South Carolina Retirement System (SCRS)

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 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

EXECUTIVE SUMMARY

Executive Summary

(Dollar amounts expressed in thousands)

	Valuation Date:	
	July 1, 2024	July 1, 2023
Membership		
• Number of		
- Active Members	210,887	205,985
- Retirees and Beneficiaries	156,141	153,558
- Inactive Members	237,262	227,527
- 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
Required Contribution Rates		
• Employer contribution rate[1]	18.56%	18.56%
• Member	9.00%	9.00%
Assets		
• 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%
Actuarial Information		
• 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)[2]	14	16
Reconciliation of UAAL		
• 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	0	0
• End of Year UAAL	$25,123,152	$24,910,179

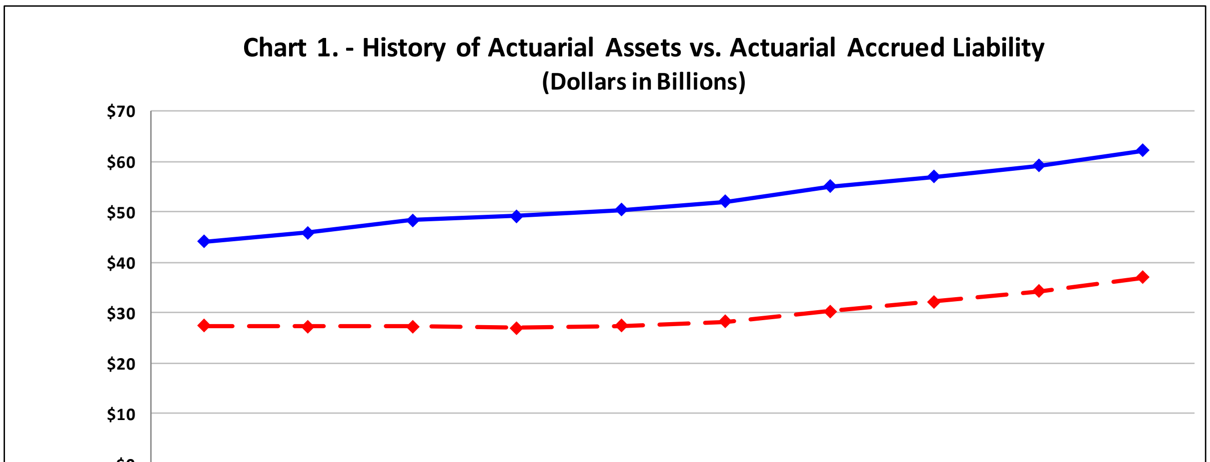
[1] The employer contribution rates in effect for FY 2025 and FY 2026 is 18.56% of pay.
The scheduled contribution rates were enacted by the Retirement System Funding and Administration Act of 2017 and last amended by Act 135 and a subsequent proviso. These contribution rates include the cost of incidental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

[2] 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.



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AAL	44.1	45.9	48.4	49.1	50.4	52.1	55.0	56.9	59.2	62.1
AVA	27.4	27.3	27.2	27.0	27.4	28.2	30.3	32.3	34.3	37.0

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

DISCUSSION

Discussion

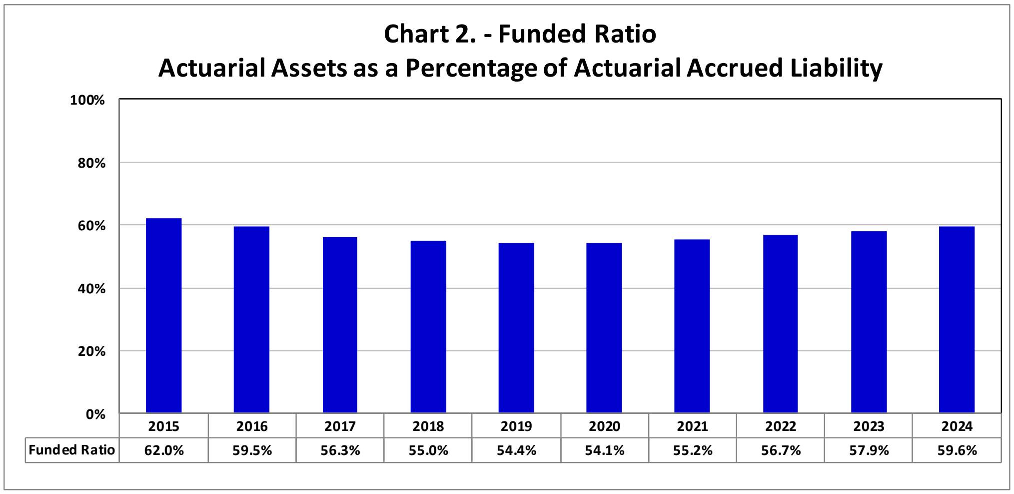
The results of the July 1, 2024 actuarial valuation of the South Carolina Retirement System are presented in this report. The primary purposes of the valuation report are to depict the current financial condition of the System and analyze changes in the System's financial condition. In addition, the 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.

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.

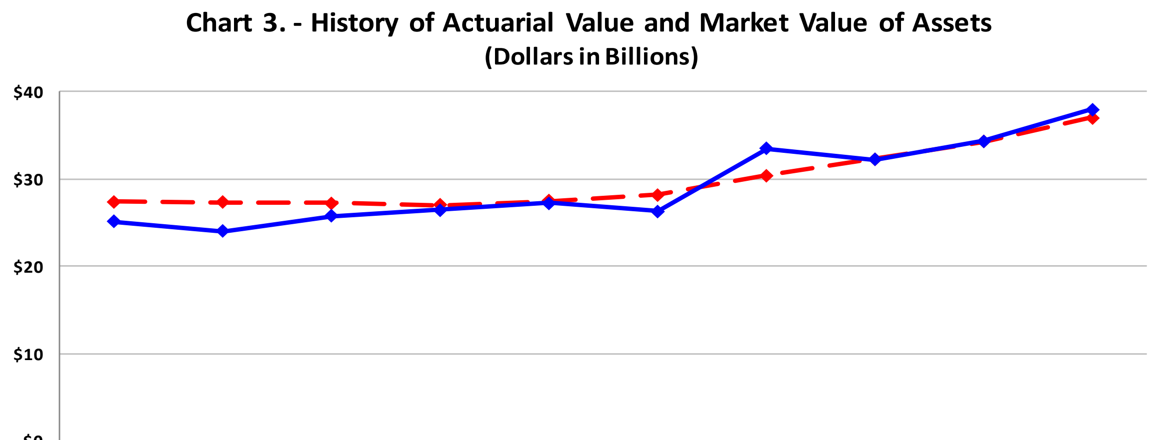


Absent future unfavorable investment or demographic experience, or legislative changes, we expect the funded ratio to gradually improve each year in the future. Also, we expect the dollar amount of the unfunded actuarial accrued liability, or the difference between the actuarial accrued liability and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



	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AVA	27.4	27.3	27.2	27.0	27.4	28.2	30.3	32.3	34.3	37.0
MVA	25.1	24.0	25.7	26.4	27.2	26.3	33.5	32.2	34.3	37.9

Assets as of July 1,

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

Actuarial Gains/ (Losses) and the Funding Period

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

The unfunded actuarial accrued liability (UAAL) has increased 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.

Reconciliation of UAAL
(Dollars in thousands)

• 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	$25,123,152

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.

Change in Funding Period (Years)	
• 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[1]	(0.7)
- Legislative changes	0.0
- Total Change	(1.5)
• 2024 Valuation and FY 2026 Contribution Rates	13.8

[1] 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

ACTUARIAL TABLES

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[1]	$ 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	-9.00%	-9.00%
	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	(9,424,574)	(9,113,395)
	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)	24,211,243	22,273,114
	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	16.64%	16.67%
	c. Total employer contribution rate	18.56%	18.56%
9.	Funding period based on the required employer contribution rate (years)[2]	14	16
10.	Applicable statutorily required contribution rates[3]		
	a. Employer contribution rate	18.56%	18.56%
	b. Member contribution rate	9.00%	9.00%

[1] The projected payroll does not include payroll for members in ORP or working retirees.

[2] 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).

[3] 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 (1)	July 1, 2023 (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	July 1, 2023
		(1)	(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	0.31%	0.43%
	e. Total	10.74%	10.71%
2.	Administrative expenses	0.18%	0.18%
3.	Less: member contribution rate	9.00%	9.00%
4.	Net employer normal cost rate	1.92%	1.89%

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	$	36,099,755
	b. Present active and inactive members		35,463,916
	c. Total actuarial present value	$	71,563,671
2.	Present Value of Future Normal Contributions		
	a. Member	$	8,142,715
	b. Employer		1,281,859
	c. Total future normal contributions	$	9,424,574
3.	Actuarial Liability	$	62,139,097
4.	Current Actuarial Value of Assets	$	37,015,945
5.	Unfunded Actuarial Liability	$	25,123,152
6.	UAAL Amortization Rates Based on an Employer Contribution Rate of 18.56%		
	a. Active members		16.64%
	b. ORP members		13.56%
	c. Re-employed retirees (including employee contributions)		27.56%
7.	Unfunded Actuarial Liability Liquidation Period		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 (1)	July 1, 2023 (2)
1.	**Assets**		
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
2.	**Liabilities**		
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	July 1, 2024	July 1, 2023
(1)	(2)	(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	$ 34,181,001	$ 32,376,458
4. Securities lending cash collateral invested	$ 258,217	$ 1,443
5. Prepaid administrative expenses	411	492
6. Capital assets, net of accumulated depreciation	1,541	1,613
7. Total assets	$ 38,421,393	$ 35,191,331
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	$ 501,901	$ 904,369
9. Total market value of assets available for benefits (Item 7 - Item 8.h.)	$ 37,919,492	$ 34,286,962
10. Asset allocation (investments)[1]		
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	100.0%	100.0%

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

Reconciliation of System Net Assets

(Dollar amounts expressed in thousands)

	Year Ending July 1, 2024 (1)	Year Ending 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:	

	Fiscal Year Ending June 30, (1)	Excess/(Deficit) Return (2)	Percent Deferred (3)	Deferred Amount (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)	Year Ending 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)	3,588,045	2,317,284
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)	2,717,590	2,246,806
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 Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll[1]	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
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%

[1] 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[1]
Asset valuation method:	5-Year Smoothed
Actuarial assumptions:	
Investment rate of return[2]	7.00%
Projected salary increases	3.00% to 11.25% (varies by service)
Inflation	2.25%
Post-retirement benefit adjustments[3]	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.

[1] 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%.

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

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

Solvency Test
(Dollar amounts expressed in thousands)

	Actuarial Accrued Liability				Portion of Aggregate Accrued Liabilities Covered by Assets		
July 1,	Active Member Contributions	Retirants & Beneficiaries	Active & Inactive Members (Employer Financed)	Valuation Assets	Active	Retirants	ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
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

MEMBERSHIP INFORMATION

Membership Information

Page

Summary of Membership Data

		July 1, 2024	July 1, 2023
		(1)	(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	June 30, 2023
	(1)	(2)
1. Active Members		
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
2. Rehired Retired Participants		
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
3. ORP Participants		
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
4. All Groups Combined		
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,	Number of Employers[2]	Active Members: Number	Active Members: Percent Increase /(Decrease)	Covered Payroll[1]: Amount in Thousands	Covered Payroll[1]: Percent Increase /(Decrease)	Average Annual Pay: Amount	Average Annual Pay: Percent Increase /(Decrease)	Average Age	Average Service
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
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

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

[2] 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

	Years of Credited Service												
Attained Age	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 20	878	145	22	1	0	0	0	0	0	0	0	0	1,046
	$15,784	$14,142	$13,532	$16,472	$0	$0	$0	$0	$0	$0	$0	$0	$15,510
20-24	4,076	2,961	1,314	372	136	52	0	0	0	0	0	0	8,911
	$28,301	$35,927	$40,273	$39,030	$41,233	$34,134	$0	$0	$0	$0	$0	$0	$33,280
25-29	3,698	3,884	3,291	2,512	1,823	2,860	27	0	0	0	0	0	18,095
	$35,592	$41,547	$45,260	$47,617	$49,340	$51,508	$41,497	$0	$0	$0	$0	$0	$44,207
30-34	2,890	2,923	2,209	1,546	1,513	7,752	1,832	25	0	0	0	0	20,690
	$35,949	$41,531	$45,809	$49,029	$50,878	$54,656	$59,700	$46,226	$0	$0	$0	$0	$48,984
35-39	2,674	2,514	2,052	1,331	1,227	6,349	5,620	1,755	34	0	0	0	23,556
	$35,904	$41,333	$45,526	$50,061	$53,341	$57,575	$64,628	$67,755	$58,612	$0	$0	$0	$54,129
40-44	2,392	2,258	1,946	1,330	1,185	5,677	4,157	5,715	1,600	41	0	0	26,301
	$36,866	$42,773	$46,825	$48,353	$51,721	$58,180	$66,540	$71,159	$73,027	$65,937	$0	$0	$58,348
45-49	1,898	1,974	1,576	1,082	1,036	5,144	3,540	3,928	4,593	1,780	9	0	26,560
	$37,306	$43,448	$47,438	$48,118	$53,027	$56,804	$65,672	$71,469	$77,835	$79,814	$86,826	$0	$61,901
50-54	1,843	1,904	1,569	1,085	987	4,958	3,586	3,766	3,713	4,655	623	14	28,703
	$39,408	$43,853	$47,600	$51,398	$51,599	$56,698	$62,005	$69,393	$73,503	$81,442	$85,274	$73,916	$63,007
55-59	1,603	1,604	1,364	960	854	4,361	3,150	3,390	3,048	3,021	1,473	359	25,187
	$38,213	$41,700	$46,563	$48,013	$48,576	$53,779	$60,122	$62,211	$67,573	$74,184	$83,241	$80,389	$59,379
60-64	1,036	1,099	989	682	722	3,633	2,528	2,803	2,488	2,099	914	713	19,706
	$32,272	$40,262	$43,523	$43,598	$45,743	$52,449	$58,383	$59,563	$63,253	$68,882	$76,360	$83,937	$56,844
65 & Over	964	1,028	821	515	536	2,559	1,652	1,309	992	838	434	484	12,132
	$23,520	$28,259	$28,272	$32,692	$34,419	$42,468	$49,882	$58,458	$60,677	$64,943	$74,857	$84,123	$46,624
Total	23,952	22,294	17,153	11,416	10,019	43,345	26,092	22,691	16,468	12,434	3,453	1,570	210,887
	$33,806	$40,420	$44,722	$47,423	$49,715	$54,808	$62,261	$67,127	$71,215	$76,162	$80,742	$83,094	$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	Number		Annual Benefits Amount		Average Monthly Benefit
(1)	(2)		(3)		(4)
Service:					
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	3,328		88,695,365		2,221
Subtotal:	133,217	$	3,149,300,472		1,970
Disability:					
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	74		1,057,489		1,191
Subtotal:	10,486	$	158,493,443		1,260
Beneficiaries:	12,438	$	169,547,498	$	1,136
Total:	156,141	$	3,477,341,413	$	1,856

Distribution of Annuitants by Monthly Benefit

Monthly Benefit Amount (1)	Number of Annuitants (2)	Female (3)	Male (4)	Average Service (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 Number	Added to Rolls Annual Benefits	Removed from Rolls Number	Removed from Rolls Annual Benefits	Rolls End of the Year Number	Rolls End of the Year Annual Benefits	% Increase in Annual Benefit	Average Annual Benefit
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
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

ASSESSMENT AND DISCLOSURE OF RISK

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.

	July 1,				
Measure	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

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		
	Reduced	Normal*	Reduced	Normal*	Rule of
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 differentation 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

BENEFIT PROVISIONS

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

GLOSSARY

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.

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

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

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

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

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

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

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

GASB: Governmental Accounting Standards Board.

GASB 67 and ***GASB 68***: Governmental Accounting Standards Board 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.