

***South Carolina Retirement System  
(SCRS)  
Actuarial Valuation  
as of July 1, 2006***



A MILLIMAN GLOBAL FIRM

**Milliman**

*Consultants and Actuaries*

**April 2007**

# TABLE OF CONTENTS

---

Section	Page
Letter of Transmittal	(i)
I. Board Summary.....	I-1
II. Assets .....	II-1
III. Valuation Results .....	III-1
IV. Accounting Statement Information .....	IV-1
V. Membership Information .....	V-1

## APPENDICES

A. Actuarial Assumptions and Methods.....	A-1
B. Summary of Plan Provisions.....	B-1



**Milliman**

Consultants and Actuaries

1921 Gallows Road, Suite 900  
Vienna, VA 22182-3995  
Tel +1 703 917.0143  
Fax +1 703 827.9266  
www.milliman.com

April 6, 2007

State Budget and Control Board  
South Carolina Retirement System  
P.O. Box 11960  
Columbia, SC 29211-1960

Dear Members of the Board:

We are pleased to present the actuarial valuation report for the South Carolina Retirement System (SCRS) as of July 1, 2006. The results of this report are applicable to Fiscal Year 2008.

### **Applicable Laws**

The laws governing the operation of the South Carolina Retirement System provide that actuarial valuations of the assets and liabilities of the System shall be made annually. We have conducted our annual actuarial valuation of the South Carolina Retirement System as of July 1, 2006 and the results of the valuation are contained in the following report.

### **Funding Objective**

A funding objective of the System is that contribution rates as a percentage of payroll will remain relatively level over time. As these contribution rates are set by the Board, the valuation is used to determine the sufficiency of the contributions to maintain or improve the measures of the System's funding progress (i.e. *funded ratio, funding period*) and provide for the complete funding of all actuarial liabilities within 30 years.

### **Funding Methodology**

The entry age normal actuarial cost method is used to determine the System's normal cost, the cost of the current year's benefit accrual. The normal cost is developed as a level percentage of the active member payroll. Additionally, the method determines the actuarial liability, the value of benefits already earned by active and retired members due to past service. A smoothing technique is utilized to produce a market-related actuarial value of assets with the goal of dampening the impact of investment return volatility. The *funded ratio* is the actuarial value of assets as a percentage of the actuarial liability.

An unfunded actuarial liability exists to the extent the System's actuarial liability exceeds its actuarial value of assets. The contribution amount in excess of the



System's normal cost is the level percentage of payroll available to amortize an unfunded actuarial liability. The System's *funding period* or *amortization period* is the resulting number of years necessary to fully amortize an unfunded actuarial liability with the available contributions. The calculated amortization period assumes future growth in payroll and is rounded to the nearest year.

### **Assumptions**

Actuarial assumptions are necessary to estimate the future economic and demographic experience of the System. Due to behavior changes due to the adoption of Act 153 (Senate Bill 618), the rates of TERI election and retirement at first eligibility were analyzed and we recommend new assumptions that better reflect the expected behavior under Act 153. The other actuarial assumptions were recommended by the prior actuary and adopted by the State Budget and Control Board based on a review of the System's experience completed during Fiscal Year 2004. We have reviewed these assumptions and believe they remain reasonable and are in accordance with the applicable Actuarial Standards of Practice. These assumptions, including the new recommendations, are shown in Appendix A.

The results and conclusions of this report should not be interpreted as applying in future years beyond FY 2008. Differences between our projections and actual amounts depend on the extent to which future experience conforms exactly to the assumptions used in this analysis.

### **Data Reliance**

In preparing the valuation, we, as the actuary, relied on data provided by the System. In fulfillment of the scope of our assignment, we performed a limited review of the data for consistency and reasonableness and did not find material defects in the census data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

### **Third Party Recipients**

Milliman's work product was prepared exclusively for the South Carolina Retirement Systems for a specific and limited purpose. It is a complex technical analysis that assumes a high level of knowledge concerning the Systems' operations, and uses Systems' data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs. Any distribution of this report must be provided in its entirety including this cover letter, unless prior written consent is obtained from Milliman.



### **Certification**

Based on the results of the July 1, 2006 valuation, we believe that the valuation appropriately reflects the System's long term obligations and the current schedule of contributions are sufficient to fund the liabilities of the System over a reasonable time frame, and based on these criteria, the System may be deemed actuarially sound.

I, Hassan Ghazi, am an associate actuary and I, Robert S. Dezube, am a consulting actuary for Milliman. We are also members of the American Academy of Actuaries and meet their Qualification Standards to render the actuarial opinion contained herein.

We hereby certify that, to the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the applicable Guides to Professional Conduct, Amplifying Opinions, and Supporting Recommendations and Interpretations of the American Academy of Actuaries.

Respectfully submitted,

Milliman, Inc.

Hassan Ghazi, ASA  
Associate Actuary

Robert S. Dezube, FSA  
Principal and Consulting Actuary

# Section I

## Board Summary



***SOUTH CAROLINA RETIREMENT SYSTEM***

Actuarial Valuation as of July 1, 2006

This report was prepared solely for the South Carolina Retirement Systems for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

# BOARD SUMMARY

---

This report presents the results of the July 1, 2006 actuarial valuation of the South Carolina Retirement System (SCRS). The primary purposes of performing the annual actuarial valuation are to:

- 1) Determine whether the **contributions** to be paid by the State in Fiscal Year 2008 **are adequate** to amortize the unfunded actuarial liability over no more than 30 years;
- 2) **Measure and disclose**, as of the valuation date, the financial condition of the plan;
- 3) **Indicate trends** in the financial progress of the plan;
- 4) **Provide specific information** and documentation required by the Government Accounting Standards Board (GASB).

In this section of the report, we present a summary of the above information in the form of:

- The actuary's comments;
- The prior year's experience of the plan's assets, liabilities, and membership;
- A series of graphs which highlight key trends experienced by the plan; and
- A summary of all the principal results from this year's valuation, compared to the prior year's, in a single table, intended for quick reference purposes.

## Actuary's Comments

The current employer contribution rate for the System is 8.20%, including a 0.15% contribution for the Group Life Fund. The 8.05% net employer contribution is used to pay the employer's portion of the normal cost and to amortize the unfunded actuarial liability. Legislation effective July 1, 2005, increased the net employer contribution rate to 8.55% of payroll in fiscal year 2008 and thereafter. Additional funding for both the July 1, 2006 ad hoc COLA, and the effect of the adverse ruling in the Layman case further increased the July 1, 2007 net employer contribution rate by 0.51% of payroll to a total of 9.06% of payroll. We have taken into account these increases in determining the expected future amortization amounts and the resulting amortization period.

The actuarially determined employer normal cost contribution rate decreased from 4.23% for FY 2007 to 4.14% for FY 2008 primarily due to a recommended change to assumptions discussed later. As a result of this and the scheduled increases in contributions, the net contribution towards the unfunded actuarial liability increased from

## BOARD SUMMARY

---

3.32% to 3.91%. The unfunded actuarial liability increased from \$8.6 billion to \$9.7 billion. The resulting amortization period remained at 30 years. We note the following:

- The plan experienced an actuarial loss on plan assets of \$190 million as a result of investment return on the actuarial value of assets being less than the assumed rate. The loss increased the amortization period by 1.0 years.
- The plan experienced a net actuarial loss of \$373 million on plan liabilities due to non-investment related experience. The most significant source of this loss resulted from higher than expected increases in participant salaries which accounts for \$145 million of the loss. The remaining loss is primarily due to experience related to turnover and mortality. The net loss represents 1.2% of the actuarial liability and increased the amortization period by 1.9 years. This type of activity is normal in the course of plan experience. The plan will experience actuarial gains and losses over time because future experience will not exactly match the assumptions.
- The number of TERI participants dropped over 30% during the year. This is due to both a greater than expected flow of participants out of TERI and a significant reduction in the rate of TERI election by eligible members. Further analysis has led us to recommend a reduction to both the rate that TERI is elected and the rate that members are expected to retire in the year of first eligibility. As part of our analysis, we considered six and one-half years of data (5 years prior to 7/1/2005 and 1.5 years after 7/1/2005). Because of the limited amount of data post -7/1/2005, we have only partially recognized what we feel is a new trend in TERI/retirement behavior due to the impact of legislation effective 7/1/2005. We also feel the trend is too significant to completely ignore before the next experience study. The effect of the recommended change to assumptions decreases the funding period by 1.5 years and to decrease the normal cost rate by 0.08% of payroll.
- Other factors, such as actual contributions exceeding the expected amount and the one-year decrease in the amortization period due to the prior year amortization payment, decreased the amortization period by 1.4 years.

As part of this valuation, we tested the adequacy of the 0.15% contribution rate to fund the Group Life Insurance benefits. There is a separate fund for these benefits with assets at market value of \$119 million as of July 1, 2006. The 0.15% contribution rate is reasonable and, together with assets on hand, remains adequate to fund the expected benefit payments for FY 2008.

The balance of this section presents summarized information regarding plan trends, details on the 2005/2006 experience, and tables presenting a summary of the principal results.



## Prior Year Experience

### ASSETS

The Plan has two measures of plan assets: (i) the market value and (ii) the actuarial value. The market value is a snapshot of the asset value as of July 1, 2006. The actuarial value is a smoothed asset value that recognizes 20% of the difference between the expected investment return and actual investment return each year for five years. The expected investment return equals the prior year's actuarial value of assets adjusted with contributions, and payments using investment earnings of 7.25%. This method is intended to dampen the effect that fluctuations in market value have on funding requirements.

For the plan year ending July 1, 2006, the plan earned 5.2%<sup>1</sup> on a market value basis and 6.4% on an actuarial value basis. These returns resulted in an actuarial loss to the fund of \$435 million on a market value basis and actuarial loss to the fund of \$190 million loss on an actuarial value basis. The actuarial value of assets as of July 1, 2006 exceeds the market value by \$161 million. This results from the asset smoothing technique deferring more investment losses than investment gain.

The specific changes between the prior year's amounts and this year's are presented below.

Item (In Thousands)	Market Value	Actuarial Value
July 1, 2005 value	\$ 21,704,133	\$ 21,625,510
Employer Contributions	567,722	567,722
Member Contributions	498,445	498,445
Transfer of Assets	(3,220)	(3,220)
Benefit Payments	(1,747,807)	(1,747,807)
Expected Investment Earnings (7.25%)	1,548,724	1,543,023
Expected Value July 1, 2006	22,567,997	22,483,673
July 1, 2006 Actual Value	22,132,638	22,293,446
Investment <span style="color: green;">Gain</span> <span style="color: red;">(Loss)</span>	(435,359)	(190,227)

<sup>1</sup> May differ from the CAFR report rate of return because assumes cash flow occurs mid-year.

# BOARD SUMMARY

## LIABILITIES

Two different measures of liabilities are calculated for this plan: a total value of future benefits and an actuarial liability. Section III of this report describes the development of each. The actuarial liability is used to determine the adequacy of the State's contribution rate and the Government Accounting Standards Board (GASB) disclosures. Plan experience is measured by changes in the actuarial liability. For the plan year ending in 2006, the actuarial liability increased due to an ad hoc COLA and net actuarial losses from experience. Net actuarial losses were primarily due to salary increase and mortality experience. This increase was partially offset by a decrease in the actuarial liability due to the recommended change in assumptions.

Liabilities (In Millions)	Total Value of Future Benefits	Actuarial Liability
July 1, 2005	\$ 35,304	\$ 30,217
July 1, 2006	\$ 37,374	\$ 32,019

## UNFUNDED LIABILITIES AND FUNDED RATIOS

The difference between the actuarial liability and the actuarial value of assets is the unfunded actuarial liability. Here we show the July 1, 2005 and July 1, 2006 unfunded actuarial liability/(surplus) amounts, as well as the corresponding funded ratios (actuarial assets divided by liabilities). Approximately half of the 2.0% decrease in the Funded Ratio is due to the ad hoc COLA.

In Millions	Unfunded Actuarial Liability	Funded Ratio
July 1, 2005 net unfunded / (surplus)	\$ 8,592	71.6%
July 1, 2006 net unfunded / (surplus)	\$ 9,725	69.6%

# BOARD SUMMARY

## MEMBERSHIP

There are four types of plan members: (i) current active members; (ii) inactive members who retain a right to either a refund of contributions or a deferred vested benefit; (iii) TERI participants; and (iv) retired members and beneficiaries in pay status. In Section V we present details on membership statistics. Below, we compare totals in each group between July 1, 2005 and 2006.

There was an overall increase in membership during the year.

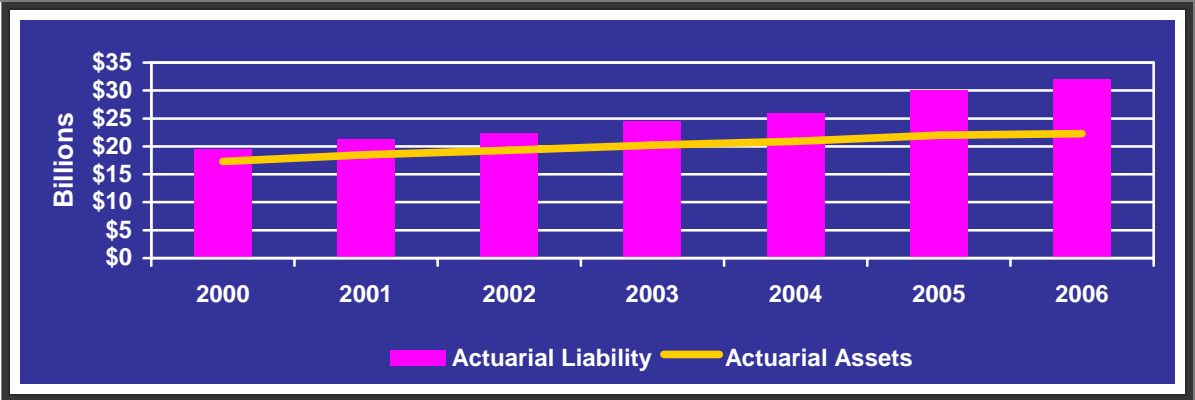
	7/1/2006	7/1/2005	Change
Active Members	184,282	181,022	1.8%
Inactive Members	151,510	148,888	1.8%
TERI Participants	9,704	14,416	(32.7)%
Retired Members and Beneficiaries	87,501	80,251	9.0%
Total Members	432,997	424,577	2.0%

## Trends

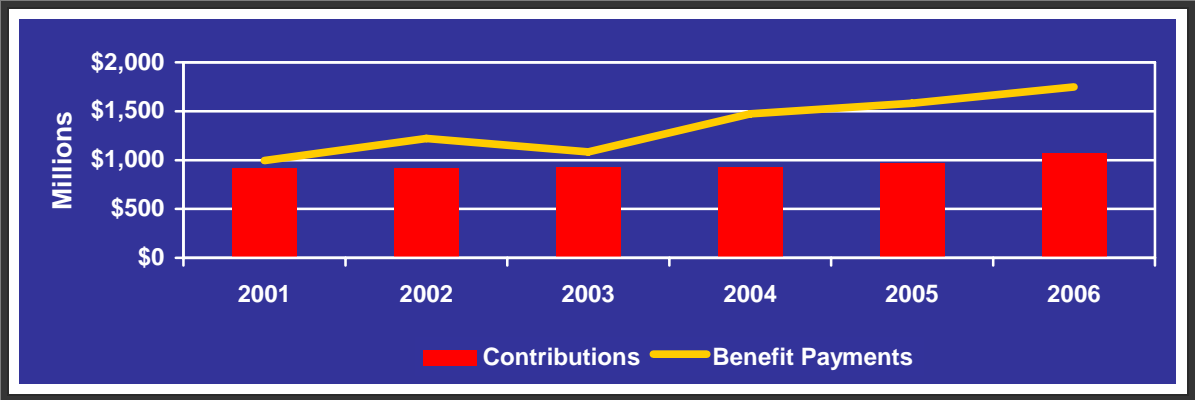
To truly understand the financial condition of the pension plan, a review of the prior year's funded status is helpful in seeing the big picture and general trend evolving. Below, we present three charts that present trend information from 2000 through 2006.

The first graph shows an increase in both actuarial liability and actuarial assets. As can be seen, the gap between actuarial liability and actuarial assets increases in each of these years resulting in the increases in the unfunded actuarial liability. The second graph shows that contributions are fairly level, while the benefit payments have a slight upward trend over the six years. As of the current valuation, the negative cash flow represents about 3% of the market value of assets. This degree of negative cash flow is common to mature retirement systems and we would expect the negative cash flow as a percent of market value of assets to slightly increase over time. The third graph shows that trend in the amortization period for unfunded actuarial liability has increased from 16 to 30 years over the seven-year period consistent with the information shown in the first graph.

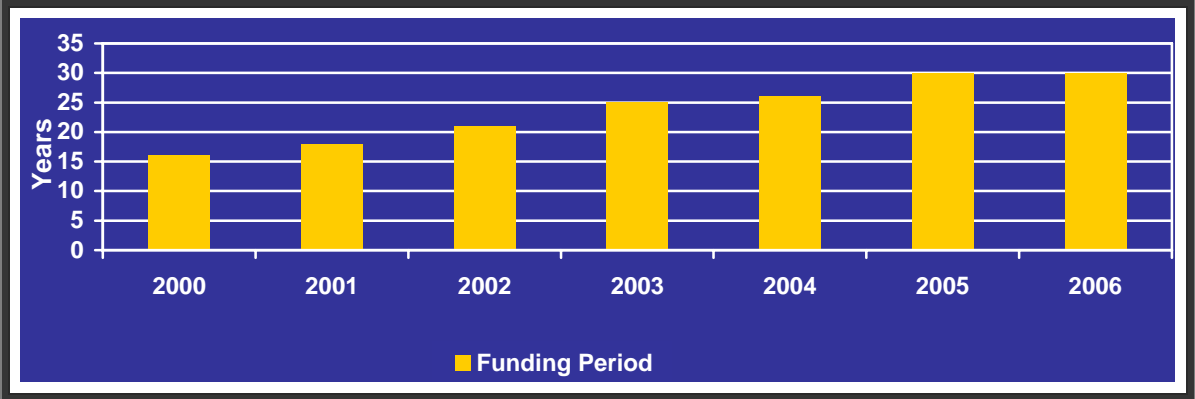
**Assets and Liabilities**



**Cash Flows**



**Unfunded Actuarial Liability Amortization period**



# BOARD SUMMARY

<b>PRINCIPAL RESULTS</b>		
	<b>July 1, 2006</b>	<b>July 1, 2005</b>
<b>Membership</b>		
Number of:		
Active Members	184,282	181,022
TERI Members	9,704	14,416
Retirees and Beneficiaries	87,501	80,251
Inactive Members	<u>151,510</u>	<u>148,888</u>
Total	432,997	424,577
Payroll (excludes ORP & TERI members)	\$ 6.7 billion	\$ 6.4 billion
<b>Statutory Contribution Rate (Including Group Insurance)</b>		
Member	6.50%	6.25%
Employer		
Retirement Contribution <sup>1</sup>	8.05%	7.55%
Group Life Insurance Contribution	<u>0.15%</u>	<u>0.15%</u>
Total	8.20%	7.70%
<b>Assets</b>		
Market Value	\$ 22.1 billion	\$ 21.7 billion
Actuarial Value	\$ 22.3 billion	\$ 21.6 billion
Return on Market Value	5.2%	7.2%
Return on Actuarial Value	6.4%	6.7%
Ratio of Actuarial to Market Value	100.7%	99.6%
<b>Actuarial Information</b>		
Employer Normal Cost %	4.14%	4.23%
Unfunded Actuarial Liability (UAL)	\$ 9.7 billion	\$ 8.6 billion
Funded Ratio	69.6%	71.6%
Amortization Period	30 years	30 years
<b>Change in Unfunded Actuarial Liability (in millions)</b>		
Beginning of Year Unfunded Actuarial Liability	\$ 8,592	\$ 5,115
Interest on Unfunded Actuarial Liability	623	371
Amortization Payment	(333)	(306)
Asset Experience	190	107
Salary Experience	145	137
Other Liability Experience	227	40
COLA (ad hoc)	457	396
Benefit Changes	0	2,493
Assumption/Method Changes	(176)	239
Total Increase / (Decrease)	\$ 1,133	\$ 3,477
End of Year Unfunded Actuarial Liability	\$ 9,725	\$ 8,592

<sup>1</sup> Scheduled to increase to 9.06% on July 1, 2007.

# Section II

# Assets

Pension plan assets and the decisions the Board may make with respect to future deployment of those assets play a key role in the financial operation of the plan. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely affect benefit levels, negotiated contributions, and the ultimate security of participants' benefits.

In this section we present:

- Statement of the **changes** in market value during the year; and
- Development of the **Actuarial Value of Assets**.

## **Changes in Market Value:**

The components of asset change are:

- Contributions
- Benefit Payments
- Expenses
- Investment Income (realized and unrealized)

The first three components represent the net external cash flow during the year. The specific changes during 2006 and the three prior years are presented in Table II-1.

## **Actuarial Value of Assets:**

The Actuarial Value of Assets represents a "smoothed" value developed by the actuary to reduce, or eliminate, erratic results which could develop from short term ups and downs in the Market Value of Assets. For this plan, the Actuarial Value has been calculated by recognizing 20% of the difference between expected investment return and actual investment return each year for five years. Table II-2 shows the calculation of the Actuarial Value of Assets for the July 1, 2006 valuation.

**TABLE II-I**  
**CALCULATION OF EXCESS INVESTMENT INCOME**  
**FOR ACTUARIAL VALUE OF ASSETS**

**PLAN YEAR ENDING JUNE 30,**

Item	2006	2005	2004	2003
1. Market Value of Assets at Beginning of Year	\$ 21,704,133	\$ 20,850,129	\$ 19,665,571	\$18,439,431
2. Net External Cash Flow During the Year	(684,860)	(620,633)	(552,095)	(414,748)
3. Market Value of Assets at End of Year	22,132,638	21,704,133	20,850,129	19,665,571
4. Actual Investment Income During the Year Based on Market Value:	1,113,365	1,474,637	1,736,653	1,640,888
5. Assumed Earnings Rate	7.25%	7.25%	7.25%	7.25%
6. Expected Earnings for the Year				
a. Market Value of Assets, Beginning of Year: (5) x (1)	1,573,550	1,511,634	1,425,754	1,336,859
b. Net External Cash Flow: (5) x .5 x (2)	<u>(24,826)</u>	<u>(22,498)</u>	<u>(20,013)</u>	<u>(15,035)</u>
c. Total: (a) + (b)	1,548,724	1,489,136	1,405,741	1,321,824
7. Excess Investment Income for Year: (4) – (6)	\$ (435,359)	\$ (14,499)	\$ 330,912	\$ 319,064

All dollar amounts in thousands



**TABLE II-2**  
**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

Item	Valuation as of July 1, 2006
1. Excess (Shortfall) of Investment Income for Current Year and Previous Three Years	
a. Current Year	\$ (435,359)
b. Current Year - 1	(14,499)
c. Current Year - 2	330,912
d. Current Year - 3	319,064
2. Deferral of Excess (Shortfall) of Investment Income for:	
a. Current Year (80% Deferral)	\$ (348,287)
b. Current Year - 1 (60% Deferral)	(8,699)
c. Current Year - 2 (40% Deferral)	132,365
d. Current Year - 3 (20% Deferral)	<u>63,813</u>
e. Total Deferred for Year	\$ (160,808)
3. Market Value of Plan Assets, End of Year	\$ 22,132,638
4. Preliminary Actuarial Value of Plan Assets, End of Year (Item 3 – Item 2.e.)	\$ 22,293,446
5. Actuarial Value of Assets Corridor	
a. 80% of Market Value of Assets, End of Year	\$ 17,706,110
b. 120% of Market Value of Assets, End of Year	\$ 26,559,166
6. Final Actuarial Value of Plan Assets, End of Year (Item 4, But Not Less Than Item 5.a., or Greater Than Item 5.b.)	\$ 22,293,446

All dollar amounts in thousands

# Section III

## Valuation Results



Milliman

***SOUTH CAROLINA RETIREMENT SYSTEM***

Actuarial Valuation as of July 1, 2006

This report was prepared solely for the South Carolina Retirement Systems for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

# VALUATION RESULTS

---

In this section we present the principal valuation results. A pension plan is in actuarial balance if the assets on hand plus future employer and employee contributions are equal to the total value of future plan benefits. The System has assets on hand in the employee fund and the employer fund. Currently the System receives contributions from employees of 6.50% of pay and contributions from the employer of 8.05% of payroll (scheduled to increase to 9.06% for FY 2008).

The employer contribution is used to pay the normal cost and to fund the unfunded portion of the actuarial liability. The normal cost is the regular ongoing cost of the plan. The unfunded actuarial liability represents costs allocated to prior years that have not been paid by prior employer or employee contributions. A financing objective of the Board is to require sufficient contributions to fund the unfunded actuarial liability over no more than 30 years.

## Valuation Balance Sheet

Table III-1 demonstrates that the System is in actuarial balance. The assets of the System together with future employer and employee contributions are sufficient to fund all liabilities of the System.

## Summary of Actuarial Valuation Results

Table III-2 is a summary of the July 1, 2006 actuarial valuation results compared to similar results from the prior valuation. A net employer contribution rate of 8.05% (8.20% less the 0.15% contribution to the Group Life Fund) is sufficient to fund the unfunded actuarial liability over 30 years taking into account the scheduled increase to employer required contributions.

## Determination and Amortization of Unfunded Liability

In Table III-3 we show the determination of the unfunded actuarial liability and the contribution to amortize the liability. We determined the portion of the employer contribution for active members by taking the total employer contribution rate and subtracting the contribution to the Group Life Fund and the normal cost contribution. We determined the employer contribution for ORP members by taking the total employer contribution rate and subtracting the contribution to the Group Life Fund and the 5% contribution to the ORP. The contribution for reemployed retirees and TERI participants is the sum of the net employer contribution rate and the employee contribution rate (except for participants entering TERI before 7/1/2005 which do not contribute).

# VALUATION RESULTS

<b>TABLE III-1</b>		
<b>VALUATION BALANCE SHEET</b>		
	<b>JULY 1, 2006</b>	<b>JULY 1, 2005</b>
<b>Assets</b>		
1. Current Assets (Actuarial Value)		
a. Employee Annuity Savings Fund	\$ 5,229,175	\$ 4,915,423
b. Employer Annuity Accumulation Fund	<u>17,064,271</u>	<u>16,710,087</u>
c. Total Current Assets	\$ 22,293,446	\$ 21,625,510
2. Present Value of Future Member Contributions	\$ 3,313,857	\$3,055,430
3. Present Value of Future Employer Contributions		
a. Normal Cost Contributions	\$ 2,041,508	\$ 2,031,137
b. Accrued Liability Contributions <sup>1</sup>	<u>9,725,073</u>	<u>8,591,961</u>
c. Total Future Employer Contributions	\$ 11,766,581	\$ 10,623,098
4. Total Assets	<u>\$ 37,373,884</u>	<u>\$ 35,304,038</u>
<b>Liabilities</b>		
1. Employee Annuity Savings Fund		
a. Past Member Contributions	\$ 5,229,175	\$ 4,915,423
b. Present Value of Future Member Contributions <sup>2</sup>	<u>\$ 3,457,552</u>	<u>3,336,960</u>
c. Total Contributions to Employee Annuity Savings Fund	\$ 8,686,727	8,252,383
2. Employer Annuity Accumulation Fund		
a. Benefits Currently in Payment (including TERI)	\$ 17,800,254	\$ 16,891,954
b. Benefits to be Paid to Current Active Members (includes vested terminated members)	<u>10,886,903</u>	<u>10,159,701</u>
c. Total Benefits Payable from Employer Annuity Accumulation Fund	\$ 28,687,157	\$ 27,051,655
3. Total Liabilities	<u>\$ 37,373,884</u>	<u>\$ 35,304,038</u>

All dollar amounts are in thousands.

<sup>1</sup> \$143,695 to be paid by future employee contributions as of July 1, 2006 and \$281,530 as of July 1, 2005

<sup>2</sup> Including future employee contributions towards accrued liability

# VALUATION RESULTS

**TABLE III-2**  
**SUMMARY OF ACTUARIAL VALUATION RESULTS**  
**JULY 1, 2006**                      **JULY 1, 2005**

<b>Number of Active Members and Compensation</b>		
Active Members		
1. Number of State Employees	53,360	53,098
2. Compensation of State Employees	\$ 2,135,447	\$ 2,019,747
3. Number of Public School Employees	81,578	79,659
4. Compensation of Public School Employees	\$ 2,918,377	\$ 2,762,340
5. Number of Other Agency Employees	49,344	48,265
6. Compensation of Other Agency Employees	\$ 1,679,555	\$ 1,574,402
Total Number	184,282	181,022
Total Compensation	\$ 6,733,379	\$ 6,356,489
Active TERI Participants		
Number	9,704	14,416
Total Compensation	\$ 534,792	\$ 766,000
Rehired Retired Members		
Number	11,917	9,443
Total Compensation	\$ 410,499	\$ 193,182
ORP Members		
Number	13,596	11,147
Total Compensation	\$ 643,247	\$ 477,166
<b>Number of Persons Receiving Benefits and Benefits (Including TERI Members)</b>		
Total Number Receiving Benefits	97,205	94,667
Total Amount of Benefits	\$ 1,704,589	\$ 1,610,417
<b>Trust Fund Assets</b>		
Market Value	\$ 22,132,638	\$ 21,704,133
Actuarial Value	\$ 22,293,446	\$ 21,625,510
<b>Unfunded Actuarial liability (UAL)</b>		
Amount	\$ 9,725,073	\$ 8,591,961
Remaining Years in Amortization Period	30	30
<b>Required Contribution as a Percent of Compensation</b>		
Normal Cost Contribution	4.14%	4.23%
UAL Contribution	3.91%	3.32%
Group Life Insurance Contribution	<u>0.15%</u>	<u>0.15%</u>
Total	8.20%	7.70%

All dollar amounts are in thousands.

# VALUATION RESULTS

**TABLE III-3  
DETERMINATION AND AMORTIZATION OF UNFUNDED ACTUARIAL LIABILITY**

	JULY 1, 2006	JULY 1, 2005
1. Actuarial Present Value of Future Benefits		
a. Present Retired Members and Beneficiaries	\$ 17,800,254	\$ 16,891,954
b. Present Active and Inactive Members	<u>19,573,630</u>	<u>18,272,796</u>
c. Total Actuarial Present Value	\$ 37,373,884	\$ 35,304,038
2. Present Value of Future Normal Contributions		
a. Employees	\$ 3,313,857	\$ 3,055,430
b. Employer	<u>2,041,508</u>	<u>2,031,137</u>
c. Total Future Normal Contributions	\$ 5,355,365	\$ 5,086,567
3. Actuarial Liability	\$ 32,018,519	\$ 30,217,471
4. Current Actuarial Value of Assets	\$ 22,293,446	\$ 21,625,510
5. Unfunded Actuarial Liability	\$ 9,725,073	\$ 8,591,961
6. Unfunded Actuarial Liability Rates		
a. Active Members	3.91%	3.32%
b. TERI Members (including employee contributions) <sup>1</sup>	14.55%	13.80%
c. ORP Members	3.05%	2.55%
d. Reemployed Members (including employee contributions)	14.55%	13.80%
7. Unfunded Actuarial Liability Liquidation Period	30 years	30 years

All dollar amounts are in thousands.

<sup>1</sup> TERI participants who entered TERI before July 1, 2005 do not make employee contributions

# Section IV

## Accounting Statement Information



Milliman

***SOUTH CAROLINA RETIREMENT SYSTEM***

Actuarial Valuation as of July 1, 2006

This report was prepared solely for the South Carolina Retirement Systems for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

# ACCOUNTING STATEMENT INFORMATION

**Statement No. 25 of the Governmental Standards Board (GASB)** establishes standards for disclosure of pension information by public employee retirement systems (PERS) and governmental employers in notes to financial statements and supplementary information.

The GASB Statement #25 actuarial liability is the same as the actuarial liability amount calculated for funding purposes. The GASB Statement #25 liability is compared to the actuarial value of assets to determine the funded ratio. The actuarial liability is determined assuming that the employer is on going and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 7.25% per annum.

GASB Statement #25 requires the actuarial liability be compared with the actuarial value of assets for funding purposes. The relevant amounts as of July 1, 2006 are exhibited in Table IV-1 and compared with the July 1, 2005 amounts. Table IV-2 shows the schedule of funding progress as required by GASB Statement #25.

<b>TABLE IV-1</b>		
<b>ACCOUNTING STATEMENT INFORMATION</b>		
	July 1, 2006	July 1, 2005
1. Actuarial Liabilities for Retirees and Beneficiaries Currently Receiving Benefits and Terminated Employees Not Yet Receiving Benefits	\$ 18,625,983	\$ 17,665,473
2. Actuarial Liabilities for Current Employees	<u>13,392,536</u>	<u>12,551,998</u>
3. Total Actuarial Liability (1 + 2)	\$ 32,018,519	\$ 30,217,471
4. Net Actuarial Assets Available for Benefits	22,293,446	21,625,510
5. Unfunded Actuarial Liability (3 – 4)	\$ 9,725,073	\$ 8,591,961

All dollar amounts are in thousands.



# ACCOUNTING STATEMENT INFORMATION

## TABLE IV-2

INFORMATION FOR COMPREHENSIVE ANNUAL FINANCIAL REPORT

Member and Payroll Information <sup>1</sup>							
Actuarial Valuation Date	Number of Employers	Number of Active Members	Annual Payroll (in thousands)	Annual Average Pay	Percentage Increase in Average Pay		
July 1, 2006	763	184,282	\$ 6,733,379	\$ 36,538	4.06%		
July 1, 2005	768	181,022	6,356,489	35,114	3.30%		
July 1, 2004	763	181,827	6,180,599	33,992	1.06%		
July 1, 2003	763	185,538	6,240,768	33,636	3.50%		
July 1, 2002	746	189,166	6,147,712	32,499	3.42%		
July 1, 2001	739	191,494	6,017,537	31,424	5.15%		
July 1, 2000	729	196,825	5,881,847	29,884	5.49%		
July 1, 1999	726	193,213	5,473,759	28,330	3.83%		
July 1, 1998	720	190,259	5,191,048	27,284	2.78%		
July 1, 1997	725	185,597	4,927,124	26,547	4.40%		

Schedule of Retirants Added to and Removed from Rolls <sup>2</sup>								
Year Ended	Added to Rolls		Removed from Rolls		Rolls End of the Year		%Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances (in thousands)	Number	Annual Allowances (in thousands)	Number	Annual Allowances (in thousands)		
July 1, 2006	4,621	\$ 118,271	2,083	\$ 24,099	97,205	\$1,704,589	5.8%	\$17,536
July 1, 2005	7,203	167,748	2,143	23,537	94,667	1,610,417	9.8%	17,011
July 1, 2004	7,319	151,477	2,132	22,656	89,607	1,466,206	9.6%	16,363
July 1, 2003	7,866	163,867	2,510	27,662	84,420	1,337,385	11.3%	15,842
July 1, 2002	7,344	140,077	2,334	24,531	79,064	1,201,180	10.6%	15,193
July 1, 2001	12,523	284,739	2,474	23,735	74,054	1,085,634	31.7%	14,660
July 1, 2000	4,772	93,459	1,830	17,139	64,005	824,630	10.2%	12,884
July 1, 1999	4,961	68,522	2,436	12,175	61,063	748,310	8.1%	12,255
July 1, 1998	4,580	61,751	2,169	13,592	58,538	691,963	7.5%	11,321
July 1, 1997	4,601	78,201	2,346	10,928	56,127	643,804	11.7%	11,470

<sup>1</sup> Does not include TERI participants.

<sup>2</sup> Includes TERI participants.

# ACCOUNTING STATEMENT INFORMATION

## TABLE IV-2 (CONT.)

INFORMATION FOR COMPREHENSIVE ANNUAL FINANCIAL REPORT

### Schedule of Funding Progress

Actuarial Valuation Date	Valuation Assets	Actuarial Liability (AL)	Actuarial Assets as a % of Actuarial Liabilities	Unfunded AL (UAL)	Annual Active Member Payroll	UAL as a % of Active Member Payroll
July 1, 2006	\$ 22,293,446	\$ 32,018,519	69.6%	\$ 9,725,073	\$ 6,733,379	144.4%
July 1, 2005	21,625,510	30,217,471	71.6%	8,591,961	6,356,489	135.2%
July 1, 2004	20,862,659	25,977,852	80.3%	5,115,193	6,180,599	82.8%
July 1, 2003	20,197,936	24,398,931	82.8%	4,200,995	6,240,768	67.3%
July 1, 2002	19,298,174	22,446,574	86.0%	3,148,400	6,147,712	51.2%
July 1, 2001	18,486,773	21,162,147	87.4%	2,675,374	6,017,537	44.5%
July 1, 2000	17,286,108	19,414,972	89.0%	2,128,864	5,881,847	36.2%
July 1, 1999	16,120,513	16,298,438	98.9%	177,925	5,473,759	3.3%
July 1, 1998	14,946,070	15,952,345	93.7%	1,006,275	5,191,048	19.4%
July 1, 1997	13,621,362	14,977,179	90.9%	1,355,817	4,927,124	27.5%

### Solvency Test

Valuation Date	(1) Active Member Contributions	(2) Retirants & Beneficiaries	(3) Active Members (Employer Funded Portion)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets		
					(1)	(2)	(3)
July 1, 2006	\$ 5,229,175	\$ 17,800,254	\$ 8,989,090	\$ 22,293,446	100%	95.9%	0.0%
July 1, 2005	4,915,423	16,891,954	8,410,094	21,625,510	100%	98.9%	0.0%
July 1, 2004	4,750,077	14,184,765	7,043,010	20,862,659	100%	100.0%	27.4%
July 1, 2003	4,627,360	13,240,368	6,531,203	20,197,936	100%	100.0%	35.7%
July 1, 2002	4,512,402	11,600,395	6,333,777	19,298,174	100%	100.0%	50.3%
July 1, 2001	4,339,747	10,367,913	6,454,487	18,486,773	100%	100.0%	58.6%
July 1, 2000	4,563,513	7,484,050	7,367,149	17,286,108	100%	100.0%	71.1%
July 1, 1999	4,278,861	6,944,021	5,075,556	16,120,513	100%	100.0%	96.5%
July 1, 1998	3,972,263	6,305,903	5,674,179	14,946,070	100%	100.0%	82.3%
July 1, 1997	3,657,217	5,866,156	5,453,806	13,621,362	100%	100.0%	75.1%

All dollar amounts are in thousands.

# ACCOUNTING STATEMENT INFORMATION

## RETIRED MEMBERS AND BENEFICIARIES AS OF JULY 1, 2006

Group	Number	Annual Retirement Allowances
<b>Service Retirements:</b>		
Employees:		
Men	18,903	\$ 418,565
Women	<u>21,435</u>	<u>330,436</u>
Total	40,338	\$ 749,001
Teachers:		
Men	7,666	\$ 184,819
Women	<u>31,610</u>	<u>573,258</u>
Total	39,276	\$ 758,077
<b>Disability Retirements:</b>		
Employees:		
Men	2,914	\$ 35,655
Women	<u>3,461</u>	<u>38,682</u>
Total	6,375	\$ 74,337
Teachers:		
Men	836	\$ 11,362
Women	<u>3,404</u>	<u>41,376</u>
Total	4,240	\$ 52,738
<b>Beneficiaries of Deceased Retired Members and Active Members</b>		
Men	1,905	\$ 13,477
Women	<u>5,071</u>	<u>56,959</u>
Total	6,976	\$ 70,436
 Grand Total	 <u>97,205</u>	 <u>\$ 1,704,589</u>

All dollar amounts are in thousands.  
Includes TERI participants.

# Section V

## Membership Information



***SOUTH CAROLINA RETIREMENT SYSTEM***

Actuarial Valuation as of July 1, 2006

This report was prepared solely for the South Carolina Retirement Systems for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

# MEMBERSHIP INFORMATION

**TABLE V-1**  
**NUMBER OF ANNUAL RETIREMENT ALLOWANCES**  
**OF BENEFIT RECIPIENTS AS OF JULY 1, 2006**  
**(DOLLARS IN THOUSANDS)**

		NUMBER	ANNUAL RETIREMENT ALLOWANCES
<b>Service Retirement (Including TERI Participants)</b>			
a.	Employees		
	Life Annuity	25,521	\$ 419,662
	10 Year Certain and Life	517	8,227
	100% J & S	1,563	31,134
	100% Pop-up	4,524	94,182
	50% J & S	990	26,939
	50% Pop-up	4,145	108,498
	Level Off	<u>3,078</u>	<u>60,359</u>
	Total Employees	40,338	\$ 749,001
b.	Teachers		
	Life Annuity	27,259	\$ 493,627
	10 Year Certain and Life	581	9,765
	100% J & S	568	9,040
	100% Pop-up	2,409	47,781
	50% J & S	423	10,185
	50% Pop-up	2,657	65,003
	Level Off	<u>5,379</u>	<u>122,676</u>
	Total Teachers	39,276	\$ 758,077
c.	Total		
	Life Annuity	52,780	\$ 913,289
	10 Year Certain and Life	1,098	17,992
	100% J & S	2,131	40,174
	100% Pop-up	6,933	141,963
	50% J & S	1,413	37,124
	50% Pop-up	6,802	173,501
	Level Off	<u>8,457</u>	<u>183,035</u>
	Total	79,614	\$ 1,507,078

All dollar amounts are in thousands.

# MEMBERSHIP INFORMATION

<b>TABLE V-1 (Continued)</b>		
<b>NUMBER OF ANNUAL RETIREMENT ALLOWANCES OF BENEFIT RECIPIENTS AS OF JULY 1, 2006 (DOLLARS IN THOUSANDS)</b>		
	<b>NUMBER</b>	<b>ANNUAL RETIREMENT ALLOWANCES</b>
<b>Disability Retirement</b>		
a.	Employees	
	Life Annuity	4,918      \$ 58,035
	10 Year Certain and Life	155      1,709
	100% J & S	368      3,297
	100% Pop-up	420      4,064
	50% J & S	140      1,859
	50% Pop-up	374      5,373
	Level Off	0      0
	<b>Total Employees</b>	<b>6,375      \$ 74,337</b>
b.	Teachers	
	Life Annuity	3,628      \$ 45,342
	10 Year Certain and Life	91      1,103
	100% J & S	140      1,214
	100% Pop-up	175      1,801
	50% J & S	52      735
	50% Pop-up	154      2,543
	Level Off	0      0
	<b>Total Teachers</b>	<b>4,240      \$ 52,738</b>
c.	Total	
	Life Annuity	8,546      \$ 103,377
	10 Year Certain and Life	246      2,812
	100% J & S	508      4,511
	100% Pop-up	595      5,865
	50% J & S	192      2,594
	50% Pop-up	528      7,916
	Level Off	0      0
	<b>Total</b>	<b>10,615      \$ 127,075</b>
<b>Beneficiaries of Deceased Retired Members and Active Members</b>		
a.	Employees	4,834      \$ 50,192
b.	Teachers	<u>2,142</u> <u>20,244</u>
c.	Total	6,976      \$ 70,436
<b>Total of Table V-1 (pp V-1 &amp; V-2)</b>		
<b>GRAND TOTAL</b>		<b>97,205      \$ 1,704,589</b>

All dollar amounts are in thousands.

# MEMBERSHIP INFORMATION

**TABLE V-2**  
**DISTRIBUTION OF ACTIVE MEMBERS AND AVERAGE COMPENSATION**  
**BY AGE GROUPS AND SERVICE GROUPS AS OF JULY 1, 2006**  
**YEARS OF SERVICE**

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 & Over	Total
Under 25	5,623	67							5,690
	\$ 23,977	\$ 26,800							\$ 24,011
25 - 29	11,627	3,146	25						14,798
	\$ 29,539	\$ 33,991	\$ 35,988						\$ 30,496
30 - 34	8,375	8,252	1,852	34					18,513
	\$ 30,080	\$ 37,657	\$ 41,700	\$ 40,387					\$ 34,639
35 - 39	7,966	7,114	5,690	1,982	34				22,786
	\$ 29,094	\$ 36,202	\$ 43,814	\$ 44,503	\$ 38,298				\$ 36,343
40 - 44	7,735	6,550	4,234	5,041	2,153	55			25,768
	\$ 28,330	\$ 33,818	\$ 39,938	\$ 46,230	\$ 48,120	\$ 48,006			\$ 36,830
45 - 49	7,067	6,662	4,484	4,474	5,063	2,513	18		30,281
	\$ 28,066	\$ 33,192	\$ 38,447	\$ 43,381	\$ 50,620	\$ 50,620	\$ 53,708		\$ 38,652
50 - 54	6,098	5,961	4,453	4,373	3,742	4,035	330	2	28,994
	\$ 29,810	\$ 34,385	\$ 37,843	\$ 42,281	\$ 49,777	\$ 53,503	\$ 57,358	\$ 48,507	\$ 40,054
55 - 59	4,716	4,596	3,701	3,728	3,110	2,232	324	61	22,468
	\$ 29,558	\$ 34,701	\$ 38,372	\$ 40,522	\$ 47,254	\$ 52,476	\$ 63,580	\$ 60,303	\$ 39,181
60 - 64	2,414	2,480	1,787	1,824	1,378	918	145	51	10,997
	\$ 26,861	\$ 33,187	\$ 37,836	\$ 40,382	\$ 45,566	\$ 49,551	\$ 68,613	\$ 71,335	\$ 37,308
65 & Over	1,305	1,224	611	360	247	142	54	44	3,987
	\$ 17,677	\$ 22,756	\$ 29,871	\$ 36,527	\$ 43,872	\$ 42,993	\$ 53,562	\$ 57,870	\$ 26,261
<b>TOTAL</b>	<b>62,926</b>	<b>46,052</b>	<b>26,837</b>	<b>21,816</b>	<b>15,727</b>	<b>9,895</b>	<b>871</b>	<b>158</b>	<b>184,282</b>
	\$ 28,423	\$ 34,619	\$ 39,696	\$ 43,064	\$ 48,836	\$ 51,991	\$ 61,236	\$ 63,037	\$ 36,538

	Prior Year	Current Year
Average Age	44.29 Years	44.58 Years
Average Service	9.58 Years	9.89 Years
Average Pay	\$ 35,110	\$ 36,538
Percent Female	69.3%	69.5%

# MEMBERSHIP INFORMATION

<b>TABLE V-3</b>			
<b>DISTRIBUTION OF PARTICIPANTS RECEIVING BENEFITS AS OF JULY 1, 2006</b>			
<b>SERVICE RETIREMENT<sup>1</sup></b>			
Current Age Group	Number	Total Annual Benefit	Average Annual Benefit
Under 50	656	\$ 11,955,591	\$ 18,225
50 - 54	5,941	149,476,845	25,160
55 - 59	12,126	329,078,508	27,138
60 - 64	13,967	305,937,214	21,904
65 - 69	14,060	238,309,022	16,949
70 - 74	11,585	176,989,604	15,277
75 - 79	9,181	135,506,371	14,759
80 & Over	<u>12,098</u>	<u>159,824,850</u>	<u>13,211</u>
Total	79,614	\$ 1,507,078,005	\$ 18,930
<b>DISABILITY RETIREMENT</b>			
Current Age Group	Number	Total Annual Benefit	Average Annual Benefit
Under 50	1,348	\$ 14,674,768	\$ 10,886
50 - 54	1,453	18,568,505	12,779
55 - 59	2,191	29,226,988	13,340
60 - 64	2,167	26,805,567	12,370
65 - 69	1,495	16,642,778	11,132
70 - 74	885	9,219,859	10,418
75 - 79	521	5,657,221	10,858
80 & Over	<u>555</u>	<u>6,278,553</u>	<u>11,313</u>
Total	10,615	\$ 127,074,239	\$ 11,971
<b>BENEFICIARIES</b>			
Current Age Group	Number	Total Annual Benefit	Average Annual Benefit
Under 50	1,108	\$ 7,220,928	6,517
50 - 54	416	3,709,405	8,917
55 - 59	536	5,648,605	10,538
60 - 64	643	6,544,062	10,177
65 - 69	671	7,448,847	11,101
70 - 74	822	8,830,352	10,743
75 - 79	931	11,262,508	12,097
80 & Over	<u>1,849</u>	<u>19,772,062</u>	<u>10,693</u>
Total	6,976	\$ 70,436,769	\$ 10,097

<sup>1</sup> Includes TERI participants.



# Appendix A

## Actuarial Assumptions and Methods

# ACTUARIAL ASSUMPTIONS

## 1. Investment Rate of Return

7.25% per annum, compounded annually, composed of an assumed 3.00% inflation rate and a 4.25% real rate of return, net of investment and administrative expenses.

## 2. Salary Increases

Salary increases are assumed in accordance with the following representative rates:

ANNUAL INCREASE		ANNUAL INCREASE			
Years of Service	General Employees	Teachers	Years of Service	General Employees	Teachers
0	8.00%	8.00%	8	4.50%	4.75%
1	5.75%	8.00%	9	4.50%	4.75%
2	5.00%	5.50%	10	4.25%	4.75%
3	4.75%	5.25%	11	4.25%	4.50%
4	4.50%	5.00%	12	4.25%	4.40%
5	4.50%	5.00%	13	4.25%	4.40%
6	4.50%	5.00%	14	4.25%	4.40%
7	4.50%	4.75%	15+	4.00%	4.00%

# ACTUARIAL ASSUMPTIONS

## 3. Decrement Rates

### a. Service Retirement

		ANNUAL RATES OF UNREDUCED SERVICE RETIREMENT*		REDUCED SERVICE RETIREMENT	
Employees	Age	Male	Female	Male	Female
	50	12%	14%		
	55	15%	18%	5%	10%
	60	20%	20%	5%	11%
	61	20%	20%	15%	15%
	62	30%	35%	27%	28%
	63	30%	30%	16%	20%
	64	30%	35%	22%	20%
	65	40%	40%		
	66	20%	25%		
	67	20%	25%		
	68	20%	25%		
	69	20%	25%		
	70	100%	100%		
Teachers	Age	Male	Female	Male	Female
	50	14%	15%		
	55	18%	25%	6%	9%
	60	25%	25%	14%	15%
	61	30%	40%	18%	20%
	62	20%	35%	25%	25%
	63	20%	25%	28%	20%
	64	35%	30%	28%	30%
	65	45%	40%		
	66	23%	23%		
	67	23%	23%		
	68	23%	23%		
	69	23%	23%		
	70	100%	100%		

\* Plus the following percentage in year when first become eligible for unreduced service retirement before age 65. These additional percentages were changed for teachers and female general employees from the prior valuation based on the results of our study of emerging retirement experience. The prior rates were 40% for teachers, 30% for male general employees and 45% for female general employees.

Gender	General Employees	Teachers
Male	30%	30%
Female	30%	30%

# ACTUARIAL ASSUMPTIONS

b. Valuation of Teachers and Employees Retention Incentive (TERI)

We have assumed 40% of all members elect TERI coverage prior to age 60 and 60% elect between age 60 and 65 when first eligible for an unreduced retirement benefit. This is a recommended change from the prior year. We assume members in the TERI are exposed to adjusted retirement rates during TERI coverage and we assume 100% terminate employment at the end of the TERI period (5 years). The retirement rate is adjusted by the following schedule based on number of years since entering TERI:

YEARS SINCE ENTERING TERI PROGRAM	MULTIPLE OF UNREDUCED RETIREMENT TABLE
0.00 – 0.99	50%
1.00 – 1.99	65%
2.00 – 2.99	80%
3.00 – 3.99	90%
4.00 – 4.99	100%
5.00	All members assumed to retire immediately

c. In-service Mortality and Disability

IN SERVICE MORTALITY AND DISABILITY ANNUAL RATES OF:								
MORTALITY					DISABILITY			
Age	Employees		Teachers		Employees		Teachers	
	Male	Female	Male	Female	Male	Female	Male	Female
25	0.04%	0.01%	0.03%	0.01%	0.06%	0.05%	0.04%	0.05%
30	0.04%	0.02%	0.03%	0.01%	0.12%	0.07%	0.06%	0.07%
35	0.08%	0.03%	0.06%	0.03%	0.17%	0.15%	0.08%	0.07%
40	0.11%	0.05%	0.08%	0.04%	0.29%	0.19%	0.16%	0.13%
45	0.15%	0.07%	0.11%	0.06%	0.40%	0.27%	0.26%	0.26%
50	0.21%	0.11%	0.16%	0.09%	0.58%	0.46%	0.42%	0.42%
55	0.30%	0.16%	0.23%	0.14%	0.92%	0.74%	0.68%	0.68%
60	0.49%	0.26%	0.37%	0.22%	1.15%	1.12%	1.05%	1.05%
64	0.70%	0.35%	0.53%	0.30%	1.44%	1.56%	1.31%	1.31%

# ACTUARIAL ASSUMPTIONS

## d. Withdrawal Rates

PROBABILITY OF DECREMENT DUE TO WITHDRAWAL											
Years of Service – Male Teachers											
Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.2964	0.2029	0.1384	0.0973	0.0721	0.0578	0.0513	0.0508	0.0518	0.0538	0.0560
30	0.2721	0.1922	0.1356	0.0990	0.0776	0.0662	0.0607	0.0577	0.0538	0.0477	0.0387
35	0.2531	0.1823	0.1316	0.0990	0.0805	0.0708	0.0657	0.0611	0.0540	0.0429	0.0273
40	0.2371	0.1730	0.1271	0.0979	0.0817	0.0730	0.0679	0.0619	0.0529	0.0390	0.0199
45	0.2239	0.1649	0.1228	0.0960	0.0811	0.0726	0.0669	0.0600	0.0503	0.0359	0.0167
50	0.2135	0.1587	0.1192	0.0936	0.0787	0.0698	0.0628	0.0553	0.0460	0.0335	0.0174
55	0.2063	0.1549	0.1168	0.0908	0.0742	0.0645	0.0557	0.0479	0.0401	0.0317	0.0222
60	0.1996	0.1518	0.1143	0.0865	0.0669	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Years of Service – Female Teachers											
Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.2299	0.1608	0.1209	0.1006	0.0892	0.0841	0.0827	0.0802	0.0731	0.0660	0.0601
30	0.2269	0.1664	0.1260	0.1015	0.0878	0.0802	0.0751	0.0696	0.0618	0.0527	0.0426
35	0.2171	0.1597	0.1208	0.0966	0.0830	0.0748	0.0682	0.0615	0.0536	0.0434	0.0303
40	0.2045	0.1477	0.1106	0.0885	0.0759	0.0683	0.0616	0.0551	0.0475	0.0368	0.0215
45	0.1930	0.1361	0.1001	0.0798	0.0685	0.0619	0.0561	0.0504	0.0435	0.0329	0.0163
50	0.1866	0.1296	0.0937	0.0738	0.0633	0.0570	0.0523	0.0478	0.0417	0.0317	0.0154
55	0.1879	0.1308	0.0935	0.0727	0.0626	0.0543	0.0509	0.0474	0.0420	0.0331	0.0190
60	0.1948	0.1379	0.0986	0.0758	0.0660	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Years of Service – Male Employees											
Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.3288	0.2466	0.1902	0.1554	0.1345	0.1166	0.0963	0.0783	0.0650	0.0595	0.0662
30	0.2939	0.2211	0.1726	0.1425	0.1236	0.1089	0.0951	0.0821	0.0704	0.0603	0.0530
35	0.2678	0.1997	0.1553	0.1285	0.1122	0.1010	0.0916	0.0822	0.0716	0.0586	0.0424
40	0.2456	0.1804	0.1384	0.1140	0.1002	0.0922	0.0861	0.0791	0.0695	0.0549	0.0335
45	0.2257	0.1636	0.1233	0.1003	0.0882	0.0825	0.0781	0.0727	0.0639	0.0493	0.0266
50	0.2082	0.1501	0.1115	0.0891	0.0774	0.0717	0.0675	0.0626	0.0547	0.0419	0.0224
55	0.1942	0.1410	0.1041	0.0814	0.0691	0.0600	0.0543	0.0488	0.0419	0.0328	0.0212
60	0.1827	0.1351	0.1002	0.0770	0.0632	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Years of Service – Female Employees											
Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.2981	0.2459	0.2060	0.1772	0.1560	0.1385	0.1248	0.1159	0.1094	0.1030	0.0940
30	0.2710	0.2236	0.1864	0.1591	0.1395	0.1253	0.1145	0.1059	0.0970	0.0853	0.0688
35	0.2506	0.2015	0.1657	0.1410	0.1244	0.1130	0.1042	0.0958	0.0857	0.0712	0.0505
40	0.2329	0.1803	0.1451	0.1233	0.1101	0.1010	0.0935	0.0854	0.0748	0.0592	0.0367
45	0.2172	0.1622	0.1275	0.1080	0.0972	0.0894	0.0825	0.0746	0.0644	0.0493	0.0276
50	0.2041	0.1493	0.1151	0.0966	0.0864	0.0787	0.0715	0.0637	0.0543	0.0414	0.0234
55	0.1946	0.1429	0.1091	0.0895	0.0778	0.0688	0.0605	0.0526	0.0445	0.0353	0.0240
60	0.1873	0.1412	0.1079	0.0855	0.0701	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Note: No probability of withdrawal is applied to members eligible to retire.

# ACTUARIAL ASSUMPTIONS

## 4. Mortality After Retirement

For healthy retirees and beneficiaries, the UP-94 Mortality Table rates, with the female rates set back one year. A separate table of mortality rates is used for disabled retirees. The following are sample rates:

Age	HEALTHY		DISABLED	
	Male	Female	Male	Female
50	0.28%	0.14%	3.06%	2.31%
55	0.48%	0.22%	3.86%	2.66%
60	0.86%	0.42%	4.82%	2.98%
65	1.56%	0.82%	5.42%	3.33%
70	2.55%	1.37%	5.91%	3.70%
75	4.00%	2.19%	6.74%	4.43%
80	6.67%	3.80%	9.02%	6.71%
85	10.46%	6.56%	13.45%	10.15%

## 5. Marriage Assumption

100% of all active members are assumed to be married, with female spouses being 3 years younger.

## 6. Asset Valuation Method

The actuarial value of assets is equal to the market value of assets less a five-year phase in of the excess (shortfall) between expected investment return and actual net income (both based on market value) with the resulting value not being less than 80% or more than 120% of the market value of assets.

## 7. Cost Methods

### a. Normal Retirement, Termination, Death and Disability Benefits

The contribution rate is set by statute for both employees and for the employers. The funding period is determined, as described below, using the Entry Age Normal actuarial cost method.

The Entry Age Normal actuarial cost method assigns the plan's total unfunded liabilities (the actuarial present value of future benefits less the actuarial value of assets) to various periods. The unfunded actuarial liability is assigned to years prior to the valuation, and the normal cost is assigned to the year following the valuation. The remaining costs are the normal costs for future years. Then each year's

# ACTUARIAL ASSUMPTIONS

---

contribution is composed of (i) that year's normal cost, plus (ii) a payment used to reduce the unfunded actuarial liability.

The normal cost is the level (as a percentage of pay) contribution required to fund the benefits for all current members. Part of the normal cost is paid from the employees' own contributions. The employers pay the balance from their contributions. The method used for this valuation sets the present value of future normal costs that are to be paid by the employees as 6.25% of the value of the current year's earning plus 6.50% of their present value of future earnings after June 30, 2006.

The actuarial liability is the difference between the total present value of future benefits and the actuarial present value of future normal costs. The unfunded actuarial liability is the excess of the actuarial liability over the actuarial value of assets.

The balance of the employers' contributions – the remainder after paying their share of the normal cost – is used to reduce the unfunded actuarial liability. The calculation of the amortization period takes into account increases to contribution rates applicable to future years, payroll growth, and the results are rounded to the nearest year. Also, the calculation of the amortization period reflects additional contributions the System receives with respect to post 7/1/2005 TERI participants, ORP participants and return to work retirees. These contributions are assumed to grow at the same payroll growth rate as for active SCRS employees.

It is assumed that amortization payments are made monthly at the end of the month.

## b. Group Life Insurance Benefit

One-year term cost method.

## 8. **Unused Annual Leave**

To account for the effect of unused annual leave on Annual Final Compensation, liabilities for active members are increased 2.14%.

## 9. **Unused Sick Leave**

To account for the effect of unused sick leave on members' final credited service, the service of active members who retire is increased 3 months.

# ACTUARIAL ASSUMPTIONS

---

## 10. Future Cost-of-living Increases

Benefits are assumed to increase 1% annually beginning on the July 1<sup>st</sup> next following receipt of 12 monthly payments.

## 11. Administrative and Investment Expenses

The investment return assumption represents the expected return net of all administrative and investment expenses.

## 12. Payroll Growth Rate

4.00% per annum.

## 13. Recommended Changes from Prior Valuation

1. The rate of election for TERI be reduced from 80% to 40% of first eligible members prior to age 60 and from 80% to 60% of first eligible members at ages 60 to 65.
2. The rate of retirement assumption uses an additional rate reflecting the higher election of members in their first year of eligibility for unreduced retirement benefits prior to age 65. The additional first eligibility rate in the prior valuation was 40% for male and female teachers and 30% for male general employees and 45% for female general employees. We recommend the first eligibility rate to be 30% for all categories prior to age 65.



# Appendix B

## Summary of Plan Provisions



***SOUTH CAROLINA RETIREMENT SYSTEM***

Actuarial Valuation as of July 1, 2006

This report was prepared solely for the South Carolina Retirement Systems for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

## 1. Effective Date

July 1, 1945

## 2. Eligibility Requirements

All full-time, part-time, or temporary personnel who fill a permanent position as a public school employee, public higher education personnel, state employees, and city, county and other local public employees of participating employers must join as a condition of employment as of the effective date of employment, unless they elect to participate in one of the Optional Retirement Plans (ORP).

Employees in non-permanent positions may choose to join.

## 3. Creditable Service

The sum of “prior service” and “membership service.” Prior service means service rendered prior to membership for which credit is allowed. Membership service means service during which contributions have been made. This is counted in years, months, and days.

There are a number of different types of services that may be purchased by an employee under special rules, such as military service.

## 4. Average Final Compensation (AFC)

The total of the highest 12 consecutive quarters of compensation earned divided by 3. Compensation generally includes gross salary or wages, overtime, sick pay, wage deferrals, and termination pay for unused annual leave. The unused annual leave is added to the sum of the highest 12 consecutive quarters prior to dividing by 3. For members who joined the system on or after January 1, 1996, compensation for benefit and contribution purposes is limited in accordance with IRS Code Section 401(a)17.

## 5. Normal Retirement

- a. Eligibility    Attainment of age 65, or completion of 28 years of creditable service.
- b. Benefit        1.82% of AFC times creditable service.

## 6. Early Retirement

- a. Eligibility Attainment of age 60, or attainment of age 55 with 25 years of creditable service.
- b. Benefit Benefit accrued to date of retirement, reduced 5% for each year prior to 65 (for age 60 eligibility), or 4% for each year prior to 28 years (for age 55 with 25 years eligibility).

## 7. Teachers and Employees Retention Incentive (TERI)

Upon meeting normal retirement eligibility, a member can elect to enter the TERI for a maximum of five (5) years, after which employment will cease. The retirement benefits will be accumulated in TERI accounts and will be paid to the members upon the earlier of actual retirement or the end of participation period. The amount credited to the TERI account is based upon the calculation and form of benefit selected by the member at TERI entry. COLAs are credited to the TERI account. No interest is credited to the TERI account. Employee contributions (for those entering TERI on and after 7/1/2005) and employer contributions continue during TERI participation.

## 8. Disability Retirement

- a. Eligibility Disability prior to normal retirement age with at least 5 years of creditable service. The service requirement is waived for job related disability.
- b. Benefit Benefit equal to the amount that would have been payable at age 65 assuming continued employment and AFC at date of disability, less the equivalent benefit that would have been provided by the employee contributions that would have been made until age 65.

## 9. Death Benefits

- a. Death prior to age 60 or 15 years of creditable service

Refund of employee contributions with interest plus Group Life Insurance in a lump sum equal to annual earnable compensation at time of death. Group Life Insurance payable only to those whose employer participates and with at least 1 year of creditable service, unless death is job related.

- b. Death after age 60 or with 15 years of creditable service

Same as above. However, instead of the refund of employee contributions with interest, the beneficiary may elect to receive an annuity equal to the amount that would have been payable had the employee retired the day before death under Option B described below.

### 10. Employee Contributions

6.50% of earnable compensation effective July 1, 2006.

### 11. Vested Benefit Upon Termination

- a. Eligibility 100% vesting upon completion of 5 years of creditable service.
- b. Benefit Accrued benefit as of date of termination payable as of age 60.

### 12. Termination Benefit

- a. Eligibility Elect return of accumulated employee contributions.
- b. Benefit Return of employee contributions plus interest.

### 13. Optional Forms of Retirement Income

- Option A Monthly life annuity with guaranteed return of employee contributions plus interest. (This is the normal form of payment).
- Option B Monthly life annuity with 100% of reduced benefit continued to beneficiary upon death, reverting to maximum option if beneficiary predeceases retiree.
- Option C Monthly life annuity with 50% of reduced benefit continued to beneficiary upon death, reverting to maximum option if beneficiary predeceases retiree.

## 14. Cost of Living Adjustment

Beginning the July 1<sup>st</sup> following one year of receiving benefits, the monthly benefit amount will increase by the calendar year change in CPI but not to exceed 1%. Additional ad hoc COLAs may be paid as approved by the State Budget and Control Board and based upon the financial condition of the System.

## 15. Changes from Prior Valuation

The Supreme Court's ruling on the Layman case eliminates the requirement that TERI participant's who entered TERI prior to 7/1/2005 contribute the member contributions required of active members.