unfunded actuarial accrued liability (UAAL) has decreased from \$256.1 million in 2023 to \$250.7 million in 2024. The table below shows the source and the impact of those gains and losses on the UAAL.

<b>Reconciliation of UAAL</b>	
<b>(Dollars in thousands)</b>	
• Beginning of Year UAAL	\$256,107
- Interest on UAAL	17,927
- Amortization payment	(18,935)
- Assumption/method changes	(2,649)
- Asset Experience	(2,029)
- Benefit adjustment	(2,170)
- Salary Experience	(1,209)
- Other Liability Experience	3,612
- Legislative Changes	0
• End of Year UAAL	\$250,654

The \$5.4 million decrease in the unfunded actuarial accrued liability is primarily due to updated demographic assumptions and investment gains on an actuarial value of asset basis.

## Actuarial Gains/(Losses) and the Contribution Requirement (Continued)

The following table provides a reconciliation of the change in the calculated funding period from July 1, 2023 to July 1, 2024.

<b>Change in Funding Period (Years)</b> <b>Based on a 62.94% Contribution Rate</b>	
• Prior Year	20.6
- Expected Experience	(1.0)
- Assumption Change	(0.3)
- Asset Experience	(0.3)
- Benefit Adjustment Experience	(0.2)
- Salary Experience	(1.0)
- Other Demographic Experience	0.7
- Legislative Changes	0.0
- Total Change	(2.1)
• Current Year Valuation	18.5

As noted earlier, the increase in the State's contribution effort that began on July 1, 2019 is expected to result in a gradual improvement in the funded ratio and a decrease in the dollar amount of the unfunded actuarial accrued liability and funding period.

## 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 Statute requires an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. The last experience study was conducted for the five-year period ending June 30, 2023, and the Board has adopted the assumptions recommended in that report for first use in the July 1, 2024 actuarial valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.00% for the July 1, 2024 actuarial valuation. Updated assumptions used in the July 1, 2024 valuation include:

- Updated mortality assumption for active members
- Updated mortality improvement assumption based on the 2020 MP projection scale
- Reduced rate of disability incidence

Appendix A includes a summary of the actuarial assumptions and methods used in this valuation.

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 7.0% 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 Statute.

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 an actuarial basis in subsequent years may be useful for business making decisions, but such projections should not be misunderstood as documentation of satisfaction of the funding period that is specified in the Board's funding policy.



## 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.

## SECTION C

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### ACTUARIAL TABLES

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# Actuarial Tables

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**Summary of Cost Items**  
(Dollar amounts expressed in thousands)

	July 1, 2024	July 1, 2023
	(1)	(2)
1. Projected payroll of active members <sup>1</sup>	\$ 36,076	\$ 33,639
2. Present value of future pay	\$ 252,855	\$ 242,650
3. Normal cost rate		
a. Total normal cost rate	30.78%	30.58%
b. Less: member contribution rate	<u>-10.00%</u>	<u>-10.00%</u>
c. Employer normal cost rate	20.78%	20.58%
4. Actuarial accrued liability for active members		
a. Present value of future benefits	\$ 222,746	\$ 218,116
b. Less: present value of future normal costs	<u>(74,591)</u>	<u>(71,262)</u>
c. Actuarial accrued liability	\$ 148,155	\$ 146,854
5. Total actuarial accrued liability for:		
a. Retirees and beneficiaries	\$ 338,725	\$ 329,669
b. Inactive members	1,385	1,213
c. Active members (Item 4c)	<u>148,155</u>	<u>146,854</u>
d. Total	\$ 488,265	\$ 477,736
6. Actuarial value of assets	\$ 237,611	\$ 221,629
7. Unfunded actuarial accrued liability (UAAL) (Item 5d - Item 6)	\$ 250,654	\$ 256,107
8. Applicable required contribution rate		
a. Employer normal cost rate	20.78%	20.58%
b. Employer contribution rate available to amortize the UAAL	<u>42.16%</u>	<u>42.36%</u>
c. Total employer contribution rate <sup>2</sup>	62.94%	62.94%
9. Funding period based on the current employer contribution rate (years)	19	21

<sup>1</sup> The projected payroll is based on all filled and unfilled positions.

<sup>2</sup> The 62.94% contribution rate includes the cost of incidental death benefits.

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

	<u>July 1, 2024</u>	<u>July 1, 2023</u>
	(1)	(2)
1. Active members		
a. Service retirement	\$ 215,110	\$ 210,049
b. Survivor benefits	2,329	2,549
c. Disability benefits	<u>5,307</u>	<u>5,519</u>
d. Total	\$ <u>222,746</u>	\$ <u>218,117</u>
2. Retired members		
a. Service retirement	\$ 310,923	\$ 301,646
b. Disability retirement	0	0
c. Beneficiaries	<u>27,802</u>	<u>28,023</u>
d. Total	\$ <u>338,725</u>	\$ <u>329,669</u>
3. Inactive members		
a. Vested terminations	\$ 1,307	\$ 1,135
b. Nonvested terminations	<u>78</u>	<u>78</u>
c. Total	\$ <u>1,385</u>	\$ <u>1,213</u>
4. Total actuarial present value of future benefits	\$ 562,856	\$ 548,999

## Analysis of Normal Cost

	July 1, 2024 (1)	July 1, 2023 (2)
1. Total normal cost rate		
a. Service retirement	28.24%	28.09%
b. Survivor benefits	0.54%	0.59%
c. Disability benefits	1.60%	1.72%
d. Total	30.38%	30.40%
2. Administrative expense	0.40%	0.18%
3. Less: member contribution rate	10.00%	10.00%
4. Net employer normal cost rate	20.78%	20.58%

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

**Results of July 1, 2024 Valuation**  
(Dollar amounts expressed in thousands)

	July 1, 2024
	(1)
1. Actuarial Present Value of Future Benefits	
a. Present retired members and beneficiaries	\$ 338,725
b. Present active and inactive members	224,131
c. Total actuarial present value	\$ 562,856
2. Present Value of Future Normal Contributions	
a. Member	\$ 25,286
b. Employer	49,305
c. Total future normal contributions	\$ 74,591
3. Actuarial Liability	\$ 488,265
4. Current Actuarial Value of Assets	\$ 237,611
5. Unfunded Actuarial Liability	\$ 250,654
6. UAAL Amortization Rates Based on an Employer Contribution Rate of 62.94%	
a. Active members	42.16%
b. DROP and Retired-in-Place Members (including employee contributions)	72.94%
7. Unfunded Actuarial Liability Liquidation Period	19 Years

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

**Actuarial Balance Sheet**  
**(Dollar amounts expressed in thousands)**

	July 1, 2024	July 1, 2023
	(1)	(2)
1. Assets		
a. Current assets (actuarial value)		
i. Employee annuity savings fund	\$ 36,229	\$ 35,417
ii. Employer annuity accumulation fund	201,382	186,212
iii. Total current assets	\$ 237,611	\$ 221,629
b. Present value of future member contributions	\$ 25,286	\$ 24,265
c. Present value of future employer contributions		
i. Normal contributions	\$ 49,305	\$ 46,998
ii. Accrued liability contributions	250,654	256,107
iii. Total future employer contributions	\$ 299,959	\$ 303,105
d. Total assets	\$ 562,856	\$ 548,999
2. Liabilities		
a. Employee annuity savings fund		
i. Past member contributions	\$ 36,229	\$ 35,417
ii. Present value of future member contributions	25,286	24,265
iii. Total contributions to employee annuity savings fund	\$ 61,515	\$ 59,682
b. Employer annuity accumulation fund		
i. Benefits currently in payment	\$ 338,725	\$ 329,669
ii. Benefits to be provided to other members	162,616	159,648
iii. Total benefits payable from employer annuity accumulation fund	\$ 501,341	\$ 489,317
c. Total liabilities	\$ 562,856	\$ 548,999



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

Item (1)	July 1, 2024 (2)	July 1, 2023 (3)
1. Cash and cash equivalents (operating cash)	\$ 24,267	\$ 19,559
2. Receivables	3,926	2,594
3. Investments		
a. Short-term securities	\$ 1,259	\$ 760
b. Fixed income (global)	6,777	9,952
c. Global public equity	106,823	93,779
d. Alternative investments	101,491	100,092
e. Total investments	<u>\$ 216,350</u>	<u>\$ 204,583</u>
4. Securities lending cash collateral invested	\$ 1,634	\$ 9
5. Prepaid administrative expenses	3	3
6. Capital assets, net of accumulated depreciation	<u>8</u>	<u>7</u>
7. Total assets	<u>\$ 246,188</u>	<u>\$ 226,755</u>
8. Liabilities		
a. Due to other systems	\$ 0	\$ 0
b. Accounts payable	189	4,812
c. Investment fees payable	23	16
d. Obligations under securities lending	1,634	9
e. Due to South Carolina Retiree Health Insurance Trust Fund	0	0
f. Benefit payable	0	0
g. Other liabilities	608	288
h. Total liabilities	<u>\$ 2,454</u>	<u>\$ 5,125</u>
9. Total market value of assets available for benefits (Item 7. - Item 8.h.)	<u>\$ 243,734</u>	<u>\$ 221,630</u>
10. Asset allocation (investments) <sup>1</sup>		
a. Net invested cash	11.8%	8.0%
b. Fixed income	2.8%	4.5%
c. Public equity	43.8%	42.3%
d. Alternative investments	41.6%	45.2%
e. Total investments	<u>100.0%</u>	<u>100.0%</u>

<sup>1</sup> 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.

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

	Year Ending	
	July 1, 2024	July 1, 2023
	(1)	(2)
1. Value of assets at beginning of year	\$ 221,630	\$ 206,674
2. Revenue for the year		
a. Contributions		
i. Member contributions	\$ 3,564	\$ 4,236
ii. Employer contributions	21,280	20,164
iii. State appropriated contributions	2,900	2,900
iv. Total	<u>\$ 27,744</u>	<u>\$ 27,300</u>
b. Income		
i. Interest, dividends, and other income	\$ 4,290	\$ 3,556
ii. Investment expenses	<u>(2,610)</u>	<u>(2,517)</u>
iii. Net	\$ 1,680	\$ 1,039
c. Net realized and unrealized gains (losses)	<u>21,932</u>	<u>14,233</u>
d. Total revenue	<u>\$ 51,356</u>	<u>\$ 42,572</u>
3. Expenditures for the year		
a. Disbursements		
i. Refunds	\$ 0	\$ 0
ii. Regular annuity benefits	29,185	27,686
iii. Other benefit payments	7	11
iv. Transfers to other systems	<u>(57)</u>	<u>(191)</u>
v. Total	<u>\$ 29,135</u>	<u>\$ 27,506</u>
b. Administrative expenses and depreciation	<u>117</u>	<u>110</u>
c. Total expenditures	<u>\$ 29,252</u>	<u>\$ 27,616</u>
4. Increase in net assets (Item 2. - Item 3.)	\$ 22,104	\$ 14,956
5. Value of assets at end of year (Item 1. + Item 4.)	\$ 243,734	\$ 221,630
6. Net external cash flow		
a. Dollar amount	\$ (1,391)	\$ (206)
b. Percentage of market value	-0.6%	-0.1%



**Estimation of Yields**  
(Dollar amounts expressed in thousands)

	Year Ending	
	July 1, 2024 (1)	July 1, 2023 (2)
1. Market value yield		
a. Beginning of year market assets	\$ 221,630	\$ 206,674
b. Contributions to fund during the year	27,744	27,300
c. Disbursements	(29,252)	(27,616)
d. Investment income (net of investment)	23,612	15,272
e. End of year market assets	\$ 243,734	\$ 221,630
f. Estimated dollar weighted market value yield	10.7%	7.4%
2. Actuarial value yield		
a. Beginning of year actuarial assets	\$ 221,629	\$ 207,551
b. Contributions to fund during the year	27,744	27,300
c. Disbursements	(29,252)	(27,616)
d. Investment income (net of investment and administrative expenses)	17,490	14,394
e. End of year actuarial assets	\$ 237,611	\$ 221,629
f. Estimated actuarial value yield	7.9%	6.9%

**Schedule of Funding Progress**  
(Dollar amounts expressed in thousands)

July 1, (1)	Actuarial Value of Assets (AVA) (2)	Actuarial Accrued Liability (AAL) (3)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2) (4)	Funded Ratio (2)/(3) (5)	Annual Covered Payroll (6)	UAAL as % of Payroll (4)/(6) (7)
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%
2017	160,189	295,630	135,441	54.2%	22,347	606.1%
2018	163,358	293,815	130,457	55.6%	22,347	583.8%
2019	167,119	399,746	232,627	41.8%	30,346	766.6%
2020	176,649	415,069	238,420	42.6%	30,346	785.7%
2021	193,555	444,357	250,802	43.6%	31,104	806.3%
2022	207,551	449,607	242,056	46.2%	32,037	755.5%
2023	221,629	477,736	256,107	46.4%	33,639	761.3%
2024	237,611	488,265	250,654	48.7%	36,076	694.8%

## 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, 2024
Actuarial cost method:	Entry Age Normal
Amortization method:	Level percentage of payroll
Amortization period for contribution rate:	23-year maximum funding period <sup>1</sup>
Asset valuation method:	5-Year Smoothing
Actuarial assumptions:	
Investment rate of return <sup>2</sup>	7.00%
Projected salary increases	3.00%
Inflation	2.25%
Cost-of-living adjustments	3.00%
Retiree mortality	<p>The gender-distinct South Carolina Retirees 2020 Mortality Tables. The rates are projected on a fully generational basis by 80% of Scale UMP. Male rates are multiplied by 95% and female rates are multiplied by 94%.</p>

<sup>1</sup> In accordance with the Board's funding policy, the minimum employer contribution rate is determined using the same maximum funding period specified in Section 9-1-1085 of the South Carolina Statute for the South Carolina Retirement System. For 2023 the funding period determined on an actuarial value of asset basis may not exceed 23 years. The contribution rate is not permitted to decrease until the ratio of the actuarial value of assets and the actuarial accrued liability is at least 85%.

<sup>2</sup> This is a prescribed assumption in Section 9-16-335 of South Carolina State Code.

**Solvency Test**  
(Dollar amounts expressed in thousands)

July 1,	Actuarial Accrued Liability			Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets		
	Active Member Contributions	Retirants & Beneficiaries	Active & Inactive Members (Employer Financed)		Active	Retirants	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
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%
2017	26,703	203,030	65,897	160,189	100.0%	65.7%	0.0%
2018	28,259	198,893	66,663	163,358	100.0%	67.9%	0.0%
2019	30,289	268,747	100,710	167,119	100.0%	50.9%	0.0%
2020	33,153	273,630	108,286	176,649	100.0%	52.4%	0.0%
2021	32,669	303,810	107,878	193,555	100.0%	53.0%	0.0%
2022	36,092	296,820	116,695	207,551	100.0%	57.8%	0.0%
2023	35,417	329,669	112,650	221,629	100.0%	56.5%	0.0%
2024	36,229	338,725	113,311	237,611	100.0%	59.5%	0.0%



## SECTION D

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### MEMBERSHIP INFORMATION

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# Membership Information

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## Summary of Membership Data

	July 1, 2024 (1)	July 1, 2023 (2)
1. Active members		
a. Males	97	97
b. Females	57	56
c. Total members <sup>1</sup>	154	153
d. Total annualized pay <sup>2</sup>	\$ 36,076,108	\$ 33,639,371
e. Average pay <sup>2</sup>	\$ 214,739	\$ 210,246
f. Average age	57.8	57.7
g. Average credited service	14.2	14.8
h. Member contributions with interest <sup>3</sup>	\$ 35,729,775	\$ 34,918,152
i. Average contributions with interest <sup>3</sup>	\$ 255,213	\$ 249,415
2. Vested inactive members		
a. Number	2	2
b. Total annual deferred benefits	\$ 162,196	\$ 158,627
c. Average annual deferred benefit	\$ 81,098	\$ 79,314
3. Nonvested inactive members		
a. Number	3	3
b. Member contributions with interest	\$ 78,394	\$ 78,394
c. Average contributions with interest	\$ 26,131	\$ 26,131
4. Service retirees		
a. Number <sup>1</sup>	174	170
b. Total annual benefits	\$ 27,980,920	\$ 26,656,175
c. Average annual benefit	\$ 160,810	\$ 156,801
d. Average age at the valuation date	74.0	73.6
e. Average age at retirement date	60.4	60.4
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
e. Average age at retirement date	N/A	N/A
6. Beneficiaries		
a. Number	66	66
b. Total annual benefits	\$ 2,667,787	\$ 2,610,389
c. Average annual benefit	\$ 40,421	\$ 39,551
d. Average age at the valuation date	71.0	70.1

<sup>1</sup> Includes 13 and 15 members that are retired in place as of June 30, 2024 and June 30, 2023, respectively. Total membership at June 30, 2024 and June 30, 2023 is 386 and 379, respectively.

<sup>2</sup> Based on filled and unfilled positions.

<sup>3</sup> Total and average contributions and interest statistics exclude members in DROP and Retired in Place.



## Summary of Historical Active Membership

July 1, (1)	Active Members		Covered Payroll	Average Annual Pay		Average Age (7)	Average Service (8)
	Number of Employers (2)	Number <sup>1</sup> (3)	Amount in Thousands <sup>1</sup> (4)	Amount (5)	Percent Increase /(Decrease) (6)		
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	4	157	21,267	133,756	0.28%	56.5	15.1
2016	4	157	21,958	139,861	4.56%	57.2	15.4
2017	4	160	22,347	139,666	-0.14%	57.4	15.4
2018	4	160	22,347	139,666	0.00%	57.1	15.0
2019	4	160	30,346	189,662	35.80%	57.4	15.4
2020	4	160	30,346	189,662	0.00%	57.2	15.8
2021	4	160	31,104	194,403	2.50%	57.1	15.0
2022	4	160	32,037	200,234	3.00%	57.9	15.4
2023	4	160	33,639	210,246	5.00%	57.7	14.8
2024	4	168	36,076	214,739	7.24%	57.8	14.2

<sup>1</sup> Includes filled and unfilled positions and members in DROP or Retired-in-Place.

## Distribution of Active Members by Age and by Years of Service

Attained Age	Years of Credited Service												Total Count & Avg. Comp.	
	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.		
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	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	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	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	0 \$0
35-39	2 \$217,575	1 \$217,575	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	3 \$217,575
40-44	0 \$0	2 \$214,712	0 \$0	2 \$217,575	0 \$0	1 \$211,849	1 \$217,575	1 \$211,849	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	7 \$215,121
45-49	1 \$229,027	2 \$217,575	0 \$0	1 \$211,849	1 \$223,301	5 \$214,269	3 \$217,575	4 \$216,317	0 \$0	0 \$0	0 \$0	0 \$0	0 \$0	17 \$216,980
50-54	2 \$229,027	2 \$214,712	2 \$195,817	0 \$0	4 \$214,712	6 \$214,712	4 \$214,712	2 \$211,849	3 \$219,324	0 \$0	0 \$0	0 \$0	0 \$0	25 \$214,670
55-59	3 \$229,027	2 \$192,954	0 \$0	3 \$213,757	2 \$211,849	3 \$215,666	6 \$213,757	2 \$211,849	5 \$215,284	3 \$217,575	1 \$217,575	0 \$0	0 \$0	30 \$214,597
60-64	0 \$0	0 \$0	1 \$217,575	2 \$217,575	1 \$211,849	5 \$199,024	9 \$213,757	4 \$217,575	5 \$222,155	4 \$206,696	2 \$220,438	0 \$0	0 \$0	33 \$213,098
65 & Over	0 \$0	0 \$0	1 \$211,849	1 \$217,575	0 \$0	3 \$206,504	8 \$213,280	4 \$217,575	3 \$215,666	3 \$217,575	3 \$215,666	0 \$0	0 \$0	26 \$214,315
<b>Total</b>	<b>8 \$226,164</b>	<b>9 \$210,831</b>	<b>4 \$205,265</b>	<b>9 \$215,666</b>	<b>8 \$214,712</b>	<b>23 \$210,135</b>	<b>31 \$214,250</b>	<b>17 \$215,595</b>	<b>16 \$218,260</b>	<b>10 \$213,223</b>	<b>6 \$217,575</b>	<b>0 \$0</b>	<b>0 \$0</b>	<b>141 \$214,584</b>

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 (1)	Number of Annuitants (2)	Female (3)	Male (4)	Average Service (5)
Under \$500	0	0	0	0.00
\$ 500 - 999	7	4	3	25.38
1,000 - 1,499	7	4	3	25.73
1,500 - 1,999	7	3	4	20.71
2,000 - 2,499	2	1	1	18.38
2,500 - 2,999	2	2	0	8.75
3,000 - 3,499	4	4	0	20.88
3,500 - 3,999	3	3	0	24.81
4,000 - 4,499	17	17	0	20.43
4,500 - 4,999	8	7	1	27.11
5,000 - 5,499	12	11	1	29.26
5,500 - 5,999	1	1	0	32.00
6,000 - 6,499	4	4	0	25.81
6,500 - 6,999	2	0	2	19.33
7,000 - 7,499	0	0	0	0.00
7,500 - 7,999	2	1	1	13.29
8,000 - 8,499	0	0	0	0.00
8,500 - 8,999	3	0	3	5.50
9,000 - 9,499	1	1	0	16.50
9,500 - 9,999	2	1	1	17.79
10,000 - 10,499	3	1	2	23.72
10,500 - 10,999	1	0	1	19.17
11,000 - 11,499	3	0	3	21.22
11,500 & Over	149	18	131	27.05
<b>Total</b>	<b>240</b>	<b>83</b>	<b>157</b>	<b>25.35</b>

Average age at retirement for service retirees as of July 1, 2024 is age 60.4.

**Schedule of Retirants Added to and Removed from Rolls**  
**(Dollar amounts except average allowance expressed in thousands)**

July 1, (1)	Added to Rolls		Removed from Rolls		Rolls End of the Year		% Increase in Annual Benefit (8)	Average Annual Benefit (9)
	Number (2)	Annual Benefits (3)	Number (4)	Annual Benefits (5)	Number (6)	Annual Benefits (7)		
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
2017	7	535	4	352	213	17,900	1.0%	84,038
2018	11	734	11	792	213	17,842	-0.3%	83,765
2019	8	6,828	4	259	217	24,411	36.8%	112,493
2020	12	1,345	6	536	223	25,220	3.3%	113,094
2021	17	2,356	11	938	229	26,638	5.6%	116,323
2022	6	939	11	1,159	224	26,418	-0.8%	117,938
2023	17	3,550	5	701	236	29,267	10.8%	124,013
2024	7	1,758	3	376	240	30,649	4.7%	127,704

Includes participants who have retired in place.

Annual benefits added to rolls include benefit increases for continuing retirees.

The removed from rolls count does not include members who are replaced by beneficiaries.



## SECTION E

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### ASSESSMENT AND DISCLOSURE OF RISK

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# Risks Associated with Measuring the Accrued Liability And Actuarially Determined Contribution

(As Required by ASOP No. 51)

The determination of JSRS's accrued liability, actuarially determined contribution, and calculated funding period requires the use of assumptions regarding future economic and demographic experience. The risk measures illustrated in this section are intended to aid stakeholders in understanding the effects when future experience differs from the assumptions used in performing an actuarial valuation. These risk measures may also help with illustrating the potential volatility in the funded status and actuarially determined contributions that result from differences between actual experience and the expected experience based on the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience (economic and demographic) differing from the assumptions, changes in assumptions due to changing conditions, changes in contribution requirements due to modifications to the funding policy, and changes in the liability and cost due to changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

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

- Investment risk – actual investment returns may differ from expected returns;
- Longevity risk – members may live longer or shorter than expected and receive pensions for a time period different than assumed;
- Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liabilities and contributions differing from expected;
- Salary and payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liabilities and contributions differing from expected;
- Asset/Liability mismatch – changes in assets may be inconsistent with changes in liabilities, thereby altering the relative difference between the assets and liabilities, which may alter the funded status and contribution requirements;
- Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions are not made in accordance with the System's funding policy or Statute, other anticipated payments to the plan are not made, or material changes occur in the anticipated number of covered employees, covered payroll, or another relevant contribution base.

On the other hand, effects of certain experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate of return, the funded status of the plan can be expected to decrease (or increase) more than anticipated.



## Employer Risk with Contribution Rates

Under South Carolina State Statute, the Board must certify the employer contribution annually. This amount is determined actuarially, based on the Board's funding policy.

The funding policy is intended to finance the unfunded actuarial accrued liability over a reasonable time period and provide stability in the employer contribution rates so employers are better able to budget their pension cost in future years. The greater the difference between the contribution rate in effect versus the minimum contribution rate specified by the maximum funding period specified by the Board's funding policy, the greater the ability for the System to incur some adverse experience without requiring an increase in the employer contribution rate.

However, providing stability in the contribution rates means that projecting the year the fund actually attains a 100% funded ratio becomes less certain. If actual experience is more favorable than assumed, then the year the fund attains a 100% funded ratio will be earlier than projected, but the projected year the fund attains a 100% funded ratio will be later than projected if actual experience is less favorable than assumed.

## Plan Maturity Measures

Risks faced by a pension plan evolve over time. A relatively new plan with virtually no assets and paying few benefits will experience lower investment risk than a mature plan with a significant amount of assets and large number of members receiving benefits. There are a few measures that can assist stakeholders in understanding and comparing the maturity of a plan to other systems, which include:

- Ratio of market value of assets to payroll: The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. If assets are approximately the same as covered payroll, an investment return that is 5% different than assumed would equal 5% of payroll. In another example, if the assets are approximately twice as large as covered payroll, an investment return that is 5% different than assumed would equal 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.
- Ratio of actuarial accrued liability to payroll: The ratio of actuarial accrued liability to payroll can be used as a measure to indicate the potential volatility of contributions due to volatility in the liability experience. For instance, if the actuarial accrued liability is 5 times the size of the covered payroll, then a change in the liability that is 2% different than expected would be a change in magnitude that is 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.

- Ratio of active to retired members: A relatively mature open plan is likely to have close to the same number of actives to retirees resulting in a ratio that is around 1.0. On the other hand, a super-mature plan, or a plan that is closed to new entrants will have more retirees than active members resulting in a ratio below 1.0. As this ratio declines, a larger portion of the total actuarial accrued liability in the System is attributable to retirees. This metric also typically moves in tandem with the liability to payroll metric, which provides an indication of potential contribution volatility.
- Ratio of net cash flow to market value of assets: A negative net cash flow means that benefit payments exceed contributions and the plan is depending on investment earnings and possibly existing funds to make payments to retirees. A certain amount of negative net cash flow is expected to occur when benefits are prefunded and the plan has matured. However, a relatively large negative net cash flow as a percent of assets may be an indication of the need for additional contributions for a plan with a low funded ratio.

The following exhibit provides a summary of these measures for JSRS. We have also included these metrics for the prior four years so stakeholders can identify how these measures are trending.

	July 1,				
	2024	2023	2022	2021	2020
Ratio of the market value of assets to total payroll	6.76	6.59	6.45	6.84	5.45
Ratio of actuarial accrued liability to payroll	13.53	14.20	14.03	14.29	13.68
Ratio of actives to retirees and beneficiaries	0.59	0.58	0.63	0.61	0.64
Ratio of net cash flow to market value of assets	-0.6%	-0.1%	-0.3%	-0.1%	1.1%

Note: For purposes of this analysis, payroll includes the payroll received by working retirees since the System receives contributions on that payroll.

## Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a low-default-risk obligation measure (LDROM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

*“The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the “right” liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan’s funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.”*

The LDROM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The current model expects lower costs but with higher investment risk, which creates less certainty and a possibility of higher costs. Thus, the difference between the two measures (Valuation and LDROM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio. However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 5.32%.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

Retirement System for Judges and Solicitors of the State of South Carolina	
Valuation Accrued Liability	LDROM
\$488 Million	\$584 Million

Again, the difference between the two measures, or \$96 million, is one illustration of the savings the sponsor anticipates by assuming investment risk in a diversified portfolio.

Disclosures: Discount rate used to calculate LDROM: 5.32% Intermediate FTSE Pension Discount Curve as of June 30, 2024. This measure may not be appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.

## **APPENDIX A**

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### **ACTUARIAL ASSUMPTIONS AND METHODS**

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## Summary of Actuarial Assumptions and Methods

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 7.00% composed of a 2.25% inflation component and a 4.75% 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 salary are assumed to increase at an annual rate of 3.00%.

### **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.

<b>Service Based Retirement Rates</b>		
<b>Years of Service</b>	<b>Male</b>	<b>Female</b>
15-19	20.00%	20.00%
20	50.00%	50.00%
21-24	15.00%	15.00%
25-31*	10.00%	10.00%
32+	100.00%	100.00%

\*Retirement rate will be 100% at 31 years of service for solicitors and public defenders.

- b. An abbreviated table with the assumed rates of disability incidence and pre-retirement mortality is shown below. There is no active employment withdrawal assumption.

Age	Disability Incidence Rates		Pre-Retirement Mortality	
	Males	Females	Males	Females
25	0.0140%	0.0172%	0.0220%	0.0110%
30	0.0210%	0.0231%	0.0300%	0.0170%
35	0.0280%	0.0231%	0.0410%	0.0260%
40	0.0525%	0.0403%	0.0570%	0.0400%
45	0.0875%	0.0825%	0.0900%	0.0620%
50	0.1400%	0.1320%	0.1490%	0.0930%
55	0.2275%	0.2145%	0.2320%	0.1350%
60	0.3500%	0.3300%	0.3570%	0.2040%
64	0.4375%	0.4125%	0.5290%	0.3070%
Multiplier	35%	33%	100%	100%

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 gender-distinct South Carolina Retirees 2020 Mortality Tables. The rates are projected on a fully generational basis by 80% of Scale UMP (based on the 2020 MP projection scale) to account for future mortality improvements and adjusted with multipliers based on plan experience. The following are sample rates:

Healthy Annuitant Mortality Rates Before Projection		
Age	Males	Females
50	0.1880%	0.1926%
55	0.3176%	0.2481%
60	0.5633%	0.3393%
65	0.8580%	0.4934%
70	1.4203%	0.7992%
75	2.4918%	1.5698%
80	4.6202%	3.0941%
85	8.3587%	5.9917%
90	14.6823%	11.3214%
Multiplier	95%	94%

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				
Gender	Year of Retirement			
	2025	2030	2035	2040
Male	21.2	21.5	21.8	22.1
Female	24.1	24.3	24.6	24.8



- b. A separate table of mortality rates is used for disabled retirees based on the Pub-2010 Public Retirement Plans Disabled Mortality Tables on a fully generational basis by 80% of Scale UMP to account for future mortality and with multipliers based on plan experience. The following are sample rates:

Disabled Annuitant Mortality Rates		
Age	Males	Females
50	2.0865%	1.7796%
55	2.7482%	2.0904%
60	3.2539%	2.3472%
65	3.9572%	2.7072%
70	5.0713%	3.4344%
75	6.7496%	4.8036%
80	9.5524%	7.2084%
85	14.0595%	11.1972%
90	21.1289%	16.3980%
Multiplier	130%	120%

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. 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.

The calculation of the amortization period takes into account scheduled increases to contribution requirements 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 3.00%.

### ***Payroll Growth Rate***

The total annual payroll of active members (including DROP and retired in place 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. The normal cost rate is increased by 0.40% 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.
3. Age difference: Males are assumed to be four years older than their spouses.
4. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an immediate life annuity.
5. 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.
6. There will be no recoveries once disabled.
7. Decrement timing: Decrements of all types are assumed to occur mid-year.
8. 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.
9. Benefit Service: All active members are assumed to accrue one year of 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 employer 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.

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## **APPENDIX B**

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### **BENEFIT PROVISIONS**

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# 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 Statement No. 67.

**Eligibility:** This System covers all solicitors, circuit public defenders, judges of a Circuit or Family Court, justices of the Court of Appeals, and Supreme Court judges, unless exempted by statute. Administrative Law Judges who elect to participate in the System are also eligible to earn retirement benefits in the System.

**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<sup>th</sup>) 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%.

## **APPENDIX C**

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### **GLOSSARY**

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## 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.)
- 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, non-retired 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.

**Decremments:** 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), 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.

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# Retirement System for Members of the General Assembly of the State of South Carolina (GARS)

ACTUARIAL VALUATION REPORT  
AS OF JULY 1, 2024

DRAFT





December 4, 2024

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

**Subject: Actuarial Valuation as of July 1, 2024**

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 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) Statement Nos. 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 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 Board certified contribution is determined by this actuarial valuation and to become effective twelve months after the valuation date. In other words, the contribution determined by this July 1, 2024 actuarial valuation is certified to be the employer contribution amount for the fiscal year beginning July 1, 2025. If new legislation is enacted between the valuation date and the date the certified contribution becomes effective, the Board may adjust the certified contribution 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 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 outstanding balance of each amortization base be funded over separate five-year periods.

### **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 increased from 67.4% to 74.3% since the last actuarial valuation primarily due to the State's contribution effort to finance the unfunded liability. We expect the funded ratio to improve each year as the State's contribution effort continues to finance the existing unfunded actuarial accrued liability. 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 increase from 67.1% to 76.0%.

Plan assets earned a 10.5% return on a time weighted-basis (net of fees) as reported in the financial statement of the South Carolina Retirement Systems for the year ending June 30, 2023. The 10.5% return documented in this report was determined on a dollar-weighted basis and assumes mid-year cash flows. This return resulted in the market value of assets being \$1,618 thousand more than expected based on the 7.00% investment return assumption.

### **ASSUMPTIONS AND METHODS**

South Carolina State Code requires an experience analysis that reviews the economic and demographic assumptions be performed at least every five years. The last experience study was conducted for the five-year period ending June 30, 2023, and adopted by the Board in June 2024 for first use in the July 1, 2024 actuarial valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.00% for the July 1, 2024 actuarial valuation. Updated assumptions used in the July 1, 2024 valuation include:

- Updated mortality assumption for active members
- Updated mortality improvement assumption based on the 2020 MP projection scale
- Reduced rate of disability incidence

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System. The combined effect of the assumptions used in this valuation is expected to have no significant bias.

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.

This report was prepared using our proprietary valuation model and related software, which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.



#### **BENEFIT PROVISIONS**

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2024. There were no legislative changes enacted since the prior valuation that materially changed or modified the benefits that members earn or receive.

#### **DATA**

Member data for retired, active and inactive members was supplied as of July 1, 2024, by the PEBA staff. The staff also supplied asset information as of July 1, 2024. 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, 2024.

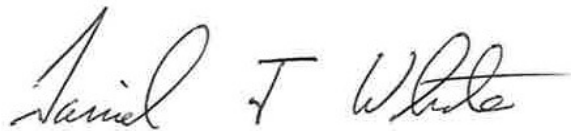
All of our work conforms with generally accepted actuarial principles and practices, and is in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of South Carolina Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned are independent actuaries and consultants. All three are also Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Each are experienced in performing valuations for large public retirement systems.

Sincerely,

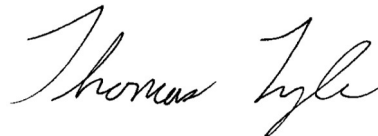
**Gabriel, Roeder, Smith & Co.**



Joseph P. Newton, FSA, MAAA, EA  
Pension Market Leader and Actuary



Daniel J. White, FSA, MAAA, EA  
Vice President and Actuary



Thomas Lyle, FSA, MAAA, EA  
Consultant



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## **SECTION A**

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### **EXECUTIVE SUMMARY**

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## Executive Summary

(Dollar amounts expressed in thousands)

Valuation Date:	July 1, 2024	July 1, 2023
<b>Membership</b> <ul style="list-style-type: none"> <li>• Number of               <ul style="list-style-type: none"> <li>- Active positions</li> <li>- Special contributors</li> <li>- Retirees and beneficiaries</li> <li>- Inactive members</li> <li>- Total</li> </ul> </li> <li>• Projected payroll</li> </ul>	43 16 336 25 <hr/> 420 \$967	44 18 336 27 <hr/> 425 \$1,000
<b>Contribution Requirement</b> <ul style="list-style-type: none"> <li>• Member contribution rate</li> <li>• Employer contribution requirement <sup>1</sup></li> </ul>	11.00% \$6,201	11.00% \$6,200
<b>Assets</b> <ul style="list-style-type: none"> <li>• Market value</li> <li>• Actuarial value</li> <li>• Return on market value</li> <li>• Return on actuarial value</li> <li>• Ratio - actuarial value to market value</li> <li>• External cash flow %</li> </ul>	\$50,526 49,399 10.5% 7.7% 97.8% 0.4%	\$45,560 45,723 7.3% 6.7% 100.4% 0.0%
<b>Actuarial Information</b> <ul style="list-style-type: none"> <li>• Normal cost %</li> <li>• Actuarial accrued liability (AAL)</li> <li>• Unfunded actuarial accrued liability (UAAL)</li> <li>• Funded ratio</li> <li>• Funding period from the valuation date<sup>2</sup></li> </ul>	22.04% \$66,520 17,121 74.3% 5 Years	22.16% \$67,853 22,130 67.4% 4 Years
<b>Reconciliation of UAAL</b> <ul style="list-style-type: none"> <li>• Beginning of Year UAAL               <ul style="list-style-type: none"> <li>- Interest on UAAL</li> <li>- Amortization payment</li> <li>- Assumption change</li> <li>- Asset experience</li> <li>- Liability experience</li> <li>- Legislative changes</li> </ul> </li> <li>• End of Year UAAL</li> </ul>	\$22,130 1,118 (6,152) (247) (317) 589 0 <hr/> \$17,121	\$27,007 1,459 (6,168) 0 124 (292) 0 <hr/> \$22,130

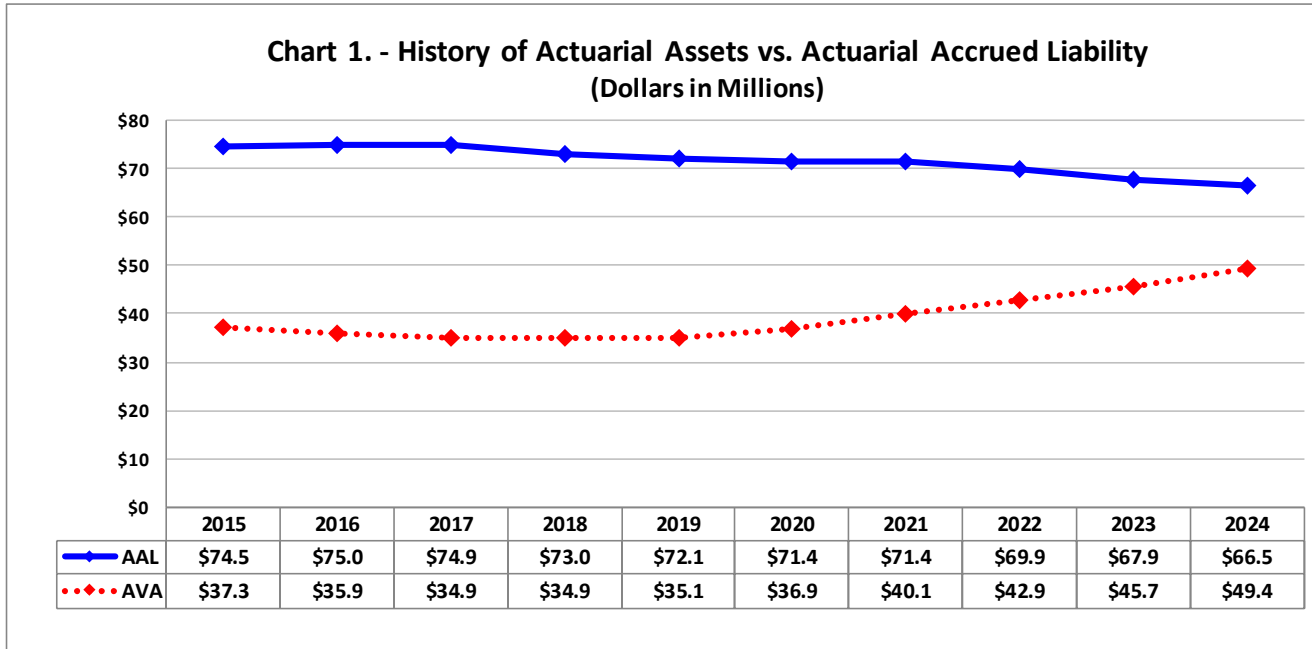
<sup>1</sup> The contribution requirement determined by the July 1, 2024 valuation is effective for the fiscal year beginning July 1, 2025. The contribution requirement determined by the July 1, 2023 valuation was adopted by the Board to be effective for the fiscal year beginning July 1, 2024.

<sup>2</sup> Gains/losses occurring after 2023 are amortized over separate closed 5-year amortization bases.



## Executive Summary (Continued)

The unfunded actuarial accrued liability decreased by \$5.0 million since the prior year’s valuation to \$17.1 million. The single largest source of this decrease is due to the State’s contribution to finance the unfunded actuarial accrued liability. Below is a chart with the historical actuarial value of assets and actuarial accrued liability for GARS.



The recommended employer contribution requirement determined by July 1, 2024 actuarial valuation increased from the prior year’s contribution requirement by \$0.001 million to \$6.2 million. Absent legislative changes or demographic or investment experience that is significantly different than assumed, we expect the recommended contribution to be relatively constant over the next three years as the pre-2023 amortization base is funded. Also, due to the current contribution effort, we expect the funded ratio (on an actuarial value of asset basis) to increase and the dollar amount of the unfunded actuarial liability to decrease in future years.

## SECTION B

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### DISCUSSION

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## Discussion

The results of the July 1, 2024 actuarial valuation of the Retirement System for Members of the General Assembly are presented in this report. The 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 members participating in the plan.

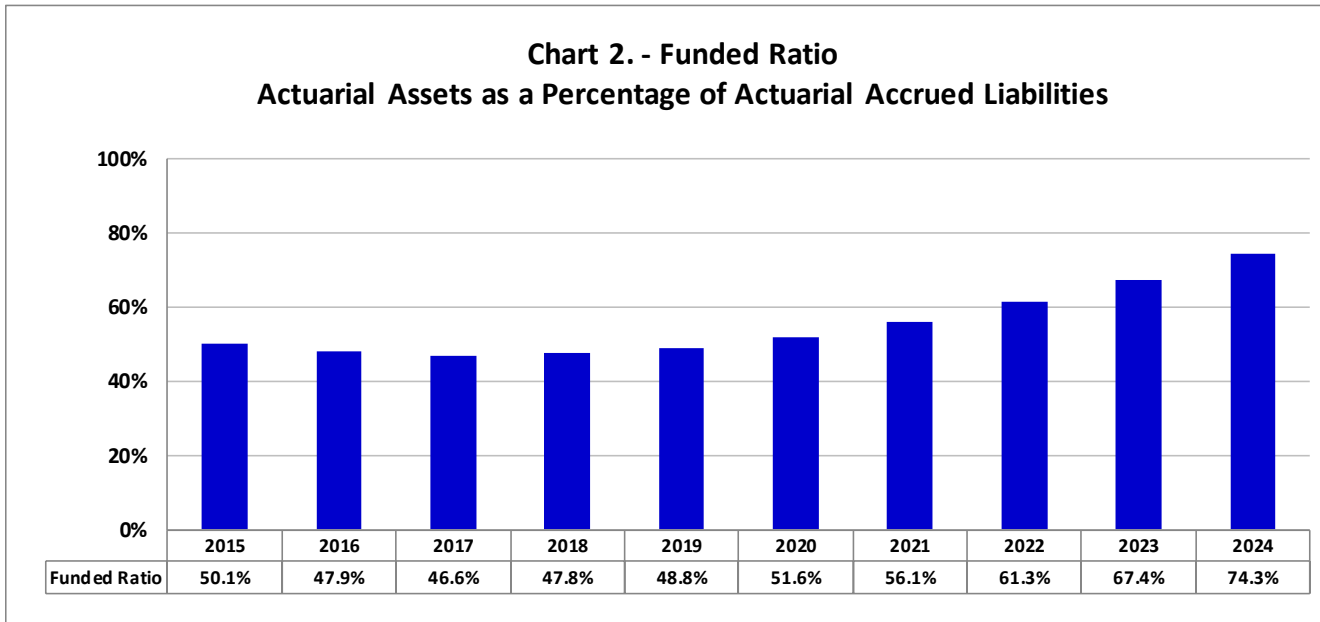
This section discusses the determination of the current funding requirements and the System's funded status, as well as changes in financial condition of the retirement system. The valuation results for the prior year are shown in this report for comparison purposes.

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. Section E provides an assessment and disclosure of risk as required by Actuarial Standards of Practice No. 51. 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.

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## Funding Progress

The funded ratio increased from 67.4% to 74.3% 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.

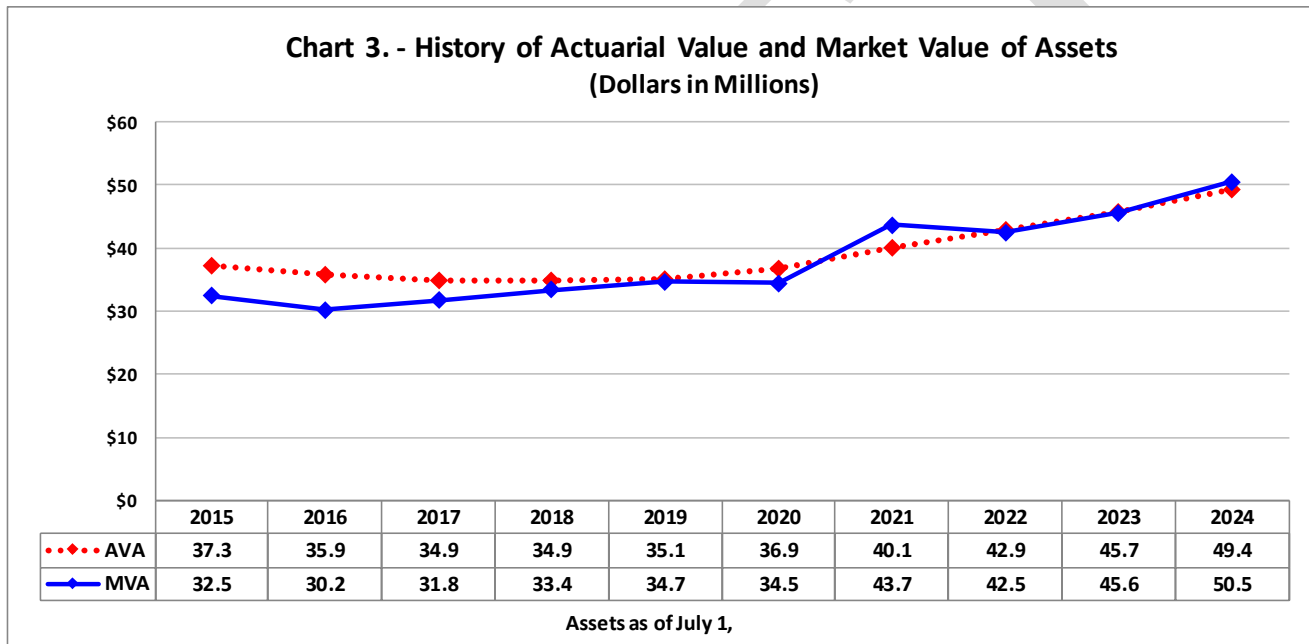


The Board updated the funding policy for this System as a result of the experience study such that the existing UAAL as of July 1, 2023 to be fully amortize the unfunded actuarial accrued liability (UAAL) by June 30, 2027. Under this funding policy, there are three years remaining in the funding period from the valuation date. Experience gains/losses that occur after 2023 are to be recognized as separate amortization bases that are funded over closed five-year periods, each.

## 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 \$45.7 million to \$49.4 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 for fiscal year 2024 was 10.5%, which is greater than the 7.00% investment return assumption. The return on an actuarial (smoothed) asset value was 7.7%. This difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.



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 decreased from \$22.1 million on July 1, 2023 to \$17.1 million on July 1, 2024. The table below shows the source of the gains and losses and the impact of those gains and losses on the UAAL.

<b>Reconciliation of UAAL</b>	
(Dollars in thousands)	
• Beginning of Year UAAL	\$22,130
- Interest on UAAL	\$1,118
- Amortization payment	(6,152)
- Assumption change	(247)
- Asset experience	(317)
- Liability experience	589
- Legislative changes	0
- Total change	<u>(5,009)</u>
• End of Year UAAL	\$17,121

## Actuarial Gains/ (Losses) and the Contribution Requirement (Continued)

The following table provides a reconciliation of the change in the recommended contribution from the July 1, 2023 valuation to the July 1, 2024 valuation.

<b>Change in Recommended Employer Contribution</b>	
(Dollars in thousands)	
• Prior year valuation	\$6,200
- Expected change	\$0
- Assumption change	(141)
- Asset experience	(206)
- Liability experience	348
- Total change	\$1
• Current year valuation	\$6,201

This funding method and contribution policy is designed to result in relatively level contribution requirements from year to year. However, as the funding period decreases, there could be some increased volatility in the contribution requirement because future experience gains and losses will be amortized over a shorter period.

### Development of the Employer Contribution

Amortization Base	Amount as of Valuation Date	Years Remaining as of Valuation Date	FY 2026 Amortization Amount
Pre-2024 Unfunded Actuarial Accrued Liability	\$ 17,096,101	3	\$ 6,086,972
2024 Gain/(Loss)	24,429	5	7,213
Total	\$ 17,120,530		\$ 6,094,185
 Employer Normal Cost			 \$ 106,703
 <b>Total FY 2026 Employer Contribution</b>			 <b>\$ 6,200,888</b>



## 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 Statute requires an experience analysis that reviews the economic and demographic assumptions be performed at least every five years and the last experience study was conducted for the five-year period ending June 30, 2023, and adopted by the Board in June 2024 for first use in the July 1, 2024 actuarial valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.00% for the July 1, 2024 actuarial valuation. Updated assumptions used in the July 1, 2024 valuation include:

- Updated mortality assumption for active members
- Updated mortality improvement assumption based on the 2020 MP projection scale
- Reduced rate of disability incidence

The Board also updated the funding policy for this System as a result of the experience study such that the existing UAAL as of July 1, 2023 to be fully amortize the unfunded actuarial accrued liability (UAAL) by June 30, 2027. Under this funding policy, there are three years remaining in the funding period from the valuation date. Experience gains/losses that occur after 2023 are to be recognized as separate amortization bases that are funded over closed five-year periods, each.

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System. The combined effect of the assumptions used in this valuation is expected to have no significant bias. 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.

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 7.00% 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 Statute. 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.

## 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 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).

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## SECTION C

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### ACTUARIAL TABLES

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# Actuarial Tables

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**Summary of Cost Items**  
(Dollar amounts expressed in thousands)

	July 1, 2024 (1)	July 1, 2023 (2)
1. Projected payroll of active members	\$ 967	\$ 1,000
2. Present value of future pay	\$ 4,564	\$ 5,261
3. Normal cost		
a. Total normal cost	\$ 213	\$ 222
b. Less: member contribution	(106)	(110)
c. Employer normal cost	\$ 107	\$ 112
4. Actuarial accrued liability for active members		
a. Present value of future benefits	\$ 11,612	\$ 11,894
b. Less: present value of future normal costs	(865)	(989)
c. Actuarial accrued liability	\$ 10,747	\$ 10,905
5. Total actuarial accrued liability for:		
a. Retirees and beneficiaries	\$ 52,966	\$ 53,997
b. Inactive members	2,807	2,951
c. Active members (Item 4c)	10,747	10,905
d. Total	\$ 66,520	\$ 67,853
6. Actuarial value of assets	\$ 49,399	\$ 45,723
7. Unfunded actuarial accrued liability (UAAL) (Item 5d - Item 6)	\$ 17,121	\$ 22,130
8. Annual Required Contribution		
a. Employer normal cost	\$ 107	\$ 112
b. Employer contribution to amortize the UAAL	6,094	6,088
c. Total employer contribution	\$ 6,201	\$ 6,200

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

	July 1, 2024	July 1, 2023
	(1)	(2)
1. Active members		
a. Service retirement	\$ 11,358	\$ 11,580
b. Disability retirement	47	84
c. Survivors' benefits	206	230
d. Total	\$ 11,611	\$ 11,894
2. Retired members		
a. Service retirement	\$ 44,524	\$ 45,955
b. Disability retirement	0	0
c. Beneficiaries	8,244	7,833
d. Incidental death benefits	198	209
e. Total	\$ 52,966	\$ 53,997
3. Inactive members		
a. Vested terminations	\$ 2,693	\$ 2,781
b. Nonvested terminations	114	170
c. Total	\$ 2,807	\$ 2,951
4. Total actuarial present value of future benefits	\$ 67,384	\$ 68,842

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**Analysis of Normal Cost**  
(Dollar amounts expressed in thousands)

	<u>July 1, 2024</u> (1)	<u>July 1, 2023</u> (2)
1. Total normal cost rate		
a. Service retirement	20.26%	20.19%
b. Survivor benefits	1.05%	0.99%
c. Disability benefits	0.55%	0.80%
d. Total	<u>21.86%</u>	<u>21.98%</u>
2. Admin expenses	0.18%	0.18%
3. Less: member contribution rate	<u>11.00%</u>	<u>11.00%</u>
4. Net employer normal cost rate	11.04%	11.16%
5. Projected valuation payroll	\$967	\$1,000
6. Projected employer normal cost contribution	\$107	\$112

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**Results of July 1, 2024 Valuation**  
**(Dollar amounts expressed in thousands)**

	July 1, 2024
	(1)
1. Actuarial Present Value of Future Benefits	
a. Present retired members and beneficiaries	\$ 52,966
b. Present active and inactive members	14,418
c. Total actuarial present value	\$ 67,384
2. Present Value of Future Normal Contributions	
a. Employee	\$ 502
b. Employer	362
c. Total future normal contributions	\$ 864
3. Actuarial Liability	\$ 66,520
4. Current Actuarial Value of Assets	\$ 49,399
5. Unfunded Actuarial Liability	\$ 17,121
6. Unfunded Actuarial Liability Liquidation Period from the Valuation Date	5 years <sup>1</sup>

<sup>1</sup> Gains/losses occurring after 2023 are amortized over separate 5-year closed amortization bases.



**Actuarial Balance Sheet**  
(Dollar amounts expressed in thousands)

	July 1, 2024 (1)	July 1, 2023 (2)
<b>1. <u>Assets</u></b>		
a. Current Assets (Actuarial Value)		
i. Employee annuity savings fund	\$ 5,535	\$ 5,608
ii. Employer annuity accumulation fund	43,864	40,115
iii. Total current assets	\$ 49,399	\$ 45,723
b. Present Value of Future Member Contributions <sup>1</sup>		
	\$ 502	\$ 578
c. Present Value of Future Employer Contributions		
i. Normal contributions	\$ 362	\$ 411
ii. Accrued liability contributions	17,121	22,130
iii. Total future employer contributions	\$ 17,483	\$ 22,541
d. Total Assets		
	\$ 67,384	\$ 68,842
<b>2. <u>Liabilities</u></b>		
a. Employee Annuity Savings Fund		
i. Past member contributions	\$ 5,535	\$ 5,608
ii. Present value of future member contributions <sup>1</sup>	502	578
iii. Total contributions to employee annuity savings fund	\$ 6,037	\$ 6,186
b. Employer Annuity Accumulation Fund		
i. Benefits currently in payment	\$ 52,966	\$ 53,997
ii. Benefits to be provided to other members	8,381	8,659
iii. Total benefits payable from employer annuity accumulation fund	\$ 61,347	\$ 62,656
c. Total Liabilities		
	\$ 67,384	\$ 68,842

<sup>1</sup> Includes expected contributions from special contributors.

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

Item (1)	July 1, 2024 (2)	July 1, 2023 (3)
1. Cash and cash equivalents (operating cash)	\$ 7,118	\$ 5,674
2. Receivables	628	290
3. Investments		
a. Short-term securities	\$ 250	\$ 150
b. Fixed income (global)	1,345	1,975
c. Global public equity	21,201	18,614
d. Alternative investments	20,142	19,866
e. Total investments	<u>\$ 42,938</u>	<u>\$ 40,605</u>
4. Securities lending cash collateral invested	\$ 324	\$ 2
5. Prepaid administrative expenses	1	1
6. Capital assets, net of accumulated depreciation	<u>4</u>	<u>5</u>
7. Total assets	<u>\$ 51,013</u>	<u>\$ 46,577</u>
8. Liabilities		
a. Due to other systems	\$ 0	\$ 0
b. Accounts payable	37	955
c. Investment fees payable	5	3
d. Obligations under securities lending	324	2
e. Due to South Carolina Retiree Health Insurance Trust Fund	0	0
f. Benefit payable	0	0
g. Other liabilities	121	57
h. Total liabilities	<u>\$ 487</u>	<u>\$ 1,017</u>
9. Total market value of assets available for benefits (Item 7. - Item 8.h.)	<u>\$ 50,526</u>	<u>\$ 45,560</u>
10. Asset allocation (investments) <sup>1</sup>		
a. Net invested cash	15.5%	11.2%
b. Fixed income	2.7%	4.3%
c. Public equities	42.0%	40.9%
d. Alternative investments	39.8%	43.6%
e. Total investments	<u>100.0%</u>	<u>100.0%</u>

<sup>1</sup> 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.



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

	Year Ending	
	July 1, 2024 (1)	July 1, 2023 (2)
1. Value of Assets at Beginning of Year	\$ 45,560	\$ 42,476
2. Revenue for the Year		
a. Contributions		
i. Member contributions	\$ 147	\$ 155
ii. Employer contributions	6,286	6,308
iii. Total	\$ 6,433	\$ 6,463
b. Income		
i. Interest, dividends, and other income	\$ 982	\$ 779
ii. Investment expenses	(518)	(498)
iii. Net	\$ 464	\$ 281
c. Net realized and unrealized gains (losses)	\$ 4,349	\$ 2,825
d. Total revenue	\$ 11,246	\$ 9,569
3. Expenditures for the Year		
a. Disbursements		
i. Refunds	\$ 0	\$ 0
ii. Regular annuity benefits	6,243	6,313
iii. Other benefit payments	13	15
iv. Net transfers to other systems	0	135
v. Total	\$ 6,256	\$ 6,463
b. Administrative expenses and depreciation	24	22
c. Total expenditures	\$ 6,280	\$ 6,485
4. Increase in Net Assets (Item 2. - Item 3.)	\$ 4,966	\$ 3,084
5. Value of Assets at End of Year (Item 1. + Item 4.)	\$ 50,526	\$ 45,560
6. Net External Cash Flow		
a. Dollar amount	\$ 177	\$ 0
b. Percentage of market value	0.4%	0.0%



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

	Year Ending June 30, 2024
1. Actuarial value of assets at beginning of year	\$ 45,723
2. Market value of assets at beginning of year	\$ 45,560
3. Net new investments	
a. Contributions	\$ 6,433
b. Disbursements	(6,280)
c. Subtotal	153
4. Market value of assets at end of year	\$ 50,526
5. Net earnings (Item 4. - Item 2. - Item 3.c.)	\$ 4,813
6. Assumed investment return rate for fiscal year	7.00%
7. Expected return (Item 6. x (Item 2. + 1/2 Item 3.c.))	\$ 3,195
8. Excess/(Deficit) return (Item 5. - Item 7.)	\$ 1,618
9. Excess/(Deficit) return on assets as of June 30, 2024:	
a.	\$ 1,294
b.	80
c.	(1,638)
d.	1,391
e.	0
f. Total	\$ 1,127
10. Actuarial value of assets as of June 30, 2024 (Item 4. - Item 9.f.)	\$ 49,399
11. Expected actuarial value as of June 30, 2023	\$ 49,082
12. Asset gain (loss) for year (Item 10. - Item 11.)	\$ 317
13. Asset gain (loss) as % of the actuarial value of assets	0.6%
14. Ratio of actuarial value to market value	97.8%



**Estimation of Yields**  
(Dollar amounts expressed in thousands)

	Year Ending	
	July 1, 2024 (1)	July 1, 2023 (2)
<b>1. Market Value Yield</b>		
a. Beginning of year market assets	\$ 45,560	\$ 42,476
b. Contributions to fund during the year	6,433	6,463
c. Disbursements	(6,280)	(6,485)
d. Investment income (net of investment expenses)	<u>4,813</u>	<u>3,106</u>
e. End of year market assets	\$ 50,526	\$ 45,560
f. Estimated dollar weighted market value yield	10.5%	7.3%
<b>2. Actuarial Value Yield</b>		
a. Beginning of year actuarial assets	\$ 45,723	\$ 42,869
b. Contributions to fund during the year	6,433	6,463
c. Disbursements	(6,280)	(6,485)
d. Investment income (net of investment expenses)	<u>3,523</u>	<u>2,876</u>
e. End of year actuarial assets	\$ 49,399	\$ 45,723
f. Estimated actuarial value yield	7.7%	6.7%

**Schedule of Funding Progress**  
(Dollar amounts expressed in thousands)

July 1, (1)	Actuarial Value of Assets (AVA) (2)	Actuarial Accrued Liability (AAL) (3)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2) (4)	Funded Ratio (2)/(3) (5)	Annual Covered Payroll <sup>1</sup> (6)	UAAL as % of Payroll (4)/(6) (7)
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	1399.0%
2014	37,646	74,514	36,868	50.5%	2,601	1417.5%
2015	37,312	74,509	37,197	50.1%	2,338	1591.0%
2016	35,926	74,996	39,070	47.9%	2,316	1,686.9%
2017	34,887	74,855	39,968	46.6%	1,961	2,038.2%
2018	34,902	73,004	38,102	47.8%	1,866	2,041.9%
2019	35,140	72,055	36,915	48.8%	1,570	2,351.3%
2020	36,869	71,426	34,557	51.6%	1,570	2,201.1%
2021	40,056	71,433	31,377	56.1%	1,249	2,512.1%
2022	42,869	69,876	27,007	61.3%	1,204	2,243.1%
2023	45,723	67,853	22,130	67.4%	1,000	2,213.0%
2024	49,399	66,520	17,121	74.3%	967	1,770.6%

<sup>1</sup> For valuations prior to 2013 the annual covered payroll included the payroll of filled and unfilled positions.

## 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, 2024
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar
Amortization period for contribution requirement	Gains / Losses occurring after 2023 are amortized over separate closed 5-year amortization bases.
Asset valuation method	5-Year Smoothed
Actuarial assumptions:	
Investment rate of return <sup>1</sup>	7.00%
Projected salary increases	None
Inflation	2.25%
Cost-of-living adjustments	0.00%
Retiree mortality	The gender-distinct South Carolina Retirees 2020 Mortality Tables, projected on a fully generational basis by 80% of Scale UMP. Male rates are multiplied by 97% and female rates are multiplied by 107%.

<sup>1</sup> This is a prescribed assumption in Section 9-16-335 of South Carolina State Code.

## Solvency Test

(Dollar amounts expressed in thousands)

July 1,	Actuarial Accrued Liability			Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets		
	Active Member Contributions	Retirants & Beneficiaries	Active & Inactive Members (Employer Financed)		Active	Retirants	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
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%
2017	6,852	58,042	9,961	34,887	100.0%	48.3%	0.0%
2018	7,066	55,749	10,189	34,902	100.0%	49.9%	0.0%
2019	6,661	55,781	9,613	35,140	100.0%	51.1%	0.0%
2020	7,046	53,951	10,429	36,869	100.0%	55.3%	0.0%
2021	6,567	55,142	9,724	40,056	100.0%	60.7%	0.0%
2022	6,508	53,995	9,373	42,869	100.0%	67.3%	0.0%
2023	5,608	53,997	8,248	45,723	100.0%	74.3%	0.0%
2024	5,535	52,966	8,019	49,399	100.0%	82.8%	0.0%





## **SECTION D**

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### **MEMBERSHIP INFORMATION**

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# Membership Information

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## Summary of Membership Data

	July 1, 2024 (1)	July 1, 2023 (2)
1. Active Members		
a. Males	38	39
b. Females	5	5
c. Total members	43	44
d. Total annualized prior year pay	\$ 966,800	\$ 1,000,200
e. Average pay	\$ 22,484	\$ 22,732
f. Average age	61.4	60.3
g. Average service	20.4	19.6
h. Member contributions with interest	\$ 3,442,598	\$ 3,364,640
i. Average contributions with interest	\$ 80,060	\$ 76,469
2. Special Contributors		
a. Males	11	13
b. Females	5	5
c. Total members	16	18
d. Member contributions with interest	\$ 973,736	\$ 1,042,593
e. Average contributions with interest	60,859	57,922
3. Vested Inactive Members		
a. Number	13	13
b. Total annual deferred benefits	\$ 278,502	\$ 284,980
c. Average annual deferred benefit	\$ 21,423	\$ 21,922
4. Nonvested Inactive Members		
a. Number	12	14
b. Member contributions with interest	\$ 113,816	\$ 170,048
c. Average contributions with interest	\$ 9,485	\$ 12,146
5. Service Retirees		
a. Number	251	255
b. Total annual benefits	\$ 5,152,256	\$ 5,211,446
c. Average annual benefit	\$ 20,527	\$ 20,437
d. Average age at the valuation date	76.4	75.8
e. Average age at retirement date	60.9	60.9
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
e. Average age at retirement date	N/A	N/A
7. Beneficiaries		
a. Number	85	81
b. Total annual benefits	\$ 1,060,471	\$ 1,013,559
c. Average annual benefit	\$ 12,476	\$ 12,513
d. Average age at the valuation date	73.7	73.1



## Summary of Historical Active Membership

July 1,	Number of Employers	Active Members		Covered Payroll		Average Annual Pay		Average Age	Average Service
		Number <sup>1</sup>	Percent Increase / (Decrease)	Amount in Thousands <sup>1</sup>	Percent Increase / (Decrease)	Amount	Percent Increase / (Decrease)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
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
2017	2	87	-14.7%	1,961	-15.3%	22,535	-0.8%	56.9	15.1
2018	2	83	-4.6%	1,866	-4.8%	22,476	-0.3%	57.8	16.0
2019	2	69	-16.9%	1,570	-15.9%	22,757	1.3%	58.5	17.1
2020	2	69	0.0%	1,570	0.0%	22,757	0.0%	59.5	18.1
2021	2	55	-20.3%	1,249	-20.4%	22,702	-0.2%	59.5	18.6
2022	2	53	-3.6%	1,204	-3.6%	22,713	0.0%	60.4	19.9
2023	2	44	-17.0%	1,000	-16.9%	22,732	0.1%	60.3	19.6
2024	2	43	-18.9%	967	-19.7%	22,484	-1.0%	61.4	20.4

<sup>1</sup> For valuations prior to 2013 the annual covered payroll included the payroll of filled and unfilled positions.

### Distribution of Active and Special Contributor Members by Age and Service

Attained Age	Years of Credited Service												Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Under 20	-	-	-	-	-	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-	-	-	-	-	-
25-29	-	-	-	-	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	-	-	-	-	-
35-39	-	-	-	-	-	-	1	-	-	-	-	-	1
40-44	-	-	-	-	-	-	-	-	-	-	-	-	-
45-49	-	-	-	-	-	-	2	4	2	-	-	-	8
50-54	-	-	-	-	-	-	-	4	4	1	-	-	9
55-59	-	-	-	-	-	-	2	5	4	2	-	-	13
60-64	-	-	-	-	-	-	3	4	5	1	-	1	14
65 & Over	-	-	-	-	-	-	3	5	2	1	3	-	14
Total	-	-	-	-	-	-	11	22	17	5	3	1	59



## Schedule of Annuitants by Type of Benefit

Type of Benefit/ Form of Payment (1)	Number (2)	Annual Benefits Amount (3)	Average Monthly Benefit (4)
Service :			
Maximum & QDRO	128	\$ 2,652,945	\$ 1,727
100% J&S	58	1,135,516	1,631
100% Pop-up	31	632,221	1,700
50% J&S	18	378,064	1,750
50% Pop-up	16	353,510	1,841
Subtotal:	251	\$ 5,152,256	\$ 1,711
Disability:			
Maximum	0	\$ 0	\$ 0
Beneficiaries:	85	\$ 1,060,471	\$ 1,040
Total:	336	\$ 6,212,727	\$ 1,541

## Distribution of Annuitants by Monthly Benefit

Monthly Benefit Amount	Number of Annuitants	Female	Male	Average Service
(1)	(2)	(3)	(4)	(5)
Under \$200	12	6	6	2.33
\$ 200 - 399	17	10	7	15.59
400 - 599	12	5	7	12.42
600 - 799	20	7	13	13.60
800 - 999	29	19	10	17.07
1,000 - 1,199	29	8	21	17.83
1,200 - 1,399	21	3	18	17.76
1,400 - 1,599	36	11	25	19.78
1,600 - 1,799	41	9	32	20.90
1,800 - 1,999	35	9	26	22.31
2,000 - 2,199	21	6	15	28.71
2,200 - 2,399	17	6	11	27.18
2,400 - 2,599	16	2	14	30.19
2,600 - 2,799	13	3	10	32.62
2,800 - 2,999	5	0	5	29.80
3,000 - 3,199	3	1	2	33.33
3,200 - 3,399	3	1	2	39.33
3,400 - 3,599	0	0	0	0.00
3,600 - 3,799	0	0	0	0.00
3,800 - 3,999	3	0	3	30.67
4,000 - 4,199	3	0	3	29.67
4,200 - 4,399	0	0	0	0.00
4,400 - 4,599	0	0	0	0.00
4,600 - 4,799	0	0	0	0.00
4,800 - 4,999	0	0	0	0.00
5,000 & Over	<u>0</u>	<u>0</u>	<u>0</u>	0.00
<b>Total</b>	<b>336</b>	<b>106</b>	<b>230</b>	<b>20.74</b>

Average age at retirement for service retirees as of July 1, 2024 is age 60.9.

## Schedule of Retirants Added to And Removed from Rolls

July 1, (1)	Added to Rolls		Removed from Rolls		Rolls End of the Year		% Increase in Annual Benefit (8)	Average Annual Benefit (9)
	Number (2)	Annual Benefits(\$000) (3)	Number (4)	Annual Benefits(\$000) (5)	Number (6)	Annual Benefits(\$000) (7)		
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
2017	18	345	22	427	354	6,532	-1.2%	18,451
2018	4	55	15	231	343	6,356	-2.7%	18,530
2019	19	290	17	268	345	6,378	0.3%	18,486
2020	7	99	14	217	338	6,260	-1.8%	18,521
2021	16	242	13	217	341	6,285	0.4%	18,432
2022	11	166	15	220	337	6,231	-0.9%	18,490
2023	19	302	20	308	336	6,225	-0.1%	18,527
2024	19	290	20	308	336	6,213	-0.2%	18,490



## SECTION E

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### ASSESSMENT AND DISCLOSURE OF RISK

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## **Risks Associated with Measuring the Accrued Liability And Actuarially Determined Contribution**

**(As Required by ASOP No. 51)**

The determination of GARS accrued liability, actuarially determined contribution, and calculated funding period requires the use of assumptions regarding future economic and demographic experience. The risk measures illustrated in this section are intended to aid stakeholders in understanding the effects when future experience differs from the assumptions used in performing an actuarial valuation. These risk measures may also help with illustrating the potential volatility in the funded status and actuarially determined contributions that result from differences between actual experience and the expected experience based on the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience (economic and demographic) differing from the assumptions, changes in assumptions due to changing conditions, changes in contribution requirements due to modifications to the funding policy, and changes in the liability and cost due to changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

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

- Investment risk – actual investment returns may differ from expected returns;
- Longevity risk – members may live longer or shorter than expected and receive pensions for a time period different than assumed;
- Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liabilities and contributions differing from expected;
- Salary and payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liabilities and contributions differing from expected;
- Asset/Liability mismatch – changes in assets may be inconsistent with changes in liabilities, thereby altering the relative difference between the assets and liabilities, which may alter the funded status and contribution requirements;
- Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions are not made in accordance with the System's funding policy or Statute, other anticipated payments to the plan are not made, or material changes occur in the anticipated number of covered employees, covered payroll, or another relevant contribution base.

On the other hand, effects of certain experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate of return, the funded status of the plan can be expected to decrease (or increase) more than anticipated.

Under South Carolina State Statute, the Board must certify the employer contribution annually. This amount is determined actuarially, based on the Board's funding policy. The contribution requirement determined by this actuarial valuation becomes effective twelve months after the valuation date.

### **Employer Risk with Contribution Requirements**

The funding policy is intended to finance the unfunded actuarial accrued liability over a reasonable time period and provide stability in the employer contribution rates so employers are better able to budget their pension cost in future years. However, as the funding period decreases there can be increased short-term volatility in the contribution requirement.

### **Plan Maturity Measures**

Risks faced by a pension plan evolve over time. A relatively new plan with virtually no assets and paying few benefits will experience lower investment risk than a mature plan with a significant amount of assets and large number of members receiving benefits. There are a few measures that can assist stakeholders in understanding and comparing the maturity of a plan to other systems, which include:

- Ratio of market value of assets to payroll: The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. If assets are approximately the same as covered payroll, an investment return that is 5% different than assumed would equal 5% of payroll. In another example, if the assets are approximately twice as large as covered payroll, an investment return that is 5% different than assumed would equal 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.
- Ratio of actuarial accrued liability to payroll: The ratio of actuarial accrued liability to payroll can be used as a measure to indicate the potential volatility of contributions due to volatility in the liability experience. For instance, if the actuarial accrued liability is 5 times the size of the covered payroll, then a change in the liability that is 2% different than expected would be a change in magnitude that is 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.

- Ratio of active to retired members: A relatively mature open plan is likely to have close to the same number of actives to retirees resulting in a ratio that is around 1.0. On the other hand, a super-mature plan, or a plan that is closed to new entrants will have more retirees than active members resulting in a ratio below 1.0. As this ratio declines, a larger portion of the total actuarial accrued liability in the System is attributable to retirees. This metric also typically moves in tandem with the liability to payroll metric, which provides an indication of potential contribution volatility.
- Ratio of net cash flow to market value of assets: A negative net cash flow means that benefit payments exceed contributions and the plan is depending on investment earnings and possibly existing funds to make payments to retirees. A certain amount of negative net cash flow is expected to occur when benefits are prefunded and the plan has matured. However, a relatively large negative net cash flow as a percent of assets may be an indication of the need for additional contributions for a plan with a low funded ratio.

The following exhibit provides a summary of these measures for GARS. We have also included these metrics for the prior four years so stakeholders can identify how these measures are trending.

	July 1,				
	2024	2023	2022	2021	2020
Ratio of the market value of assets to total payroll	52.25	45.56	35.28	34.95	21.95
Ratio of actuarial accrued liability to payroll	68.79	67.85	58.04	57.19	45.49
Ratio of actives to retirees and beneficiaries	0.13	0.13	0.16	0.16	0.20
Ratio of net cash flow to market value of assets	0.4%	0.0%	-0.3%	-0.6%	0.6%

## Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a low-default-risk obligation measure (LDROM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

*“The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the “right” liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan’s funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.”*

The LDROM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The current model expects lower costs but with higher investment risk, which creates less certainty and a possibility of higher costs. Thus, the difference between the two measures (Valuation and LDROM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio. However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 5.32%.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

Retirement System for Members of the General Assembly	
Valuation Accrued Liability	LDROM
\$66.520 Million	\$77.669 Million

Again, the difference between the two measures, or \$11.149 million, is one illustration of the savings the sponsor anticipates by assuming investment risk in a diversified portfolio.

Disclosures: Discount rate used to calculate LDROM: 5.32% Intermediate FTSE Pension Discount Curve as of June 30, 2024. This measure may not be appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.

## **APPENDIX A**

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### **ACTUARIAL ASSUMPTIONS AND METHODS**

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# 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. The actuarial assumptions are based on an experience study conducted as of July 1, 2023 and adopted by the Board in June 2024.

## ***Investment Rate of Return***

Assumed annual rate of 7.00% composed of a 2.25% inflation component and a 4.75% 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.

<b>Age Based Retirement Rates</b>	
<b>Age</b>	<b>Assumed Rate</b>
59 & Under	50%
60	20%
61-64	7%
65-69	10%
70 & older	100%

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

Age	Disability Rates		Pre-Retirement Mortality	
	Males	Females	Males	Females
25	0.0225%	0.0150%	0.0410%	0.0120%
30	0.0450%	0.0210%	0.0520%	0.0190%
35	0.0675%	0.0420%	0.0680%	0.0300%
40	0.1125%	0.0540%	0.0960%	0.0470%
45	0.1575%	0.0780%	0.1430%	0.0720%
50	0.2250%	0.1320%	0.2180%	0.1070%
55	0.3600%	0.2100%	0.3200%	0.1570%
60	0.4500%	0.3210%	0.4660%	0.2380%
64	0.5625%	0.4470%	0.6820%	0.3800%
Multiplier	68.0%	58.0%	100%	100%

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

### Post Retirement Mortality

- a. Healthy retirees and beneficiaries – The gender-distinct South Carolina Retirees 2020 Mortality Tables. The rates are projected on a fully generational basis by 80% of Scale UMP based on the 2020 MP projection scale to account for future mortality improvements and adjusted with multipliers based on plan experience. The following are sample rates of the base table:

Healthy Annuitant Mortality Rates Before Projection		
Age	Males	Females
50	0.1920%	0.2192%
55	0.3243%	0.2824%
60	0.5751%	0.3863%
65	0.8761%	0.5616%
70	1.4502%	0.9097%
75	2.5442%	1.7869%
80	4.7175%	3.5220%
85	8.5346%	6.8204%
90	14.9914%	12.8871%
Multiplier	97%	107%

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				
Gender	Year of Retirement			
	2025	2030	2035	2040
Male	21.1	21.4	21.6	21.9
Female	23.1	23.4	23.6	23.9



- b. A separate table of mortality rates is used for disabled retirees based on the Pub-2010 Public Retirement Plans Disabled Mortality tables on a fully generational basis by 80% of Scale UMP to account for future mortality and with multipliers based on plan experience. The following are sample rates of the base table:

Disabled Annuitant Mortality Rates		
Age	Males	Females
50	2.2470%	1.9279%
55	2.9596%	2.2646%
60	3.5042%	2.5428%
65	4.2616%	2.9328%
70	5.4614%	3.7206%
75	7.2688%	5.2039%
80	10.2872%	7.8091%
85	15.1410%	12.1303%
90	22.7542%	17.7645%
Multiplier	140%	130%

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. 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.

### ***Future Cost-of-living Increases***

No increases are assumed.

### ***Payroll Growth Rate***

None assumed.

### ***Other Assumptions***

1. The normal cost rate is increased by 0.18% to account for administrative expenses that are paid with plan assets.
2. Percent married: 100% of active members are assumed to be married.
3. Age difference: Males are assumed to be four years older than their spouses.
4. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an immediate life annuity.
5. 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.
6. It is assumed there will be no recoveries once disabled.
7. Decrement timing: Decrements of all types are assumed to occur mid-year.
8. 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.
9. Benefit Service: All active and special contributing members are assumed to accrue one year of 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 employer 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.

## **APPENDIX B**

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### **BENEFIT PROVISIONS**

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# 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



### ***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).

***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, the beneficiary may elect to receive, in lieu of the accumulated contributions, a monthly benefit for life of the beneficiary.

***Optional Forms of Benefit***: The System permits 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.

**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.

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## **APPENDIX C**

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### **GLOSSARY**

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## 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.)
- 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.

**Decremments:** 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 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.

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# South Carolina National Guard Supplemental Retirement Plan (SCNG)

ACTUARIAL VALUATION REPORT  
AS OF JULY 1, 2024

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December 4, 2024

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

**Subject: Actuarial Valuation as of July 1, 2024**

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) Statement Nos. 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, 2024 actuarial valuation will be used by the Board when certifying the employer contribution amount for the year beginning July 1, 2025. 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 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, 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 62.9% at July 1, 2023 to 68.3% as of July 1, 2024.

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 increased from 62.3% in 2023 to 69.3% in 2024, primarily due to the State's contribution effort to improve the financial security of the System. Specifically, plan assets earned a 10.49% return on a time weighted-basis (net of fees) as reported in the financial statement of the South Carolina Retirement Systems for the year ending June 30, 2024. The 10.0% return documented in this report was determined on a dollar-weighted basis and assumes mid-year cash flows.

### **ASSUMPTIONS AND METHODS**

South Carolina State Statute requires an experience analysis of the economic and demographic assumptions be performed at least every five years. An experience study was performed for the five-year period ending June 30, 2023, and the Board has adopted the assumptions recommended in that report for first use in the July 1, 2024 actuarial valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.00% for the July 1, 2024 actuarial valuation. The only assumption updated as a result of the experience study is the mortality improvement assumption.

It is our opinion that the current assumptions are internally consistent and reasonably reflect the anticipated future experience of the System. The combined effect of the assumptions used in this valuation is expected to have no significant bias.

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.

This report was prepared using our proprietary valuation model and related software, which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

### **BENEFIT PROVISIONS**

The benefit provisions reflected in this valuation are those which were in effect on July 1, 2024. 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, 2024, by the PEBA staff. The staff also supplied asset information as of July 1, 2024. 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.



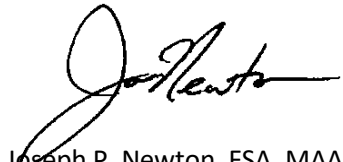
**CERTIFICATION**

We certify that the information presented herein is accurate and fairly portrays the actuarial position of SCNG as of July 1, 2024.

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. The undersigned are independent actuaries and consultants. All three are also Enrolled Actuaries and Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries. Each are experienced in performing valuations for large public retirement systems.

Sincerely,

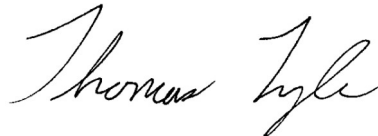
**Gabriel, Roeder, Smith & Co.**



Joseph P. Newton, FSA, MAAA, EA  
Pension Market Leader and Actuary



Daniel J. White, FSA, MAAA, EA  
Vice President and Actuary



Thomas Lyle, FSA, MAAA, EA  
Consultant





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## **SECTION A**

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### **EXECUTIVE SUMMARY**

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# Executive Summary

(Dollar amounts expressed in thousands)

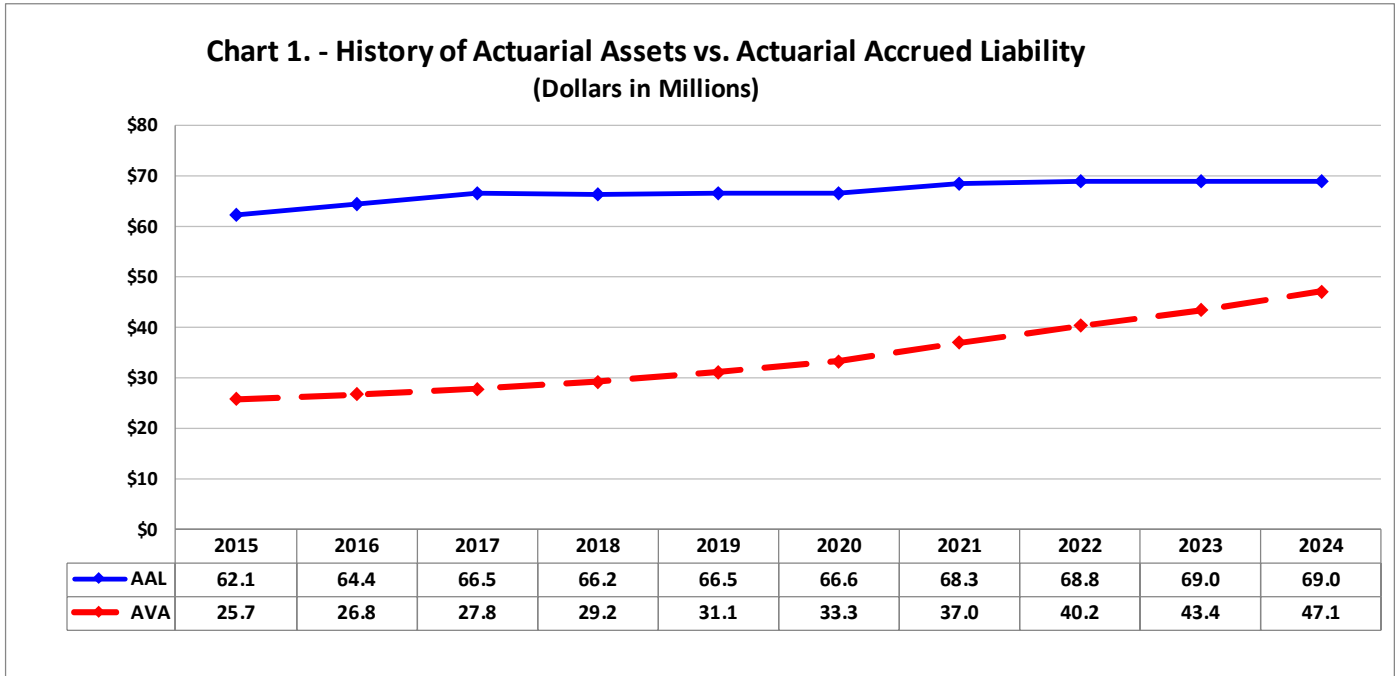
Valuation Date:	July 1, 2024	July 1, 2023
<b>Membership</b> <ul style="list-style-type: none"> <li>• Number of               <ul style="list-style-type: none"> <li>- Active Members</li> <li>- Retirees</li> <li>- Inactive Members</li> <li>- Total</li> </ul> </li> </ul>	12,620 5,211 1,292 <hr/> 19,123	12,071 5,161 1,400 <hr/> 18,632
<b>Annual Required Contribution</b> <ul style="list-style-type: none"> <li>• Member</li> <li>• Employer contribution<sup>1</sup></li> </ul>	\$0 \$3,402	\$0 \$3,621
<b>Assets</b> <ul style="list-style-type: none"> <li>• Market value</li> <li>• Actuarial value</li> <li>• Return on market value</li> <li>• Return on actuarial value</li> <li>• Ratio - actuarial value to market value</li> <li>• External cash flow %</li> </ul>	\$47,789 47,096 10.0% 7.2% 98.5% 1.2%	\$42,943 43,401 7.0% 6.4% 101.1% 1.5%
<b>Actuarial Information</b> <ul style="list-style-type: none"> <li>• Normal cost</li> <li>• Actuarial accrued liability (AAL)</li> <li>• Unfunded actuarial accrued liability (UAAL)</li> <li>• Funded ratio</li> <li>• Amortization period</li> </ul>	\$859 68,988 21,892 68.3% 12	\$801 68,975 25,574 62.9% 13
<b>Reconciliation of UAAL</b> <ul style="list-style-type: none"> <li>• Beginning of Year UAAL               <ul style="list-style-type: none"> <li>- Interest on UAAL</li> <li>- Amortization payment</li> <li>- Assumption/method changes</li> <li>- Asset experience</li> <li>- Other liability experience</li> <li>- Legislative changes</li> </ul> </li> <li>• End of Year UAAL</li> </ul>	\$25,574 1,790 (4,646) 114 (108) (832) 0 <hr/> \$21,892	\$28,580 2,001 (4,650) 0 256 (613) 0 <hr/> \$25,574

<sup>1</sup> The contribution amount determined by the actuarial valuation is effective for the following fiscal year. The calculated contribution requirement for FY 2024 was \$3,837 thousand. However, the state's actual appropriation for FY 2024 was \$5,290 thousand.



## Executive Summary (Continued)

The unfunded actuarial accrued liability decreased by \$3.7 million since the prior year’s valuation to \$21.9 million. The largest source of this decrease since the prior year was due the State’s contribution to finance the unfunded actuarial accrued liability. Below is a chart with the historical actuarial value of assets and actuarial accrued liability for SCNG.



Due to the Board’s funding policy to finance the unfunded actuarial accrued liability over a closed period, we expect the unfunded actuarial liability for the System to continue to decrease and the funded ratio to steadily increase in future years.

The recommended employer contribution decreased by \$0.219 million dollars to \$3.402 million for the fiscal year ending June 30, 2026. Absent legislative changes or liability and investment experience that are significantly different than assumed, we expect the contribution requirement to be relatively stable in future years.

## SECTION B

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### DISCUSSION

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## Discussion

The results of the July 1, 2024 actuarial valuation of the South Carolina National Guard Supplemental Retirement Plan are presented in this report. The 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 members participating in the plan.

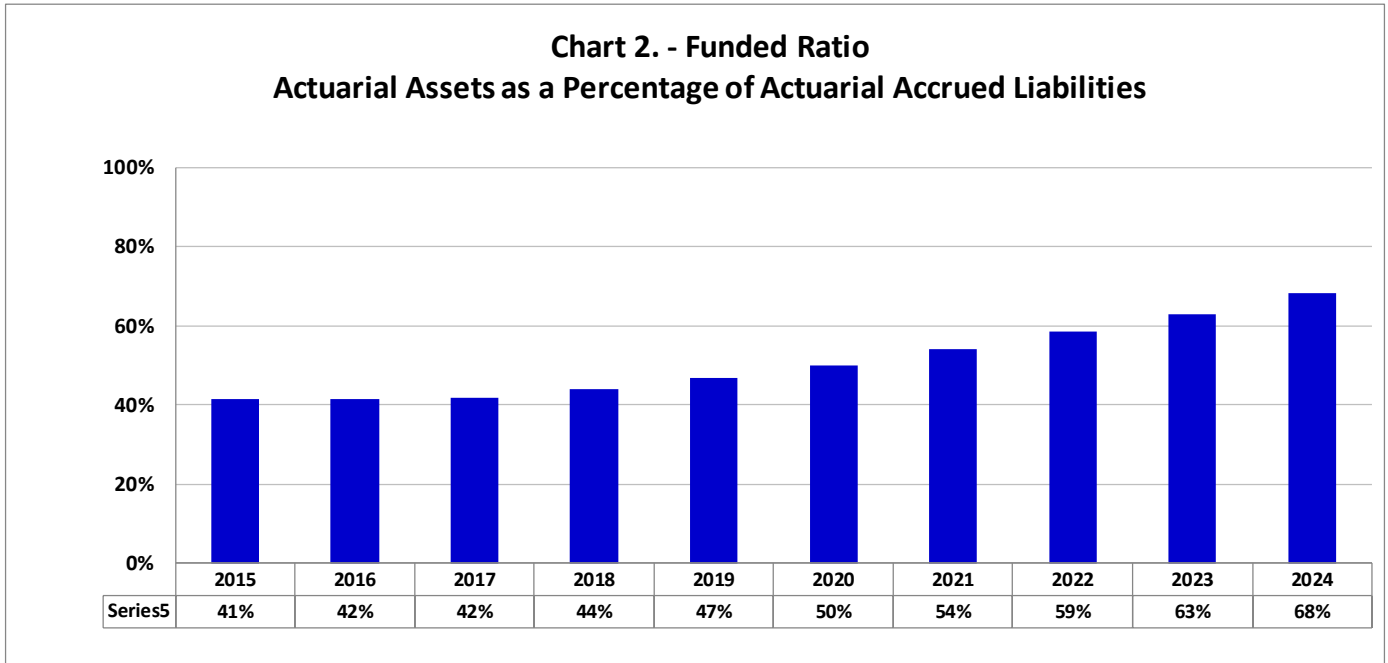
This section discusses the determination of the current funding requirements and the System's funded status, as well as changes in financial condition of the retirement system.

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. Section E provides an assessment and disclosure of risk as required by Actuarial Standards of Practice No. 51. 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.

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## Funding Progress

The funded ratio increased from 62.9% to 68.3% since the prior valuation and has generally trended upward over the last several 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.

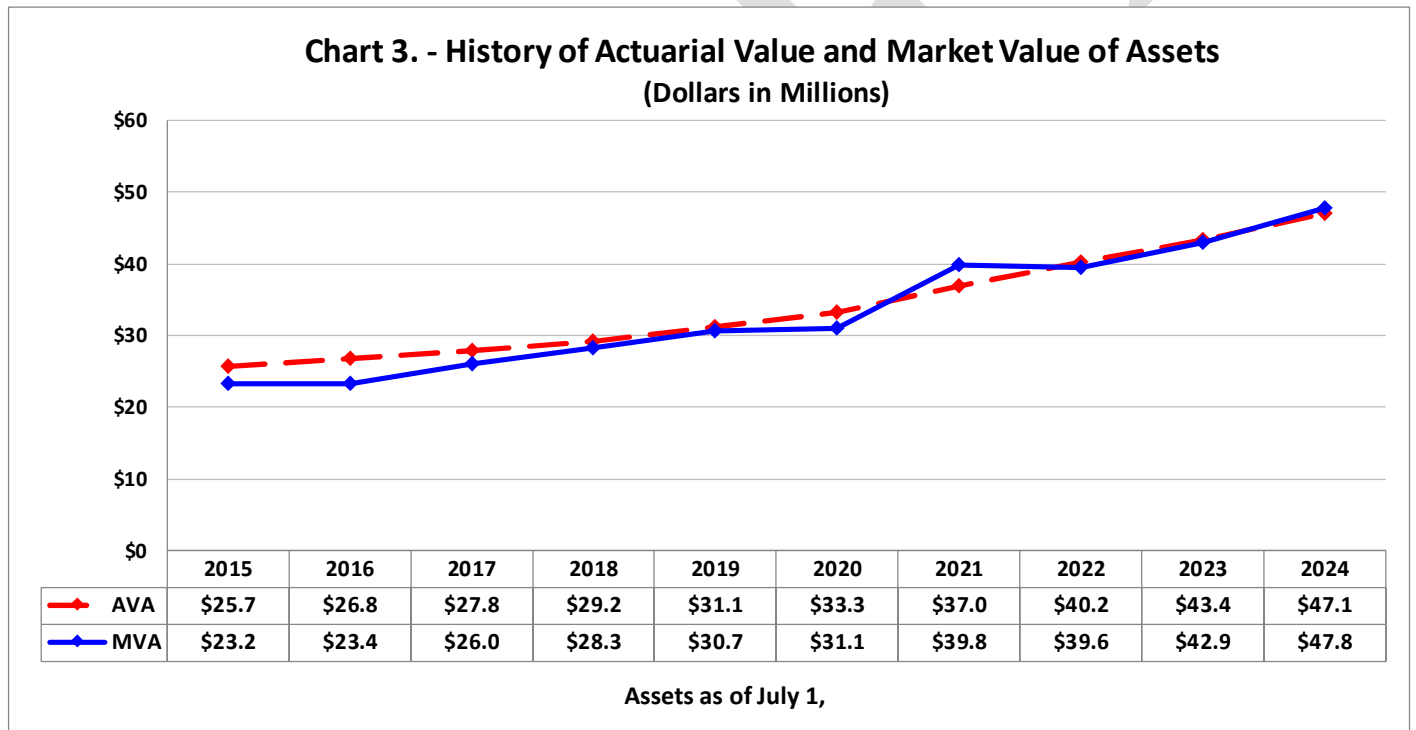


The contribution policy established by the Board is to fully amortize the unfunded actuarial accrued liability (UAAL) over a 30-year period from July 1, 2006. Under this funding policy, there are 12 years remaining in the funding period from the valuation date. The total State appropriation required to be made for FY 2026 is \$3,401,687.

## 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 \$43.4 million to \$47.1 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 fiscal year 2024 was 10.0%, which is greater than the 7.00% investment return assumption. However, because of the offset and recognition of deferred investment losses that occurred in prior years, the actuarial (smoothed) asset value returned is 7.2%. This difference in the estimated return on market value and actuarial value illustrates the smoothing effect of the asset valuation method.



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 decreased from \$25.574 million in 2023 to \$21.892 million in 2024. The table below shows the source of the gains and losses and the impact of those gains and losses on the UAAL.

<b>Reconciliation of UAAL</b>	
<b>(Dollars in thousands)</b>	
• Beginning of Year UAAL	\$25,574
- Interest on UAAL	1,790
- Amortization payment	(4,646)
- Assumption / method change	114
- Asset experience	(108)
- Liability experience	(832)
- Legislative changes	0
- Total change	(\$3,682)
• End of Year UAAL	\$21,892

The single largest source of the net \$2.9 million net reduction in the unfunded actuarial accrued liability is due to the State's contribution effort to improve the financial security of the System, which is equal to the amortization payment less the interest on the UAAL.

## Actuarial Gains/ (Losses) and the Contribution Requirement (Continued)

The following table provides a reconciliation of the change in the recommended contribution from the 2023 valuation to the 2024 valuation. The \$166 thousand dollar decrease in the expected change in contribution requirement is primarily attributable to the State's contribution to the System in FY 2024 being more than the actuarial determined contribution.

Change in Recommended Contribution	
• Prior year valuation	\$3,621
- Expected change	(166)
- Assumption / method change	0
- Asset experience	(14)
- Liability experience	(39)
- Legislative changes	0
- Total change	(\$219)
• Current year valuation	\$3,402

Absent changes in plan provisions and assumptions, we expect future contribution requirements to remain relatively constant for the several years.

## 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 an experience analysis of the economic and demographic assumptions be performed at least every five years. An experience study was performed for the five-year period ending June 30, 2023, and the Board has adopted the assumptions recommended in that report for first use in the July 1, 2024 actuarial valuation. The investment return assumption is a prescribed assumption in Section 9-16-335 in South Carolina State Code and remains at 7.00% for the July 1, 2024 actuarial valuation. The only assumption updated as a result of the experience study is the mortality improvement assumption.

It is our opinion that the current assumptions are internally consistent and reasonable reflect the anticipated future experience of the System. Appendix A includes a summary of the actuarial assumptions and methods used in this valuation.

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 7.00% return on the actuarial value of assets determined as of the actuarial valuation date. Establishing the contribution rates, 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.

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 that is different than expected based on the prior actuarial valuation.

## 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.

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## SECTION C

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### ACTUARIAL TABLES

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# Actuarial Tables

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**Summary of Cost Items**  
(Dollar amounts expressed in thousands)

	July 1, 2024 (1)	July 1, 2023 (2)
1. Normal Cost		
a. Total normal cost	\$ 859	\$ 801
b. Less: member contribution	0	0
c. Employer normal cost	\$ 859	\$ 801
2. Actuarial Accrued Liability for Active Members		
a. Present value of future benefits	\$ 30,921	\$ 29,834
b. Less: present value of future normal costs	7,530	6,950
c. Actuarial accrued liability	\$ 23,391	\$ 22,884
3. Total Actuarial Accrued Liability		
a. Retirees	\$ 37,163	\$ 37,031
b. Inactive members	8,434	9,060
c. Active members (Item 2.c.)	23,391	22,884
d. Total	\$ 68,988	\$ 68,975
4. Actuarial Value of Assets	\$ 47,096	\$ 43,401
5. Unfunded Actuarial Accrued Liability (UAAL) (Item 3.d. - Item 4.)	\$ 21,892	\$ 25,574
6. Annual Required Contribution		
a. Normal cost	\$ 859	\$ 801
b. Amortization of the UAAL	2,544	2,820
c. Total contribution	\$ 3,403	\$ 3,621



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

	July 1, 2024	July 1, 2023
	(1)	(2)
1. Active members		
a. Service retirement	\$ 6,035	\$ 5,842
b. Deferred termination benefits <sup>1</sup>	24,886	23,992
c. Survivor benefits	0	0
d. Disability benefits	0	0
e. Total	\$ 30,921	\$ 29,834
2. Retired and Inactive members		
a. Members in payment status	\$ 37,163	\$ 37,031
b. Inactive vested members	8,434	9,060
c. Total	\$ 45,597	\$ 46,091
3. Total actuarial present value of future benefits	\$ 76,518	\$ 75,925

<sup>1</sup> Attributable to members who terminate after attaining 20 years of service and prior to age 60, the age when retirement benefits commence.





**Analysis of Normal Cost**  
(Dollar amounts expressed in thousands)

	July 1, 2024	July 1, 2023
	(1)	(2)
1. Total normal cost		
a. Retirement benefits	\$ 91	\$ 85
b. Deferred termination benefits	748	701
c. Survivor benefits	0	0
d. Disability benefits	0	0
e. Total	839	786
2. Administrative expense	\$ 20	\$ 15
3. Less: member contributions	\$ 0	\$ 0
4. Net employer normal cost	\$ 859	\$ 801

**Results of July 1, 2024 Valuation**  
(Dollar amounts expressed in thousands)

	July 1, 2024
	(1)
1. Actuarial Present Value of Future Benefits	
a. Present Retired Members	\$ 37,163
b. Present Active and Inactive Members	39,355
c. Total Actuarial Present Value	\$ 76,518
2. Present Value of Future Normal Contributions	
a. Member	\$ 0
b. Employer	7,530
c. Total Future Normal Contributions	\$ 7,530
3. Actuarial Liability	\$ 68,988
4. Current Actuarial Value of Assets	\$ 47,096
5. Unfunded Actuarial Liability	\$ 21,892
6. Unfunded Actuarial Liability Liquidation Period <sup>1</sup>	12 years

<sup>1</sup> There are 12 years remaining in the amortization of the unfunded liability due to plan experience from the valuation date.

**Actuarial Balance Sheet**  
(Dollar amounts expressed in thousands)

	July 1, 2024 (1)	July 1, 2023 (2)
1. Assets		
a. Current assets (actuarial value)	\$ 47,096	\$ 43,401
b. Present value of future member contributions	0	0
c. Present value of future employer contributions		
i. Normal contributions	\$ 7,530	\$ 6,950
ii. Accrued liability contributions	21,892	25,574
iii. Total future employer contributions	\$ 29,422	\$ 32,524
d. Total assets	\$ 76,518	\$ 75,925
2. Liabilities		
a. Benefits to be paid to retired members	\$ 37,163	\$ 37,031
b. Benefits to be paid to former members entitled to deferred pensions	8,434	9,060
c. Benefits to be paid to current active members	30,921	29,834
d. Total liabilities	\$ 76,518	\$ 75,925

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

Item (1)	July 1, 2024 (2)	July 1, 2023 (3)
1. Cash and cash equivalents (operating cash)	\$ 11,029	\$ 9,161
2. Receivables	548	263
3. Investments		
a. Short-term securities	\$ 212	\$ 128
b. Fixed income (global)	1,139	1,672
c. Global public equity	17,948	15,761
d. Alternative investments	17,053	16,821
e. Total investments	\$ 36,352	\$ 34,382
4. Securities lending cash collateral invested	\$ 275	\$ 2
5. Prepaid administrative expenses	1	0
6. Capital assets, net of accumulated depreciation	0	0
7. Total assets	\$ 48,205	\$ 43,808
8. Liabilities		
a. Due to other systems	\$ 0	\$ 0
b. Accounts payable	32	808
c. Investment fees payable	4	3
d. Obligations under securities lending	275	2
e. Deferred retirement benefits	0	0
f. Due to South Carolina Retiree Health Insurance Trust Fund	0	0
g. Benefit payable	3	4
h. Other liabilities	102	48
i. Total liabilities	\$ 416	\$ 865
9. Total market value of assets available for benefits (Item 7. - Item 8.i.)	\$ 47,789	\$ 42,943
10. Asset allocation (investments) <sup>1</sup>		
a. Net Invested cash	24.4%	20.2%
b. Fixed income	2.4%	3.9%
c. Public equities	37.5%	36.7%
d. Alternative investments	35.7%	39.2%
e. Total investments	100.0%	100.0%

<sup>1</sup> 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.



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

	Year Ending	
	July 1, 2024 (1)	July 1, 2023 (2)
1. Value of assets at beginning of year	\$ 42,943	\$ 39,567
2. Revenue for the year		
a. Contributions		
i. Member contributions	\$ 0	\$ 0
ii. Employer contributions	5,290	5,290
iii. Total	\$ 5,290	\$ 5,290
b. Income		
i. Interest, dividends, and other income	\$ 1,079	\$ 807
ii. Investment expenses	(439)	(423)
iii. Net	\$ 640	\$ 384
c. Net realized and unrealized gains (losses)	3,676	2,392
d. Total revenue	\$ 9,606	\$ 8,066
3. Expenditures for the year		
a. Disbursements		
i. Refunds	\$ 0	\$ 0
ii. Regular annuity benefits	4,738	4,669
iii. Other benefit payments	0	0
iv. Transfers to other Systems	0	0
v. Total	\$ 4,738	\$ 4,669
b. Administrative expenses and depreciation	22	21
c. Total expenditures	\$ 4,760	\$ 4,690
4. Increase in net assets (Item 2.d.- Item 3.c.)	\$ 4,846	\$ 3,376
5. Value of assets at end of year (Item 1. + Item 4.)	\$ 47,789	\$ 42,943
6. Net external cash flow		
a. Dollar amount	\$ 552	\$ 621
b. Percentage of market value	1.2%	1.5%



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

		Year Ending June 30, 2024		
1. Actuarial value of assets at beginning of year	\$	43,401		
2. Market value of assets at beginning of year	\$	42,943		
3. Net new investments				
a. Contributions	\$	5,290		
b. Disbursements		(4,760)		
c. Subtotal		530		
4. Market value of assets at end of year	\$	47,789		
5. Net earnings (Item 4. - Item 2. - Item 3.c.)	\$	4,316		
6. Assumed investment return rate for fiscal year		7.00%		
7. Expected return (Item 6. x (Item 2. + 1/2 Item 3.c))	\$	3,025		
8. Excess/(Deficit) return (Item 5. - Item 7.)	\$	1,291		
9. Excess/(Deficit) return on assets as of June 30, 2024:				
	<u>Fiscal Year</u> <u>Ending June 30,</u>	<u>Excess/(Deficit)</u> <u>Return</u>	<u>Percent</u> <u>Deferred</u>	<u>Deferred</u> <u>Amount</u>
	(1)	(2)	(3)	(4)
a.	2024	\$ 1,291	80%	\$ 1,033
b.	2023	(15)	60%	(9)
c.	2022	(3,686)	40%	(1,474)
d.	2021	5,717	20%	1,143
e.	2020	(2,604)	0%	0
f.	Total			\$ 693
10. Actuarial value of assets as of June 30, 2024 (Item 4. - Item 9.f.)	\$	47,096		
11. Expected actuarial value as of June 30, 2024	\$	46,988		
12. Asset gain (loss) for year (Item 10. - Item 11.)	\$	108		
13. Asset gain (loss) as % of the actuarial value of assets		0.2%		
14. Ratio of actuarial value to market value		98.5%		



**Estimation of Yields**  
(Dollar amounts expressed in thousands)

	Year Ending	
	July 1, 2024 (1)	July 1, 2023 (2)
1. Market value yield		
a. Beginning of year market assets	\$ 42,943	\$ 39,567
b. Contributions to fund during the year	5,290	5,290
c. Disbursements	(4,760)	(4,690)
d. Investment income (net of investment expenses)	<u>4,316</u>	<u>2,776</u>
e. End of year market assets	\$ 47,789	\$ 42,943
f. Estimated dollar weighted market value yield	10.0%	7.0%
2. Actuarial value yield		
a. Beginning of year actuarial assets	\$ 43,401	\$ 40,221
b. Contributions to fund during the year	5,290	5,290
c. Disbursements	(4,760)	(4,690)
d. Investment income (net of investment expenses)	<u>3,165</u>	<u>2,580</u>
e. End of year actuarial assets	\$ 47,096	\$ 43,401
f. Estimated actuarial value yield	7.2%	6.4%

**Schedule of Funding Progress**  
**(Dollar amounts expressed in thousands)**

July 1, (1)	Actuarial Value of Assets (AVA) (2)	Actuarial Accrued Liability (AAL) (3)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2) (4)	Funded Ratio (2)/(3) (5)	Annual Covered Payroll (6)	UAAL as % of Payroll (4)/(6) (7)
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
2017	27,807	66,506	38,699	41.8%	N/A	N/A
2018	29,246	66,192	36,946	44.2%	N/A	N/A
2019	31,122	66,523	35,401	46.8%	N/A	N/A
2020	33,299	66,597	33,298	50.0%	N/A	N/A
2021	36,958	68,332	31,374	54.1%	N/A	N/A
2022	40,221	68,801	28,580	58.5%	N/A	N/A
2023	43,401	68,975	25,574	62.9%	N/A	N/A
2024	47,096	68,988	21,892	68.3%	N/A	N/A





## 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, 2024
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar
Amortization period for recommended contribution	12-year closed period
Asset valuation method	5-Year Smoothing
Actuarial assumptions:	
Investment rate of return <sup>1</sup>	7.00%
Projected salary increases	None
Inflation	2.25%
Cost-of-living adjustments	0.00%
Retiree mortality	<p>The gender-distinct South Carolina Retirees 2020 Mortality Tables projected on a fully generational basis by 80% of Scale UMP. Male rates are multiplied by 127% and female rates are multiplied by 107%.</p>

<sup>1</sup> This is a prescribed assumption in Section 9-16-335 of South Carolina State Code.

## Solvency Test

(Dollar amounts expressed in thousands)

July 1, (1)	Actuarial Accrued Liability				Valuation Assets (5)	Portion of Aggregate Accrued Liabilities Covered by Assets		
	Active Member Contributions (2)	Retirants & Beneficiaries (3)	Active & Inactive Members (Employer Financed) (4)			Active (6)	Retirants (7)	ER Financed (8)
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%
2017	0	35,391	31,115		27,807	N/A	78.6%	0.0%
2018	0	35,132	31,060		29,246	N/A	83.2%	0.0%
2019	0	35,589	30,934		31,122	N/A	87.4%	0.0%
2020	0	35,756	30,841		33,299	N/A	93.1%	0.0%
2021	0	36,316	32,016		36,958	N/A	100.0%	2.0%
2022	0	36,714	32,087		40,221	N/A	100.0%	10.9%
2023	0	37,031	31,944		43,401	N/A	100.0%	19.9%
2024	0	37,163	31,825		47,096	N/A	100.0%	31.2%



## **SECTION D**

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### **MEMBERSHIP INFORMATION**

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# Membership Information

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## Summary of Membership Data

	July 1, 2024 (1)	July 1, 2023 (2)
1. Active members		
a. Males	9,759	9,459
b. Females	2,861	2,612
c. Total members	12,620	12,071
d. Average age	32.4	32.8
e. Average service	10.7	11.0
2. Vested inactive members		
a. Number	1,292	1,400
b. Total annual deferred benefits	\$ 1,038,720	\$ 1,128,480
c. Average annual deferred benefit	\$ 804	\$ 806
3. Service retirees		
a. Number	5,211	5,161
b. Total annual benefits	\$ 4,732,680	\$ 4,680,180
c. Average annual benefit	\$ 908	\$ 907
d. Average age	72.6	72.4
e. Average age at retirement date	60.0	60.0

### 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)
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
2017	1	12,116	N/A	N/A	N/A	32.3	9.8
2018	1	11,853	N/A	N/A	N/A	32.4	9.9
2019	1	12,100	N/A	N/A	N/A	32.2	9.7
2020	1	12,099	N/A	N/A	N/A	32.2	9.7
2021	1	12,146	N/A	N/A	N/A	32.2	10.4
2022	1	12,047	N/A	N/A	N/A	32.6	10.8
2023	1	12,071	N/A	N/A	N/A	32.8	11.0
2024	1	12,620	N/A	N/A	N/A	32.4	10.7



## Distribution of Active Members by Age and by Years of Service

Attained Age	Years of Credited Service												Total
	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30-34</u>	<u>35 &amp; Over</u>	
Under 20	359	379	73	0	0	0	0	0	0	0	0	0	811
20-24	218	417	482	569	556	786	0	0	0	0	0	0	3,028
25-29	53	83	57	139	206	1,669	265	0	0	0	0	0	2,472
30-34	30	45	30	61	66	492	947	175	0	0	0	0	1,846
35-39	9	8	14	21	30	178	360	651	149	0	0	0	1,420
40-44	6	1	6	2	5	55	119	230	457	72	0	0	953
45-49	0	1	1	1	2	14	54	101	224	211	33	0	642
50-54	0	0	0	0	0	4	24	56	220	177	160	53	694
55-59	0	0	0	0	0	0	6	20	161	158	96	146	587
60-64	0	0	0	0	0	0	1	1	36	45	33	35	151
65 & Over	0	0	0	0	0	1	1	0	1	4	5	4	16
Total	675	934	663	793	865	3,199	1,777	1,234	1,248	667	327	238	12,620

**Distribution of Annuitants by Age  
as of July 1, 2024**

<u>Age</u> (1)	<u>Number of Annuitants</u> (2)	<u>Total Annual Benefits</u> (3)	<u>Average Annual Benefits</u> (4)
Under 50	0	0	N/A
50 - 54	0	0	N/A
55 - 59	0	0	N/A
60 - 64	1,089	\$ 993	\$ 912
65 - 69	954	854	895
70 - 74	1,104	984	891
75 - 79	1,266	1,149	908
80 & Over	798	753	944
<b>Total</b>	<b>5,211</b>	<b>\$ 4,733</b>	<b>\$ 908</b>

Dollar amounts, except averages, are expressed in thousands.



### Schedule of Retirants Added to And Removed from Rolls

(Dollar amounts except average allowance expressed in thousands)

July 1, (1)	Added to Rolls		Removed from Rolls		Rolls End of the Year		% Increase in Annual Benefit (8)	Average Annual Benefit (9)
	Number (2)	Annual Benefits (3)	Number (4)	Annual Benefits (5)	Number (6)	Annual Benefits (7)		
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
2017	222	197	142	137	4,789	4,357	1.4%	910
2018	192	174	160	150	4,821	4,381	0.6%	909
2019	241	213	139	129	4,923	4,465	1.9%	907
2020	211	191	153	141	4,981	4,515	1.1%	906
2021	243	217	197	182	5,027	4,550	0.8%	905
2022	232	213	162	145	5,097	4,618	1.5%	906
2023	225	207	161	145	5,161	4,680	1.3%	907
2024	213	194	163	141	5,211	4,733	1.1%	908



## SECTION E

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### ASSESSMENT AND DISCLOSURE OF RISK

DRAFT

# Risks Associated with Measuring the Accrued Liability And Actuarially Determined Contribution

(As Required by ASOP No. 51)

The determination of SCNG accrued liability and actuarially determined contribution requirement requires the use of assumptions regarding future economic and demographic experience. The risk measures illustrated in this section are intended to aid stakeholders in understanding the effects when future experience differs from the assumptions used in performing an actuarial valuation. These risk measures may also help with illustrating the potential volatility in the funded status and actuarially determined contributions that result from differences between actual experience and the expected experience based on the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience (economic and demographic) differing from the assumptions, changes in assumptions due to changing conditions, changes in contribution requirements due to modifications to the funding policy, and changes in the liability and cost due to changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

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

- Investment risk – actual investment returns may differ from expected returns;
- Longevity risk – members may live longer or shorter than expected and receive pensions for a time period different than assumed;
- Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liabilities and contributions differing from expected;
- Asset/Liability mismatch – changes in assets may be inconsistent with changes in liabilities, thereby altering the relative difference between the assets and liabilities, which may alter the funded status and contribution requirements;
- Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions are not made in accordance with the System's funding policy or Statute, other anticipated payments to the plan are not made, or material changes occur in the anticipated number of covered employees, covered payroll, or another relevant contribution base.

On the other hand, effects of certain experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate of return, the funded status of the plan can be expected to decrease (or increase) more than anticipated.

## Employer Risk with Contribution Requirements

Under South Carolina State Statute, the Board must certify the employer contribution requirement annually. This amount is determined actuarially, based on the Board's funding policy.

The funding policy is intended to finance the unfunded actuarial accrued liability over a reasonable time period and provide stability in the employer contribution rates so employers are better able to budget their pension cost in future years. The greater the difference between the calculated funding period based on the contribution rate specified in State Code and the maximum specified funding period, the greater the ability for the System to incur some adverse experience without requiring an increase in the employer contribution rate.

However, providing stability in the contribution requirements means that projecting the year the fund actually attains a 100% funded ratio becomes less certain. If actual experience is more favorable than assumed, then the year the fund attains a 100% funded ratio will be earlier than projected, but the projected year the fund attains a 100% funded ratio will be later than projected if actual experience is less favorable than assumed.

## Plan Maturity Measures

Risks faced by a pension plan evolve over time. A relatively new plan with virtually no assets and paying few benefits will experience lower investment risk than a mature plan with a significant amount of assets and large number of members receiving benefits. There are a few measures that can assist stakeholders in understanding and comparing the maturity of a plan to other systems, which include:

- Ratio of active to retired members: A relatively mature open plan is likely to have close to the same number of actives to retirees resulting in a ratio that is around 1.0. On the other hand, a super-mature plan, or a plan that is closed to new entrants will have more retirees than active members resulting in a ratio below 1.0. As this ratio declines, a larger portion of the total actuarial accrued liability in the System is attributable to retirees. This metric also typically moves in tandem with the liability to payroll metric, which provides an indication of potential contribution volatility.
- Ratio of net cash flow to market value of assets: A negative net cash flow means that benefit payments exceed contributions and the plan is depending on investment earnings and possibly existing funds to make payments to retirees. A certain amount of negative net cash flow is expected to occur when benefits are prefunded and the plan has matured. However, a relatively large negative net cash flow as a percent of assets may be an indication of the need for additional contributions for a plan with a low funded ratio.

The following exhibit provides a summary of these measures for SCNG. We have also included these metrics for the prior four years so stakeholders can identify how these measures are trending.

	2024	2023	July 1, 2022	2021	2020
Ratio of actives to retirees and beneficiaries	2.42	2.34	2.36	2.42	2.43
Ratio of net cash flow to market value of assets	1.3%	1.5%	1.7%	2.0%	2.5%

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## Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a low-default-risk obligation measure (LDROM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

*“The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the “right” liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan’s funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.”*

The LDROM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The current model expects lower costs but with higher investment risk, which creates less certainty and a possibility of higher costs. Thus, the difference between the two measures (Valuation and LDROM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio. However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 5.32%.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

South Carolina National Guard Supplemental Retirement Plan	
Valuation Accrued Liability	LDROM
\$68.988 Million	\$84.800 Million

Again, the difference between the two measures, or \$15.812 million, is one illustration of the savings the sponsor anticipates by assuming investment risk in a diversified portfolio.

Disclosures: Discount rate used to calculate LDROM: 5.32% Intermediate FTSE Pension Discount Curve as of June 30, 2024. This measure may not be appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan’s benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.

## **APPENDIX A**

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### **ACTUARIAL ASSUMPTIONS AND METHODS**

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## 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 7.00% net of investment and administrative expenses composed of a 2.25% inflation component and a 4.75% 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. 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	21 - 29	30+
Age < 60	10%	5%	100%
Age > 59	100%	100%	100%

Members who reach age 60 with less than 20 years of service are assumed to retire at age 60 without a benefit from the plan.

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

Age	Disability Rates		Pre-Retirement Mortality	
	Males	Females	Males	Females
25	0.1200%	0.1200%	0.0500%	0.0260%
30	0.1600%	0.1600%	0.0550%	0.0360%
35	0.3000%	0.3000%	0.0620%	0.0490%
40	0.4000%	0.4000%	0.0780%	0.0660%
45	0.6000%	0.6000%	0.1090%	0.0900%
50	0.7500%	0.7500%	0.1590%	0.1230%
55	0.0000%	0.0000%	0.2330%	0.1670%
60	0.0000%	0.0000%	0.3510%	0.2270%
64	0.0000%	0.0000%	0.4990%	0.2900%
Multiplier	100.0%	100.0%	100.0%	100.0%

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



### Post Retirement Mortality

Healthy retirees and beneficiaries – The gender-distinct South Carolina Retirees 2020 Mortality Tables. The rates are projected on a fully generational basis by 80% of Scale UMP to account for future mortality improvements and adjusted with multipliers based on plan experience. The following are sample rates of the base table:

Annuitant Mortality Rates Before Projection		
Age	Males	Females
50	0.2513%	0.2192%
55	0.4246%	0.2824%
60	0.7530%	0.3863%
65	1.1471%	0.5616%
70	1.8988%	0.9097%
75	3.3311%	1.7869%
80	6.1765%	3.5220%
85	11.1742%	6.8204%
90	19.6279%	12.8871%
Multiplier	127%	107%

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					
Gender	Year of Retirement				
	2025	2030	2035	2040	2045
Male	19.0	19.3	19.6	19.9	20.2
Female	23.1	23.4	23.6	23.9	24.1

### 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. 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.

### ***Future Cost-of-Living Increases***

No increases are assumed.

### ***Payroll Growth Rate***

None assumed.

### ***Other Assumptions***

1. The normal cost includes \$20,000 for plan incurred administrative expenses.
2. There is not a marriage assumption.
3. Decrement timing: Decrements of all types are assumed to occur mid-year.
4. 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.
5. Contribution timing: Contributions are assumed to be paid in the beginning of the applicable fiscal year.

### ***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.



## **APPENDIX B**

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### **BENEFIT PROVISIONS**

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# 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.



## **APPENDIX C**

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### **GLOSSARY**

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## 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.)
- 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.

**Decremments:** 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, 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.

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**PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM  
BOARD MEETING**

**Meeting Date:** December 4, 2024

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**1. Subject:** Health and Retirement Financial Statements Audit and Deferred Compensation  
Financial Statements Audit

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**2. Summary:** Mr. Kevin Smith, Audit Partner from Crowe, will present the Financial Statements for the South Carolina Retirement Systems, Insurance Benefits and OPEB Trust Funds, and for the South Carolina Deferred Compensation Program.

**3. What is the Committee asked to do?** Receive as Information

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**4. Supporting Documents:**

(a) Attached: Presentation of 2024 Audit Results



# South Carolina Public Employee Benefit Authority

Presentation of 2024 Audit Results

December 4, 2024

# Agenda

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- Audit and Internal Control Results
- Required Communication to Those Charged With Governance
- Questions and Discussion

- The accompanying information should be read in conjunction with the audited financial statements and is intended solely for the information and use of the Audit Committee, management and others within the organization and is not intended to be and should not be used by anyone other than these specified parties.
- The information in this document is not – and is not intended to be – audit, tax, accounting, advisory, risk, performance, consulting, business, financial, investment, legal, or other professional advice. Some firm services may not be available to attest clients. The information is general in nature, based on existing authorities, and is subject to change. The information is not a substitute for professional advice or services, and you should consult a qualified professional adviser before taking any action based on the information. Crowe is not responsible for any loss incurred by any person who relies on the information discussed in this document. Visit [www.crowe.com/disclosure](http://www.crowe.com/disclosure) for more information about Crowe LLP, its subsidiaries, and Crowe Global © 2023 Crowe LLP.

# Crowe Presenter

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**Kevin W. Smith, CPA**  
Audit Partner



# Audit and Internal Control Results

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State of South Carolina Deferred Compensation Program (“Deferred Comp”)

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South Carolina Retirement Systems (“Retirement Systems”)

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South Carolina Public Employee Benefit Authority Insurance Benefits and Post Employment Benefits Trust Funds (“Insurance Benefits and OPEB Trusts”)

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# Audit Results – Deferred Comp

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- Independent Auditor’s Report on the State of South Carolina Deferred Compensation Program Annual Financial Report for the year ended December 31, 2023

## *Opinion*

We have audited the combined financial statements of fiduciary net position and changes in fiduciary net position of the State of South Carolina Deferred Compensation Program (the “Program”), as of and for the year ended December 31, 2023, and the related notes to the combined financial statements, which collectively comprise the Program’s basic combined financial statements as listed in the table of contents.

In our opinion, the accompanying combined financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Program, as of December 31, 2023, and the changes in fiduciary position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

# Audit Results – Retirement Systems

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- Independent Auditor's Report on the South Carolina Retirement Systems Annual Financial Report for the year ended June 30, 2024

## *Opinion*

We have audited the financial statements of the South Carolina Retirement Systems (the Systems) as administered by the South Carolina Public Employee Benefit Authority, included as fiduciary funds of the State of South Carolina, as of and for the year ended June 30, 2024, and the related notes to the financial statements, which collectively comprise the Systems' basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Systems, as of June 30, 2024, and the changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.



# Audit Results – Insurance Benefits and OPEB Trusts

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- Independent Auditor’s Report on the South Carolina Public Employee Benefit Authority Insurance Benefits and Post Employment Benefits Trust Funds Annual Financial Report for the year ended June 30, 2024

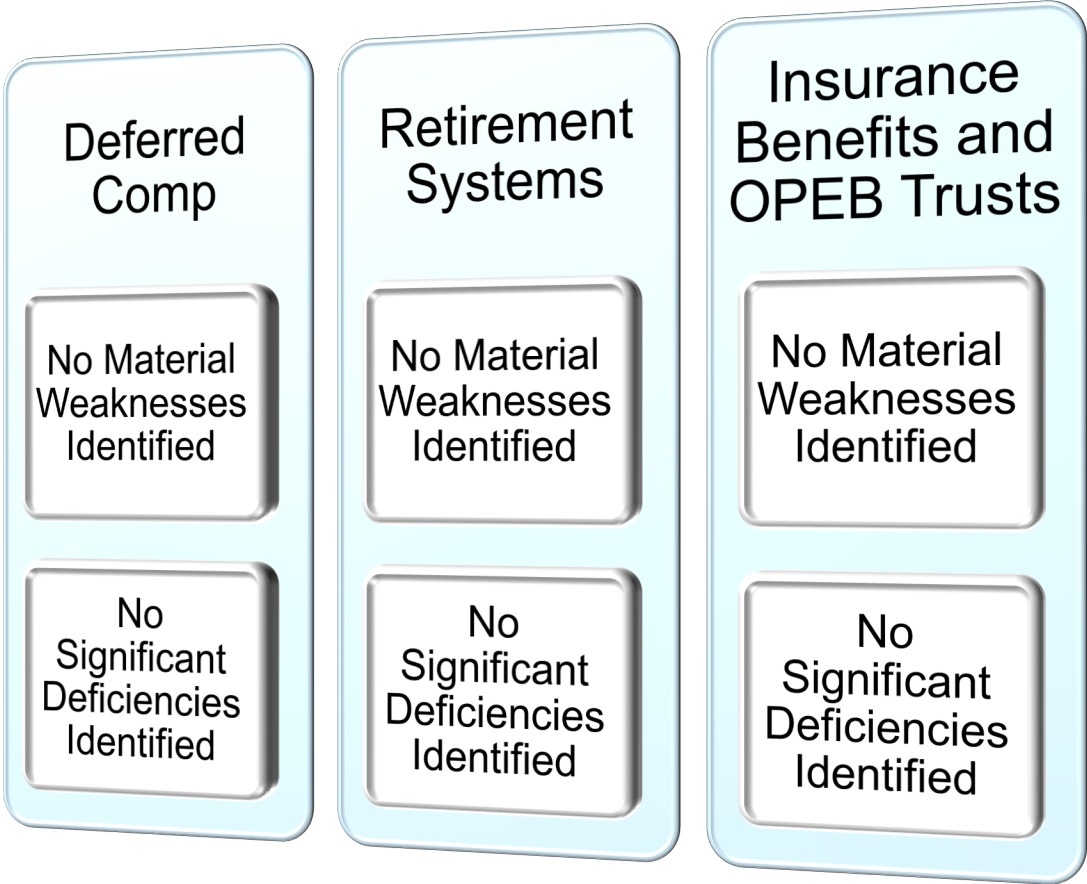
## *Opinions*

We have audited the financial statements of South Carolina Public Employee Benefit Authority Insurance Benefits (PEBA), an internal service fund of the State of South Carolina, the South Carolina Retiree Health Insurance Trust Fund, a fiduciary fund of the State of South Carolina, and the South Carolina Long-Term Disability Insurance Trust Fund, a fiduciary fund of the State of South Carolina, collectively referred to as “PEBA Insurance Benefits,” as of and for the year ended June 30, 2024, and the related notes to the financial statements, which collectively comprise the PEBA Insurance Benefits’ basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the respective financial position of PEBA Insurance Benefits as of June 30, 2024, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

# Internal Control Results

- Internal Control and Compliance Report
  - We obtain sufficient understanding of the entity and its environment, including internal controls, in order to plan the audit, but not to express an opinion on internal controls.
  - Therefore, our consideration of internal control is for a limited purpose and is not designed to identify all deficiencies in internal control that might be significant deficiencies or material weaknesses.





# Required Communications to Those Charged with Governance

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State of South Carolina Deferred Compensation  
Program (“Deferred Comp”)

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South Carolina Retirement Systems (“Retirement  
Systems”)

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South Carolina Public Employee Benefit Authority  
Insurance Benefits and Post Employment Benefits  
Trust Funds (“Insurance Benefits and OPEB Trusts”)

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# Required Communications to Those Charged with Governance

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- Auditor's Responsibility Under Auditing Standards Generally Accepted In The United States Of America and *Government Auditing Standards*
- Key Considerations
  - Existence and valuation of investments and derivative instruments
  - Actuarial assumptions: Total Pension Liability
  - Actuarial assumptions: Total OPEB Liability
- Significant Accounting Policies And Management Judgments and Accounting Estimates
- Auditor's Judgments About Qualitative Aspects of Significant Accounting Practices
- Corrected and Uncorrected Misstatements

# Required Communications to Those Charged with Governance

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- Other Communications
  - Other Information in Documents Containing Audited Financial Statements
  - Significant Difficulties Encountered During The Audit
  - Disagreements With Management
  - Consultations With Other Accountants
  - Representations The Auditor Is Requesting From Management
  - Significant Issues Discussed, Or Subject To Correspondence, With Management
  - Significant Related Party Findings and issues
  - Other Finding or Issues We Find Relevant or Significant

# Questions & Discussion





# Thank you

Kevin W. Smith, CPA

Partner

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**PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM  
BOARD MEETING**

**Meeting Date:** December 4, 2024

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**1. Subject:** 2025 Board and Committee Meeting Dates

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**2. Summary:** 2025 Proposed Board and Committee meeting schedule.

**3. What is the Board asked to do?** Approve the 2025 Quarterly Board and Committee Meeting Dates Schedule. Please note during the months of June and October, the Board and Committee meetings will be held the 4th Wednesday of the month. The PEBA Board Retreat will be on August 20<sup>th</sup>-21<sup>st</sup> at Wampee.

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**4. Supporting Documents:**

- (a) Attached:
  - 1. 2025 PEBA Board and Committee Meeting Dates



## 2025 PEBA Board and Committee Meeting Dates

<b>Health Care Policy Committee 9:30 AM</b>	<b>FAAC Committee 11:30 AM</b>
03/05/25	03/05/25
06/25/25	06/25/25
10/22/25	10/22/25
12/03/25	12/03/25

<b>Retirement Policy Committee 1:00 PM</b>	<b>Board Meetings 3:00 PM</b>
03/05/25	03/05/25
06/25/25	06/25/25
10/22/25	08/20/25 - 08/21/25 (retreat)
12/03/25	10/22/25
	12/03/25

**\*\* Please note during the months of June and October, the Board and Committee meetings will be held the 4th Wednesday of the month. The Board Retreat is scheduled for August 20-21<sup>st</sup>.**

**PUBLIC EMPLOYEE BENEFIT AUTHORITY AGENDA ITEM  
BOARD MEETING**

**Meeting Date:** December 4, 2024

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**1. Subject:** State ORP Fund Change Recommendation

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**2. Summary:** PEBA's co-fiduciary investment advisor for the State Optional Retirement Program (State ORP), Captrust, has recommended that PEBA remove the JP Morgan Emerging Markets Equity fund from the investment lineup offered by Empower in the State ORP as a result of persistent underperformance. Captrust further recommends that the fund be replaced in the Empower State ORP investment lineup with the Driehaus Emerging Markets fund and that plan assets in the JP Morgan Emerging Markets Equity fund be mapped to that fund.

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**3. What is the Board asked to do?** Remove the JP Morgan Emerging Markets Equity fund from the Empower State ORP investment lineup and replace the fund with the Driehaus Emerging Markets fund.

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**4. Supporting Documents:**

(a) List those attached:

1. Memorandum from Captrust regarding its recommendation related to the JP Morgan Emerging Markets Equity fund.



**DATE:** December 4, 2024  
**TO:** The South Carolina Public Employee Benefit Authority Retirement Policy Committee and Board of Directors  
**FROM:** CAPTRUST Financial Advisors  
**RE:** Investment Menu Recommendation

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## **Overview**

As the 3(21) co-fiduciary investment advisor to South Carolina Public Employee Benefit Authority, CAPTRUST Financial Advisors (“CAPTRUST”) reviews the investments with regard to the State Optional Retirement Program (“State ORP”) and Deferred Comp Program (“Deferred Comp”) quarterly. As part of this review, CAPTRUST is presenting the following recommendation for approval.

## **Fund Replacement**

**JP Morgan Emerging Markets Equity R6 (JEMWX)** is held in the State ORP, with Empower being the recordkeeper. Based upon a thorough analysis of the fund in relation to the guidelines of the CAPTRUST Investment Policy Monitoring Methodology, CAPTRUST recommends the removal and replacement of the fund with the **Driehaus Emerging Markets (DIEMX) fund**.

### ***Current Fund – Performance Overview***

The JP Morgan Emerging Markets (EM) fund was a strong performer during the decade leading up to the pandemic in 2020, a period which generally favored the fund’s growth style. The fund outperformed the core EM index in seven out of those 10 years. However, since the end of 2020, the growth style has generally been out of favor in emerging markets, with the core EM index outperforming the EM growth index in most quarters. We have been cognizant of this stylistic headwind for the strategy and have been patient with it given the stable team and a process that worked well when its style was in favor. However, those stylistic factors have faded this year, and the fund is still underperforming in a more favorable environment.

### ***Alternatives***

In accordance with the guidelines of the State ORP IPS, the service provider, Empower, provided several alternative investment options for consideration, including:

- Driehaus Emerging Markets Growth (DIEMX)
- Fidelity Advisor Focused Emerging Markets Z (FZAEX)



Of these options, CAPTRUST believes Driehaus Emerging Markets Growth (DIEMX) to be the most appropriate option to include in the comparison of alternative investments alongside Fidelity Advisor Focused Emerging Markets Z, neither of which are currently offered within the investment menu of other State ORP service providers.

### ***Recommendation***

Based on the analysis of the current investment option and the evaluated alternatives, CAPTRUST recommends the following related to **JP Morgan Emerging Markets Equity R6 (JEMWX)**:

*Remove JP Morgan Emerging Markets Equity R6 (JEMWX) as an available investment option within the State ORP – Empower program and map all current assets and future contributions to Driehaus Emerging Markets Growth (DIEMX).*

The Driehaus Emerging Markets (EM) Growth Fund is guided by three long-tenured co-portfolio managers including Howie Schwab (since 2008), Chad Cleaver (since 2008), and Richard Thies (since 2014). The PM team is supported by five dedicated analysts providing sector level coverage. The investment process utilizes multiple approaches including bottom-up, fundamental research, macroeconomic analysis, and behavioral finance, and focuses on firms that are experiencing a positive inflection in their earnings growth rate. Focus is placed on the magnitude of change in earnings, the rate of change, and the durability or sustainability of the change in earnings, all of which are broadly underestimated by analysts because of behavioral biases. Different approaches to growth investing provide diversification within the portfolio, and include dynamic growth companies (35-55%), cyclical growth companies (15-35%), recovery growth companies (15-35%), and consistent growth companies (15-35%).

The strategy has been a consistent performer over much of the past decade, despite a generally difficult environment for its growth style since the end of 2020 and has historically exhibited attractive downside protection. Through the end of June 2024, the fund's results ranked near or within the upper third of the diversified emerging markets peer group and well ahead of the MSCI Emerging Markets Index over most trailing time periods. Despite weaker performance during the third quarter, the fund's trailing results are quite strong, ranking near the median of the peer group over shorter time periods, and in the upper third over longer-term time periods. CAPTRUST has a high degree of confidence in this experienced team and its nimble investment process that has helped the strategy largely avoid the macroeconomic and geopolitical issues that have plagued emerging markets since the pandemic started in 2020.

### ***Timing of Implementation***

If the recommendation is approved, the timing of implementation will be dependent upon the recordkeeper's process and required timeframe to execute the change. It has been confirmed that the fund is available on the Empower platform.

**Fund Comparison**

	JPMorgan Emerging Markets Equity R6	Driehaus Emerging Markets Growth Instl	Fidelity Advisor Focused Em Mkts Z	MSCI EM NR USD	US Fund Diversified Emerging Mkts
Ticker	JEMWX	DIEMX	FZAEX	—	—
Manager Name	Multiple	Multiple	Sam Polyak	—	—
Manager Tenure (Longest)	19.17	17.25	5.75	—	—
Fund Size	\$ 6,958,540,511	\$ 3,093,894,636	\$ 5,758,175,189	—	—
Prospectus Net Expense Ratio	0.79%	1.09%	0.84%	—	1.12%

**Annualized Performance**

Quarter	4.49%	2.03%	8.69%	8.72%	6.32%
YTD	10.55%	13.99%	19.08%	16.86%	13.70%
1 Year	19.93%	23.40%	29.47%	26.05%	22.96%
3 Year	-5.63%	-0.79%	1.11%	0.40%	-0.07%
5 Year	3.56%	6.66%	7.94%	5.75%	5.84%
10 Year	4.71%	5.21%	6.68%	4.02%	3.72%

**Calendar Year Performance**

2023	7.44%	11.45%	8.60%	9.83%	12.32%
2022	-25.61%	-22.35%	-19.75%	-20.09%	-20.86%
2021	-10.14%	-1.69%	-2.42%	-2.54%	0.38%
2020	35.00%	27.62%	30.61%	18.31%	17.90%
2019	32.20%	25.60%	29.81%	18.44%	19.25%
2018	-15.82%	-16.08%	-17.95%	-14.58%	-16.07%

**MPT Statistics (5 Year)**

Standard Deviation	20.15	16.77	20.58	18.63	18.25
Sharpe Ratio	0.15	0.32	0.35	0.26	0.25
Alpha	-2.00	1.24	2.08	0.00	-0.18
Beta	1.04	0.86	1.07	1.00	0.97
R-Squared	92.05	90.06	93.68	100.00	97.43

**Portfolio Statistics**

Average Market Cap	\$ 69,021.01	\$ 54,439.06	\$ 53,806.43	\$ 47,237.26	\$ 54,206.63
Total Holdings	80	125	55	1,278	881
% Asset in Top 10 Holdings	35.53%	30.62%	44.02%	26.14%	29.31%
Turnover Ratio %	29.00%	126.00%	33.00%	—	51.45%

**Asset Allocation**

	JPMorgan Emerging Markets Equity R6	Driehaus Emerging Markets Growth Instl	Fidelity Advisor Focused Em Mkts Z	MSCI EM NR USD	US Fund Diversified Emerging Mkts
Portfolio Date	9/30/2024	9/30/2024	9/30/2024	10/31/2024	10/31/2024
Cash %	0.77%	3.15%	2.46%	0.00%	2.45%
US Equity %	2.05%	3.53%	0.00%	0.25%	1.67%
Non-US Equity %	97.18%	93.10%	98.13%	99.75%	96.82%

**Sector Weightings**

Communication Services %	9.34%	10.73%	10.99%	—	8.41%
Consumer Discretionary %	15.78%	10.53%	15.49%	—	14.05%
Consumer Staples %	10.17%	4.34%	4.89%	—	6.17%
Energy %	1.57%	5.05%	3.84%	—	4.35%
Financials %	23.22%	23.54%	20.93%	—	21.62%
Healthcare %	1.37%	4.00%	6.81%	—	3.31%
Industrials %	10.72%	6.93%	9.44%	—	7.72%
Information Technology %	25.02%	20.19%	17.34%	—	22.67%
Materials %	2.03%	3.42%	8.40%	—	5.01%
Real Estate %	0.00%	4.38%	0.00%	—	1.69%
Utilities %	0.00%	3.52%	0.00%	—	1.96%

**Regional Exposure**

United States %	2.05%	3.53%	0.00%	0.25%	1.65%
Canada %	0.00%	0.69%	1.81%	0.00%	0.18%
Latin America %	15.69%	14.02%	9.91%	7.33%	10.58%
United Kingdom %	0.00%	0.86%	1.59%	0.00%	0.57%
Europe Developed %	3.48%	2.20%	2.18%	0.49%	1.57%
Europe Emerging %	3.68%	2.87%	3.65%	1.84%	1.98%
Asia Developed %	28.54%	23.24%	26.14%	29.52%	27.65%
Asia Emerging %	42.75%	41.91%	45.88%	50.84%	47.07%
Japan %	0.00%	0.00%	0.00%	0.00%	0.04%

**Portfolio Statistics**

Mega Cap %	67.35%	55.28%	55.38%	56.72%	62.13%
Large Cap %	20.69%	30.18%	25.32%	33.59%	20.51%
Mid Cap %	7.27%	8.24%	14.57%	7.94%	10.98%
Small Cap %	1.60%	1.67%	0.00%	0.13%	1.36%
Micro Cap %	0.00%	0.00%	0.00%	0.00%	0.09%

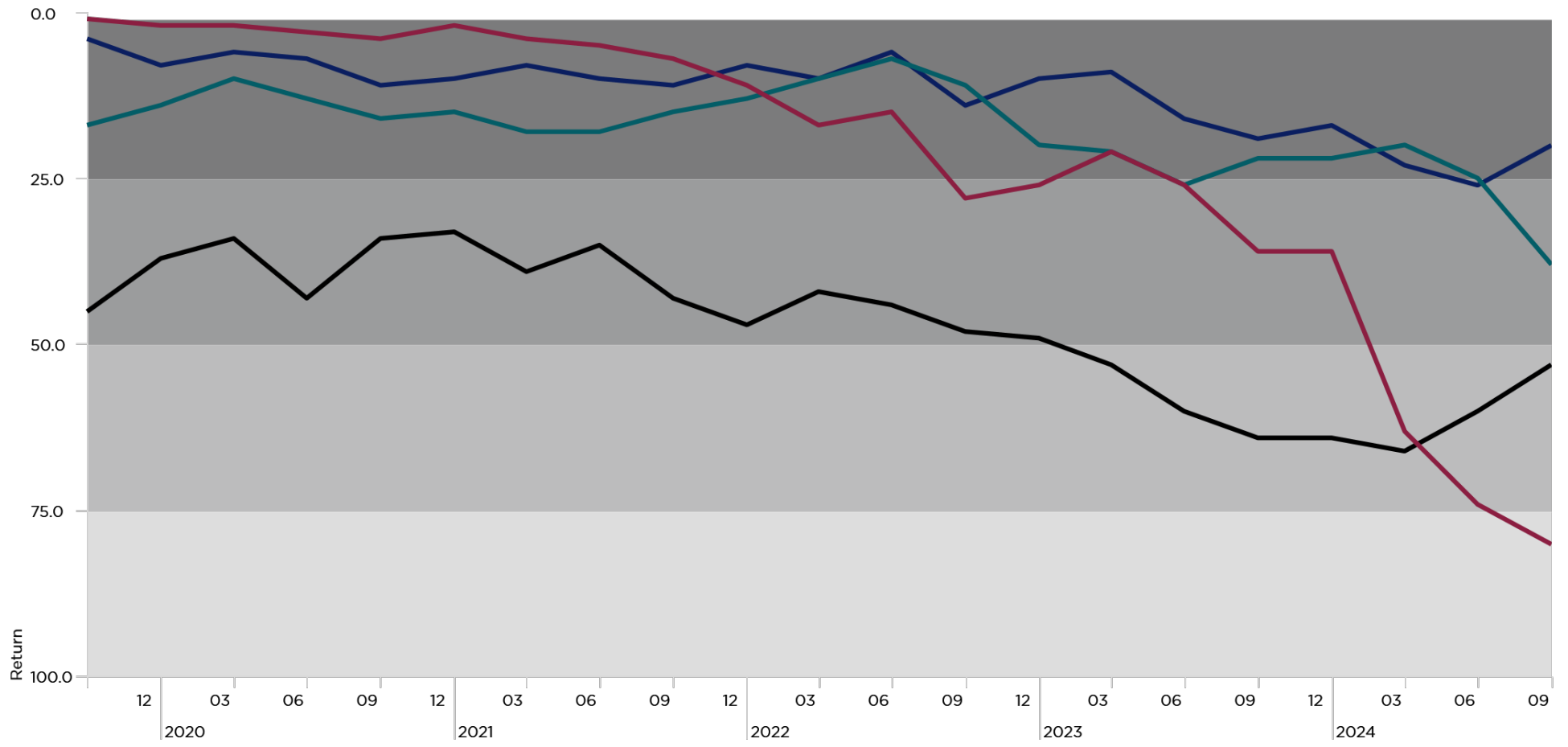


**Five Year Rolling Percentile Rank**

Time Period: 10/1/2014 to 9/30/2024

Peer Group (5-95%): Funds - U.S. - Diversified Emerging Mkts

■ 1st to 25th Percentile ■ 26th to Median ■ 51st to 75th Percentile ■ 76th to 100th Percentile



— JPMorgan Emerging Markets Equity R6

— Driehaus Emerging Markets Growth Instl

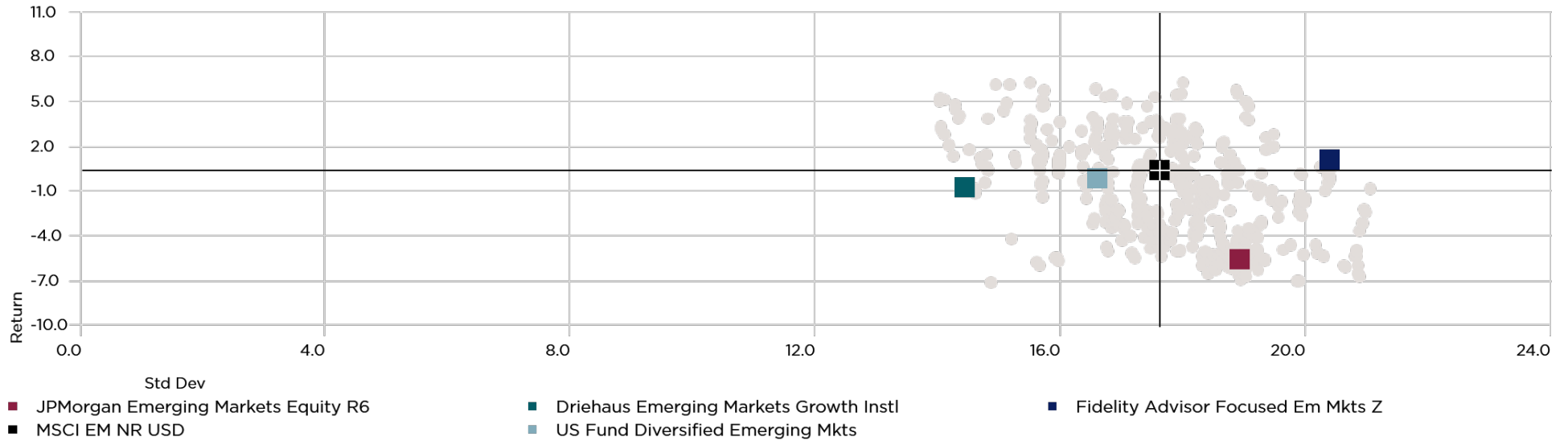
— Fidelity Advisor Focused Em Mkts Z

— MSCI EM NR USD



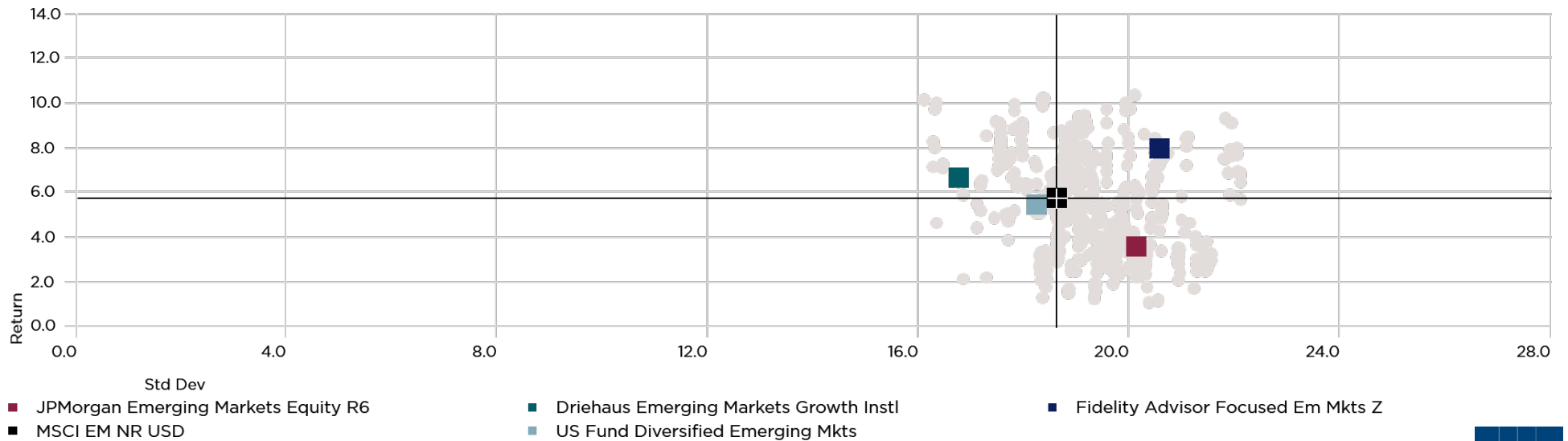
**Risk-Return (3 Yr)**

Peer Group (5-95%): Funds - U.S. - Diversified Emerging Mkts



**Risk-Return (5 Yr)**

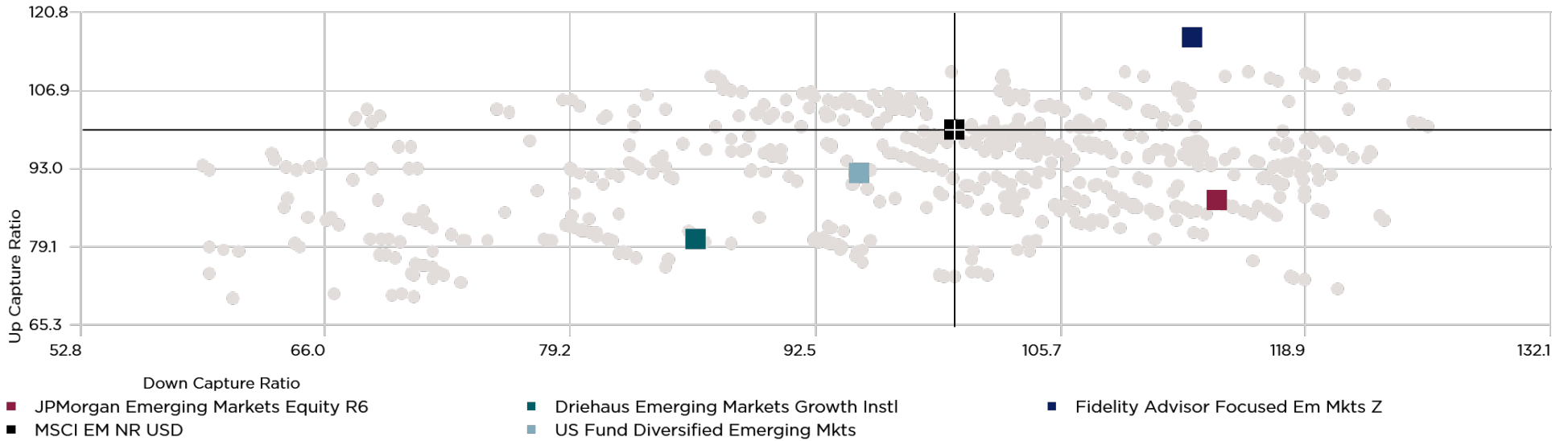
Peer Group (5-95%): Funds - U.S. - Diversified Emerging Mkts





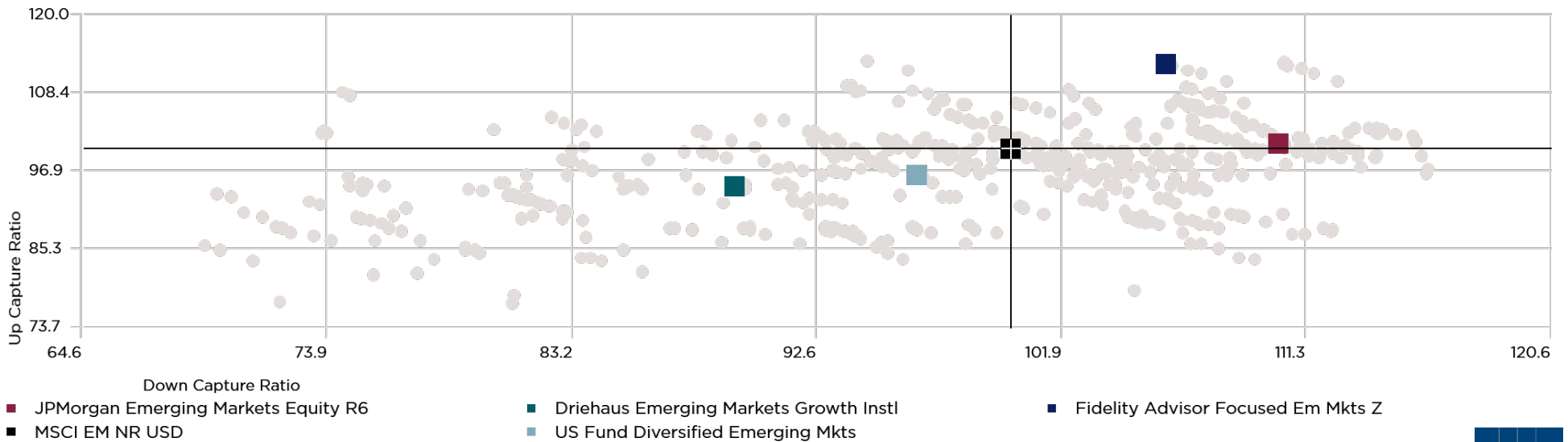
**Up-Down Market Capture (3 Yr)**

Peer Group (5-95%): Funds - U.S. - Diversified Emerging Mkts



**Up-Down Market Capture (5 Yr)**

Peer Group (5-95%): Funds - U.S. - Diversified Emerging Mkts



## Disclaimer:

Fund performance depicts historical performance and is not meant to predict future results. Peer group averages are derived from Morningstar and are provided for comparison purposes only. The information and statistics in this report are from sources believed to be reliable but are not warranted by CAPTRUST Financial Advisors to be accurate or complete. The opinions expressed in this report are subject to change without notice. This material has been prepared or is distributed solely for informational purposes and is not a solicitation or an offer to buy any security or instrument or to participate in any trading strategy.

## Glossary:

### ALPHA

A manager's rate of return in excess of that which can be explained by its systematic risk, or Beta. It is a result of the analysis regressing a manager's returns against those of a benchmark index. A positive alpha implies that a manager has added value relative to its benchmark on a risk-adjusted basis.

### BETA

A manager's sensitivity to systematic, or market risk. Beta is a result of the analysis regressing a manager's return against those of a benchmark index. A manager with a Beta of 1 should move perfectly with the benchmark. A Beta of that 1 implies that a manager's returns are less volatile than the market's. A Beta of greater than 1 similarly implies that a manager exhibits greater volatility than the market.

### CAPTURE RATIO

A measure of a manager's performance relative to its benchmark under different market conditions. It is the ratio of the average manager return to the average benchmark return. Up market capture refers to relative performance in periods where the benchmark return is greater than 0. Down market capture is calculated over those periods where the benchmark return is less than 0.

### INFORMATION RATIO

An efficiency measure which estimates a manager's excess return over a benchmark, divided by the volatility of the excess return, or Tracking Error.

### PERCENTILE RANK

Percentile Rank is based on an individual fund's performance relative to all other available funds in its universe. Percentiles range from 1, being the best, to 100 being the worst. Ideally managers prefer to be in the 50<sup>th</sup> percentile or above which demonstrates that they have done better on a relative basis than at least 50% of their peers.

### R-SQUARED

The portion of a manager's movements that are explained by movements in a benchmark index. R-squared values range from 0 to 100. An R-squared of 100 means that all movements of a manager are completely explained by movements in the index. Also identified as the coefficient of determination from a regression equation, a high R-squared values supports the validity of the Alpha and Beta measures.

### SHARPE RATIO

A measure of a manager's return per unit of risk. It is the ratio of a manager's excess return above the risk free rate over the standard deviation. A higher Sharpe Ratio implies greater manager efficiency.

### STANDARD DEVIATION

A measure of the extent to which observations in a series vary from the arithmetic mean of the series. This measure of volatility or risk allows the estimation of a range of values for a manager's returns. The wider the range, the more uncertainty, and therefore the riskier a manager is assumed to be.