

**South Carolina Police Officers  
Retirement System  
(PORS)  
Actuarial Valuation  
as of July 1, 2008**



**March 2009**

# 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



### **SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM**

Actuarial Valuation as of July 1, 2008

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.



1921 Gallows Road  
Suite 900  
Vienna, VA 22182-3995

Tel +1 703 917.0143  
Fax +1 703 827.9266

milliman.com

March 27, 2009

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

Dear Members of the Board:

We are pleased to present the actuarial valuation report for the Police Officers Retirement System (PORS) as of July 1, 2008. The results of this report are applicable to Fiscal Year 2010.

#### **Applicable Laws**

The laws governing the operation of the Police Officers 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 Police Officers Retirement System as of July 1, 2008 and the results of the valuation are contained in the following report.

It is our understanding that as of the date of this report there is pending litigation concerning the contributions made by retirees returning to active employment. The outcome of this litigation is still unknown and any change to the current plan provisions is not considered in this valuation.

#### **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. The actuarial assumptions, with the exception of the assumed rate of investment return, 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. The investment return assumption of 8.00% (an increase from the previous assumption of 7.25%) was adopted by the Board on June 17, 2008 to apply for the July 1, 2008 valuation. We have reviewed these assumptions and believe they remain reasonable and are in accordance with the applicable Actuarial Standards of Practice.

The results and conclusions of this report should not be interpreted as applying in future years beyond FY 2010. 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**

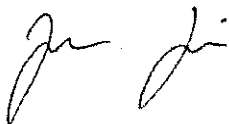
Based on the results of the July 1, 2008 valuation, we believe that the valuation appropriately reflects the System's long term obligations and the current schedule of contributions are sufficient to fund the liabilities of the System over a reasonable time frame, and based on these criteria, the System may be deemed actuarially sound.

We are members of the American Academy of Actuaries and meet their Qualification Standards to render the actuarial opinion contained herein.

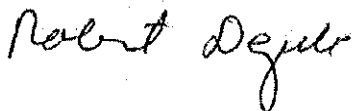
We hereby certify that, to the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the applicable Guides to Professional Conduct, Amplifying Opinions, and Supporting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

Respectfully submitted,

Milliman, Inc.



Hassan Ghazi, FSA  
Consulting Actuary



Robert S. Dezube, FSA  
Principal and Consulting Actuary

# Section I

## Board Summary



**SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM**

Actuarial Valuation as of July 1, 2008

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, 2008 actuarial valuation of the Police Officers Retirement System (PORS). The primary purposes of performing the annual actuarial valuation are to:

- 1) Determine whether the **contributions** to be paid into the Fund in Fiscal Year 2010 **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 employer contribution rate for the System, effective as of July 1, 2008, is 11.05%, including a 0.20% contribution for group life benefits and a 0.20% contribution for accidental death benefits (duty-related). The contribution rate (including group life and accidental death benefits) for the year ending June 30, 2008 was 10.70%. It is scheduled to increase to 11.53% (11.13% exclusive of group life and accidental death benefits) for FY 2011. The results of the actuarial valuation of the Retiree Group Life Insurance Program will be transmitted in a separate report.

The 10.65% (11.13% starting in FY 2011) net contribution is used to pay the employer's portion of the normal cost and to amortize the unfunded actuarial liability. The Board sets the contribution rate based on the actuarial valuation of the plan. The amortization period for the unfunded actuarial liability varies, depending on the amount of the liability and the net contribution towards the liability after paying the normal cost contribution.

## BOARD SUMMARY

---

The July 1, 2008 actuarially determined employer normal cost contribution rate increased from 7.08% for to 7.11%. As a result of the increase in the normal cost rate and the 0.35% increase in the employer contribution rate effective July 1, 2008, the net contribution towards the unfunded actuarial liability increased from 3.22% to 3.54%. The unfunded actuarial liability increased from \$570 million to \$956 million. This increase is primarily attributable to the provisions of Act 311 which provides for an annual automatic cost of living adjustment of the CPI-W up to 2.0%. The net result is that the amortization period for the unfunded actuarial liability increased from 16.3 years to 29.9 years when taking into account the scheduled 0.48% increase to the employer contribution rate effective beginning July 1, 2010. We note the following:

- The UAL grew by \$41.3 million due to interest and decreased by \$45.6 million due to the amortization payment.
- The plan granted a 2.0% COLA under Act 311 effective July 1, 2008. As this was not anticipated in the prior valuation, the COLA increased the unfunded actuarial liability by \$41.4 million, and the amortization period by 1.5 years. The provisions of Act 311 which provide annual automatic COLAs are now included beginning with the July 1, 2008 valuation results.
- The plan experienced a small net actuarial loss on plan liabilities. The total net loss increased the unfunded actuarial liability by \$16.1 million, and the amortization period by 0.5 years. The loss represents 0.40% of the actuarial liability which indicates cumulative experience closely followed the assumptions. 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 our assumptions.
- The plan experienced an actuarial loss related to the expected return on plan assets of \$37.0 million due to the investment return on the actuarial value of assets being less than the 7.25% assumed rate of return. The loss increased the amortization period by 1.3 years.
- In conjunction with the addition of the COLA provisions of Act 311, the asset smoothing method was changed to incorporate a 10-year smoothing period starting with the investment experience for the year ending June 30, 2008. All prior gains and losses will continue to be recognized over their respective five-year smoothing periods. This change in the method reduces the unfunded by \$32.1 million and the amortization period by 1.1 years.
- Act 311 adds the automatic COLA provisions which increased the UAL by \$641.9. This is partially offset by the change to the investment return provision from 7.25% to 8.00% which decreased the UAL by \$314.5 million. The net



## BOARD SUMMARY

---

effect of the Act, which also reflects the future 0.48% increase to the employer contribution rate, was an increase in the amortization period of 13.5 years.

- Other factors, such as increases in payroll and changes to normal cost, decreased the amortization period by 1.1 years in addition to the one-year expected decrease since the prior valuation. These factors did not have a direct impact on the UAL.

We also note that the financial markets have experienced large declines since July 1, 2008 and the value of the assets and the resulting UAL and amortization period as of July 1, 2009 may be significantly different from their respective values as of July 1, 2008.

The balance of this section presents summarized information regarding plan trends, details on the 2007/2008 experience, and tables presenting a summary of the principal results.

## BOARD SUMMARY

---

### 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, 2008. The actuarial value is a smoothed asset value that recognizes 10% (20% for returns prior to July 1, 2007) of the difference between the expected investment return and actual investment return each year for 10 years (5 years for returns prior to July 1, 2007). The expected investment return equals the prior year's market value of assets adjusted with contributions, and payments using the investment earnings assumption from the prior year's valuation (7.25% for returns in the year beginning on July 1, 2007 and 8.00% starting with returns after July 1, 2008).

As of July 1, 2008 the actuarial value of assets exceeds the market value by \$224.6 million. This results from the asset smoothing technique deferring more investment losses than investment gains. These deferred losses will increase the UAL over the next nine years unless there are offsetting market gains. The financial markets have experienced large declines since July 1, 2008 and the value of the assets as of July 1, 2009 may be significantly different from the value as of the current valuation date. In particular, the excess of the actuarial value over the market value is expected to grow.

For the plan year ending July 1, 2008, the plan earned -2.7%<sup>1</sup> on a market value basis and 6.1% on an actuarial value basis before taking into account the change in the asset smoothing period (7.1% after the change in method). These returns resulted in an actuarial loss to the fund of \$320.9 million on a market value basis and an actuarial loss to the fund of \$37.0 million on an actuarial value basis prior to taking into account the change in the asset smoothing method. The change in the asset smoothing method decreased the UAL by \$32.1 million.

---

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

## BOARD SUMMARY

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, 2007 value	\$ 3,245,480	\$ 3,160,240
Employer Contributions	110,050	110,050
Member Contributions	75,666	75,666
Transfer of Assets	2,008	2,008
Benefit Payments and Expenses	(208,296)	(208,296)
Expected Investment Earnings (7.25%)	<u>234,551</u>	<u>228,372</u>
Expected Value July 1, 2007	\$ 3,459,459	\$ 3,368,040
Investment Gain (Loss)	(320,908)	(36,995)
Change in Asset Smoothing Method	<u>NA</u>	<u>32,091</u>
July 1, 2008 value	\$ 3,138,551	\$ 3,363,136

### 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 July 1, 2008 valuation, the table below compares the liability measures under the old basis (without Act 311) and the new basis (with Act 311).

Liabilities (In Millions)	Total Value of Future Benefits	Actuarial Liability
July 1, 2007	\$ 4,762	\$ 3,731
July 1, 2008 (Old Basis)	\$ 5,088	\$ 3,992
July 1, 2008 (New Basis)	\$ 5,363	\$ 4,319

### 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, 2007 and July 1, 2008 unfunded



## BOARD SUMMARY

actuarial liability/(surplus) amounts, as well as the corresponding funded ratios for each (assets divided by liabilities).

In Millions	Unfunded Actuarial Liability	Funded Ratio
July 1, 2007	\$ 570	84.7%
July 1, 2008	\$ 956	77.9%

### MEMBERSHIP

There are three types of plan members: (i) current active members; (ii) inactive members who retain a right to either a return of contributions or a deferred vested benefit; and (iii) 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, 2007 and 2008.

There was an overall increase in membership during the year.

	7/1/2008	7/1/2007	Change
Active Members	26,427	25,645	3.0%
Inactive Members	11,558	11,038	4.7%
Retired Members and Beneficiaries	11,286	10,701	5.5%
Total Members	49,271	47,384	4.0%

### Trends

To understand the financial condition of the pension plan, a review of the trends over the last several years is helpful in evaluating the overall performance. Below, we present three charts that present trend information from past years through 2008.

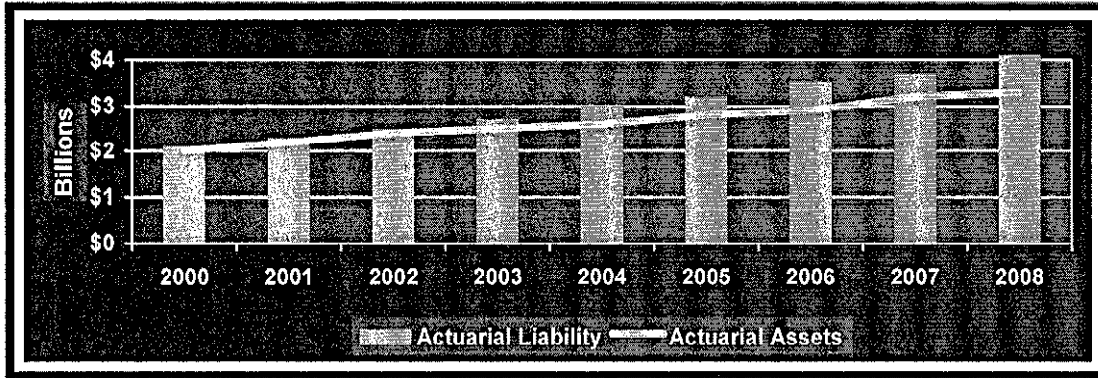
The first graph shows the growth in both actuarial liability and actuarial assets. The gap between actuarial liability and actuarial assets increases in each of these years resulting in the increases in the unfunded actuarial liability. The second graph shows that contributions have increased each year over the last five years, while the benefit payments have a slight upward trend over the eight years. Benefit payments from the

## BOARD SUMMARY

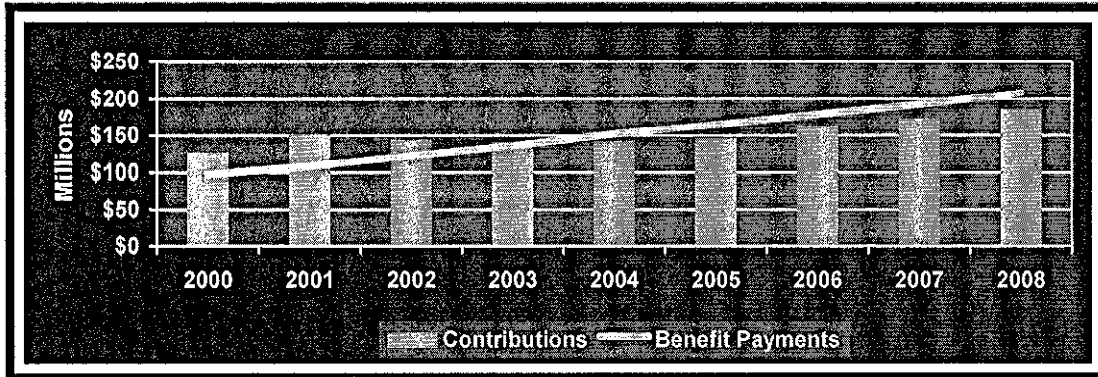
---

fund have exceeded contributions starting with the 2004 valuation. As of the current valuation, the negative cash flow represents less than 1% 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 10 to 30 years over the eight-year period consistent with the information shown in the first graph.

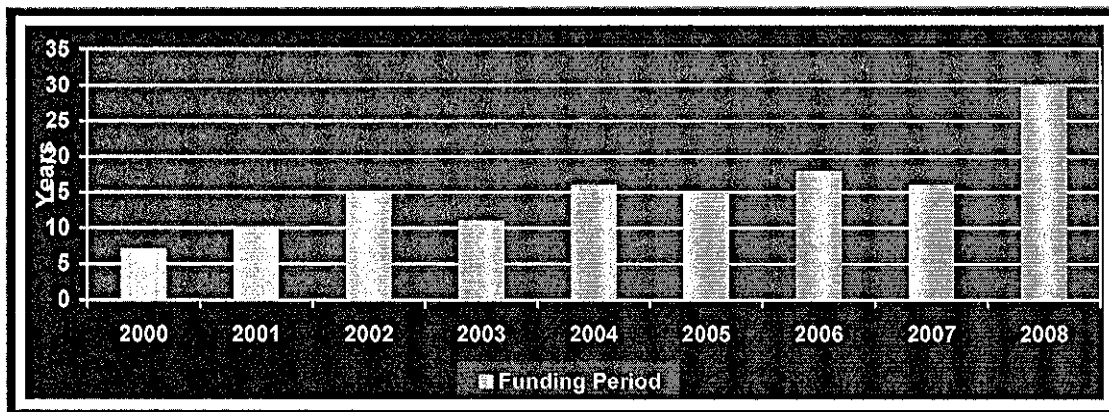
## Assets and Liabilities



## Cash Flows



## Unfunded Actuarial Liability Funding Period



# BOARD SUMMARY

<b>PRINCIPAL RESULTS</b>		
	July 1, 2008	July 1, 2007
<b>Membership</b>		
Number of:		
Active Members	26,427	25,645
Retirees and Beneficiaries	11,286	10,701
Inactive Members	<u>11,558</u>	<u>11,038</u>
Total	49,271	47,384
Payroll	\$ 1,061 million	\$ 993 million
<b>Statutory Contribution Rate (Including Group Insurance)</b>		
Member	6.50%	6.50%
Employer (effective as of valuation date)		
Retirement Contribution <sup>1</sup>	10.65%	10.30%
Group Life Contribution	0.20%	0.20%
Accidental Death Contribution	<u>0.20%</u>	<u>0.20%</u>
Total	11.05%	10.70%
<b>Assets</b>		
Market Value	\$ 3.14 billion	\$ 3.25 billion
Actuarial Value	\$ 3.36 billion	\$ 3.16 billion
Return on Market Value	(2.7)%	12.7%
Return on Actuarial Value	7.1%	8.3%
Ratio of Actuarial to Market Value	107.2%	97.4%
<b>Actuarial Information</b>		
Employer Normal Cost %	7.11%	7.08%
Unfunded Actuarial Liability (UAL)	\$ 956 million	\$ 570 million
Funded Ratio	77.9%	84.7%
Amortization Period	30 years	16 years
<b>Change in Unfunded Actuarial Liability (in millions)</b>		
Beginning of Year Unfunded Actuarial Liability	\$ 570.3	\$ 530.4
Interest on Unfunded Actuarial Liability	41.3	38.5
Amortization Payment	(45.6)	(42.6)
Asset Experience (w/ Method Change)	4.9	(29.7)
Salary Experience	16.0	0.7
Other Liability Experience	0.1	30.1
COLA	41.4	42.9
Benefit Changes	641.9	0.0
Assumption Changes	(314.5)	0.0
Total Increase / (Decrease)	385.5	39.9
End of Year Unfunded Actuarial Liability	\$ 955.8	\$ 570.3

<sup>1</sup>10.65% is first effective as of July 1, 2008. Rate is scheduled to increase to 11.13% on July 1, 2010

## **Section II**

# **Assets**



***SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM***

Actuarial Valuation as of July 1, 2008

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.



## 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 2008 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 10% (20% for returns prior to July 1, 2007) of the difference between expected investment return and actual investment return each year for ten years (five years for returns prior to July 1, 2007). Table II-2 shows the calculation of the Actuarial Value of Assets for the July 1, 2008 valuation.

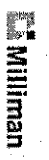
**ASSETS**

**TABLE II-1**  
**CALCULATION OF EXCESS INVESTMENT INCOME**  
**FOR ACTUARIAL VALUE OF ASSETS**

PLAN YEAR ENDING JUNE 30,

Item	2008	2007	2006	2005
1. Market Value of Assets at Beginning of Year	\$ 3,245,480	\$ 2,897,018	\$ 2,773,515	\$ 2,619,169
2. Net External Cash Flow During the Year	(20,572)	(17,506)	(11,956)	(16,766)
3. Market Value of Assets at End of Year	3,138,551	3,245,480	2,897,018	2,773,515
4. Actual Investment Income During the Year Based on Market Value:	(86,357)	365,968	135,459	171,112
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)	235,297	210,034	201,080	189,890
b. Net External Cash Flow (5) x (5) x (2)	(746)	(635)	(433)	(608)
c. Total: (a) + (b)	234,551	209,399	200,647	189,282
7. Excess Investment Income for Year: (4) - (6)	(\$ 320,908)	\$ 156,569	(\$ 65,188)	(\$ 18,170)

All dollar amounts are in thousands.



**SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM**

Actuarial Valuation as of July 1, 2008

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.

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

Item	Valuation as of July 1, 2008
1. Excess (Shortfall) of Investment Income for Current Year and Previous Three Years	
a. Current Year	(\$ 320,908)
b. Current Year - 1	156,569
c. Current Year - 2	(65,188)
d. Current Year - 3	(18,170)
2. Deferral of Excess (Shortfall) of Investment Income for:	
a. Current Year (90% Deferral)*	(\$ 288,817)
b. Current Year - 1 (60% Deferral)	93,941
c. Current Year - 2 (40% Deferral)	(26,075)
d. Current Year - 3 (20% Deferral)	<u>(3,634)</u>
e. Total Deferred for Year	(\$ 224,585)
3. Market Value of Plan Assets, End of Year	\$ 3,138,551
4. Preliminary Actuarial Value of Plan Assets, End of Year (Item 3 - Item 2.e.)	\$ 3,363,136
5. Actuarial Value of Assets Corridor	
a. 80% of Market Value of Assets, End of Year	\$ 2,510,841
b. 120% of Market Value of Assets, End of Year	\$ 3,766,261
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.)	\$ 3,363,136

All dollar amounts are in thousands

\*Reflects the prospective implementation of the 10-year smoothing method of the assets.

# Section III

## Valuation Results



**SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM**  
Actuarial Valuation as of July 1, 2008

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 it receives contributions from employees of 6.50% of pay and contributions from the employer of 10.65%<sup>1</sup> of pay (scheduled to increase to 11.13% in FY 2011), after subtracting the 0.20% of pay contribution for pre-retirement death trust (group life) and 0.20% of pay contribution for accidental death benefit trust.

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, 2008 actuarial valuation results compared to similar results from the prior valuation. An employer contribution rate of 11.05% (increasing to 11.53% in FY 2011) including the 0.20% contribution for group life benefits and the 0.20% contribution for accidental death benefits is sufficient to fund the unfunded actuarial liability over 30 years. Changes from last year include:

- The number of active members increased 3.0% and payroll of active members increased by 6.8%.
- The number of retirees increased 5.5%. Retirees received a 2.0% COLA effective July 1, 2008. Including the COLA, the total benefit amount for retirees increased 7.8%.
- The passage of Act 311 calls for automatic COLAs of the CPI-W up to 2.0% annually and significantly limits future ad hoc COLAs. Due primarily to the Act, the amortization period for the unfunded actuarial liability increased from 16 years to 30 years.

---

<sup>1</sup> 10.65% is first effective as of July 1, 2008. The rate for FY2008 was 10.30%. The rate is scheduled to increase to 11.13% on July 1, 2010

## VALUATION RESULTS

---

### 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 normal cost contributions and the contribution rates for pre-retirement death benefits and accidental death benefits. The contribution for reemployed retirees is the sum of the net employer contribution rate (i.e. the total employer rate less the pre-retirement death and accidental death benefit contributions) and the employee contribution rate.

# VALUATION RESULTS

<b>TABLE III-1</b>		
<b>VALUATION BALANCE SHEET</b>		
	<b>JULY 1, 2008</b>	<b>JULY 1, 2007</b>
<b>Assets</b>		
1. Current Assets (Actuarial Value)		
a. Employee Annuity Savings Fund	\$ 697,423	\$ 658,023
b. Employer Annuity Accumulation Fund	<u>2,665,713</u>	<u>2,502,217</u>
c. Total Current Assets	\$ 3,363,136	\$ 3,160,240
2. Present Value of Future Member Contributions	\$ 508,681	\$ 502,233
3. Present Value of Future Employer Contributions		
a. Normal Cost Contributions	\$ 535,079	\$ 529,376
b. Accrued Liability Contributions	<u>955,819</u>	<u>570,304</u>
c. Total Future Employer Contributions	\$ 1,490,898	\$ 1,099,680
4. Total Assets	<u>\$ 5,362,715</u>	<u>\$ 4,762,153</u>
<b>Liabilities</b>		
1. Employee Annuity Savings Fund		
a. Past Member Contributions	\$ 697,423	\$ 658,023
b. Present Value of Future Member Contributions	<u>508,681</u>	<u>502,233</u>
c. Total Contributions to Employee Annuity Savings Fund	\$ 1,206,104	\$ 1,160,256
2. Employer Annuity Accumulation Fund		
a. Benefits Currently in Payment	\$ 2,183,645	\$ 1,818,914
b. Benefits to be Paid to Current Active Members (included vested terminated members)	<u>1,972,966</u>	<u>1,782,983</u>
c. Total Benefits Payable from Employer Annuity Accumulation Fund	\$ 4,156,611	\$ 3,601,897
3. Total Liabilities	<u>\$ 5,362,715</u>	<u>\$ 4,762,153</u>

All dollar amounts are in thousands.

# VALUATION RESULTS

<b>TABLE III-2</b>		
<b>SUMMARY OF ACTUARIAL VALUATION RESULTS</b>		
	<b>JULY 1, 2008</b>	<b>JULY 1, 2007</b>
<b>Number of Active Members and Compensation</b>		
Active Members		
Number	26,427	25,645
Compensation	\$ 1,060,747	\$ 992,849
Rehired Retired Members		
Number	1,716	1,519
Compensation	\$ 64,735	\$ 55,043
<b>Number of Persons Receiving Benefits and Benefits</b>		
Total Number Receiving Benefits	11,286	10,701
Total Amount of Benefits	\$ 203,441	\$ 188,674
<b>Trust Fund Assets</b>		
Market Value	\$ 3,138,551	\$ 3,245,480
Actuarial Value	\$ 3,363,136	\$ 3,160,240
<b>Unfunded Actuarial liability (UAL)</b>		
Amount	\$ 955,819	\$ 570,304
Remaining Years in Amortization Period	30	16
<b>Required Contribution as a Percent of Compensation</b>		
Normal Cost Contribution	7.11%	7.08%
UAAL Contribution	3.54%	3.22%
Group Life Insurance Contribution	0.20%	0.20%
Accidental Death Contribution	<u>0.20%</u>	<u>0.20%</u>
Total <sup>1</sup>	11.05%	10.70%

All dollar amounts are in thousands.

<sup>1</sup> 11.05% (including group life and accidental death benefits) is first effective as of July 1, 2008. The rate for FY2008 was 10.70%. The rate is scheduled to increase to 11.53% on July 1, 2010



## VALUATION RESULTS

<b>TABLE III-3</b>		
<b>DETERMINATION AND AMORTIZATION OF UNFUNDED ACTUARIAL LIABILITY</b>		
	<b>JULY 1, 2008</b>	<b>JULY 1, 2007</b>
1. Actuarial Present Value of Future Benefits		
a. Present Retired Members and Beneficiaries	\$ 2,183,645	\$ 1,818,914
b. Present Active and Inactive Members	<u>3,179,070</u>	<u>2,943,239</u>
c. Total Actuarial Present Value	\$ 5,362,715	\$ 4,762,153
2. Present Value of Future Normal Contributions		
a. Employees	\$ 508,681	\$ 502,233
b. Employer	<u>535,079</u>	<u>529,376</u>
c. Total Future Normal Contributions	\$ 1,043,760	\$ 1,031,609
3. Actuarial liability	\$ 4,318,955	\$ 3,730,544
4. Current Actuarial Value of Assets	\$ 3,363,136	\$ 3,160,240
5. Unfunded Actuarial liability	\$ 955,819	\$ 570,304
6. Unfunded Actuarial Liability Rate *	3.54%	3.22%
7. Unfunded Actuarial Liability Liquidation Period	30 years	16 years

All dollar amounts are in thousands.

\* Total contribution rate is schedule to increase by 0.48% (to 11.53%) in FY 2011. The liquidation period of 30 years as of July 1, 2008 reflects this scheduled increase.

# **Section IV**

## **Accounting Statement Information**



**SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM**  
Actuarial Valuation as of July 1, 2008

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 No. 25 actuarial liability is the same as the actuarial liability amount calculated for funding purposes. The GASB Statement No. 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 8.00% (7.25% as of July 1, 2007) per annum.

GASB Statement No. 25 requires the actuarial liability be compared with the actuarial value of assets for funding purposes. The relevant amounts as of July 1, 2008 are exhibited in Table IV-1 and compared with amounts as of July 1, 2007. Table IV-2 shows the schedule of funding progress as required by GASB Statement No. 25.

<b>TABLE IV-1</b>		
<b>ACCOUNTING STATEMENT INFORMATION</b>		
	July 1, 2008	July 1, 2007
1. Actuarial Liabilities for Retirees and Beneficiaries Currently Receiving Benefits and Terminated Employees Not Yet Receiving Benefits.	\$ 2,287,072	\$ 1,932,893
2. Actuarial Liabilities for Current Employees	<u>2,031,883</u>	<u>1,797,651</u>
3. Total Actuarial Liability (1 + 2)	\$ 4,318,955	\$ 3,730,544
4. Net Actuarial Assets Available for Benefits	\$ 3,363,136	\$ 3,160,240
5. Unfunded Actuarial Liability (3 - 4)	\$ 955,819	\$ 570,304

All dollar amounts are in thousands.

# ACCOUNTING STATEMENT INFORMATION

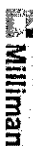
**TABLE IV-2**  
**INFORMATION FOR COMPREHENSIVE ANNUAL FINANCIAL REPORT**

Actuarial Valuation Date	Member and Payroll Information				Annual Average Pay	Percentage Increase in Average Pay
	Number of Employers	Number of Active Members	Annual Payroll (in thousands)	Annual Average Pay		
July 1, 2008	313	26,427	\$ 1,060,747	\$ 40,139	3.68%	
July 1, 2007	313	25,645	992,849	38,715	3.09%	
July 1, 2006	314	24,813	931,815	37,554	5.05%	
July 1, 2005	314	23,795	850,610	35,747	3.16%	
July 1, 2004	314	23,734	822,448	34,653	3.35%	
July 1, 2003	314	23,871	800,394	33,530	6.08%	
July 1, 2002	302	23,963	757,393	31,607	3.59%	
July 1, 2001	296	24,821	757,335	30,512	5.50%	
July 1, 2000	297	24,782	716,749	28,922	4.82%	
July 1, 1999	307	23,127	638,086	27,591	4.11%	

Year Ended	Added to Rolls			Removed from Rolls			Rolls End of the Year		
	Number	Annual Allowances (in thousands)	% Increase in Annual Allowances	Number	Annual Allowances (in thousands)	% Increase in Annual Allowances	Number	Annual Allowances (in thousands)	% Increase in Annual Allowances
July 1, 2008	779	\$ 17,458	7.8%	194	\$ 2,691	7.8%	11,286	\$ 203,441	7.8%
July 1, 2007	772	16,474	7.8%	205	2,745	7.8%	10,701	188,674	7.8%
July 1, 2006	678	16,880	8.8%	205	2,691	8.8%	10,134	174,945	8.8%
July 1, 2005	778	12,576	9.8%	173	2,147	9.8%	9,661	160,756	9.8%
July 1, 2004	894	16,256	10.8%	265	2,923	10.8%	9,056	146,348	10.8%
July 1, 2003	947	18,614	13.6%	226	2,733	13.6%	8,427	133,015	13.6%
July 1, 2002	956	17,378	14.4%	220	2,639	14.4%	7,706	117,134	14.4%
July 1, 2001	989	17,235	14.9%	341	3,986	14.9%	6,970	102,395	14.9%
July 1, 2000	549	9,979	10.4%	152	1,581	10.4%	6,322	89,146	10.4%
July 1, 1999	606	8,490	9.1%	238	1,731	9.1%	5,925	80,748	9.1%

**Schedule of Retirees Added to and Removed from Rolls**



**SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM**

Actuarial Valuation as of July 1, 2008

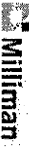
This report was prepared solely for the South Carolina Retirement Systems for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

# ACCOUNTING STATEMENT INFORMATION

## 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, 2008	\$ 3,363,136	\$ 4,318,955	77.9%	\$ 955,819	\$ 1,060,747	90.1%			
July 1, 2007	3,160,240	3,730,544	84.7%	570,304	992,849	57.4%			
July 1, 2006	2,935,841	3,466,281	84.7%	530,440	931,815	56.9%			
July 1, 2005	2,774,606	3,173,930	87.4%	399,324	850,610	46.9%			
July 1, 2004	2,616,835	2,984,584	87.7%	367,749	822,448	44.7%			
July 1, 2003	2,511,369	2,744,849	91.5%	233,480	800,394	29.2%			
July 1, 2002	2,351,100	2,527,876	93.0%	176,776	757,393	23.3%			
July 1, 2001	2,197,982	2,324,257	94.6%	126,275	757,335	16.7%			
July 1, 2000	2,008,554	2,095,991	95.8%	87,437	716,749	12.2%			
July 1, 1999	1,844,517	1,898,237	97.2%	53,720	638,086	8.4%			
<b>Solvency Test</b>									
Valuation Date	Active Member Contributions (1)	Retirees & Beneficiaries (2)	Active Members (Employer Funded Portion) (3)	Valuation Assets	Portion of Aggregate Covered by Assets (1)	Accrued Liabilities Covered by Assets (2)	Liabilities (3)		
July 1, 2008	\$ 697,423	\$ 2,183,645	\$ 1,437,887	\$ 3,363,136	100.0%	100.0%	33.5%		
July 1, 2007	658,023	1,818,914	1,253,607	3,160,240	100.0%	100.0%	54.5%		
July 1, 2006	622,008	1,668,449	1,175,824	2,935,841	100.0%	100.0%	54.9%		
July 1, 2005	585,701	1,530,199	1,058,030	2,774,606	100.0%	100.0%	62.0%		
July 1, 2004	548,699	1,415,627	1,020,258	2,616,835	100.0%	100.0%	64.0%		
July 1, 2003	516,313	1,265,173	963,363	2,511,369	100.0%	100.0%	75.8%		
July 1, 2002	492,178	1,136,998	898,700	2,351,100	100.0%	100.0%	80.3%		
July 1, 2001	464,217	977,769	882,271	2,197,982	100.0%	100.0%	85.7%		
July 1, 2000	427,449	844,631	823,911	2,008,554	100.0%	100.0%	89.4%		
July 1, 1999	389,456	783,042	725,739	1,844,517	100.0%	100.0%	92.6%		

All dollar amounts are in thousands



**SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM**

IV-3

Actuarial Valuation as of July 1, 2008

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

RETIRED MEMBERS AND BENEFICIARIES AS OF JULY 1, 2008		
Group	Number	Annual Retirement Allowances
<b>Service Retirements:</b>		
Employees:		
Men	7,022	\$ 141,700,259
Women	<u>1,517</u>	<u>19,026,572</u>
Total	8,539	\$ 160,726,831
<b>Disability Retirements:</b>		
Employees:		
Men	1,299	\$ 25,250,025
Women	<u>395</u>	<u>5,536,770</u>
Total	1,694	\$ 30,786,795
<b>Beneficiaries of Deceased Retired Members and Active Members</b>		
Men	40	\$ 352,019
Women	<u>1,013</u>	<u>11,575,797</u>
Total	1,053	\$ 11,927,816
Grand Total	11,286	\$ 203,441,442

## **Section V**

# **Membership Information**



**SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM**

Actuarial Valuation as of July 1, 2008

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, 2008		
	NUMBER	ANNUAL RETIREMENT ALLOWANCES
<b>Retirement</b>		
<b>a. Service Retirement</b>		
Life Annuity	4,953	\$ 89,239,685
100% J & S	185	2,917,604
100% Pop-up	1,056	17,732,866
50% J & S	162	4,073,547
50% Pop-up	925	22,062,477
Level Income	<u>1,258</u>	<u>24,700,652</u>
Total	8,539	\$160,726,831
<b>b. Disability Retirement</b>		
Life Annuity	1,361	\$25,607,400
100% J & S	54	663,844
100% Pop-up	128	1,624,061
50% J & S	32	520,781
50% Pop-up	<u>119</u>	<u>2,370,709</u>
Total	1,694	\$ 30,786,795
<b>Beneficiaries of Deceased Retired Members and Active Members</b>		
<b>c. Total</b>	1,053	\$ 11,927,816
<b>Total</b>		
<b>GRAND TOTAL</b>	11,286	\$ 203,441,442

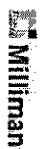


# MEMBERSHIP INFORMATION

**TABLE V-2**  
**DISTRIBUTION OF ACTIVE MEMBERS AND AVERAGE COMPENSATION**  
**BY AGE GROUPS AND SERVICE GROUPS AS OF JULY 1, 2008**  
**YEARS OF SERVICE**

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 & Over	Total
Under 25	1,731	5							1,736
25 - 29	\$31,045	\$32,114							\$31,048
	3,327	564							3,895
30 - 34	\$33,855	\$38,234							\$34,501
	1,848	1,601							3,919
35 - 39	\$34,746	\$39,833							\$37,793
	1,480	1,173							4,488
40 - 44	\$35,125	\$40,182							\$40,680
	1,130	688							3,999
45 - 49	\$35,084	\$39,765							\$43,087
	808	587							3,359
50 - 54	\$35,506	\$40,729							\$44,505
	590	517							2,464
55 - 59	\$35,833	\$40,705							\$43,824
	408	331							1,591
60 - 64	\$36,264	\$42,366							\$43,428
	215	188							779
65 & Over	\$36,518	\$41,157							\$43,611
	44	46							197
TOTAL	\$39,294	\$42,064	\$41,372	\$47,717	\$56,198	\$61,803	\$77,273	\$45,362	26,427
	11,581	5,700	4,142	2,581	1,900	386	116	21	\$40,139
	\$34,230	\$40,112	\$43,294	\$48,243	\$52,135	\$61,105	\$67,206	\$67,199	\$40,139

	Prior Year	Current Year
Average Age	39.37 years	39.39 years
Average Service	8.29 years	8.24 years
Average Pay	\$ 38,715	\$ 40,139
Percent Female	25.9%	25.9%



**SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM**

Actuarial Valuation as of July 1, 2008

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.

**TABLE V-3**  
**DISTRIBUTION OF PARTICIPANTS RECEIVING BENEFITS**  
**SERVICE RETIREMENT**

<b>Current Age Group</b>	<b>Number</b>	<b>Total Annual Benefit</b>	<b>Average Annual Benefit</b>
Under 50	413	\$ 9,579,242	\$ 23,194
50 - 54	816	21,137,292	25,904
55 - 59	1,651	35,848,047	21,713
60 - 64	1,905	35,480,675	18,625
65 - 69	1,554	24,859,589	15,997
70 - 74	1,077	16,459,428	15,283
75 - 79	652	9,515,303	14,594
80 & Over	471	7,847,255	16,661
<b>Total</b>	<b>8,539</b>	<b>\$ 160,726,831</b>	<b>\$ 18,823</b>

**DISABILITY RETIREMENT**

<b>Current Age Group</b>	<b>Number</b>	<b>Total Annual Benefit</b>	<b>Average Annual Benefit</b>
Under 50	648	\$ 13,331,942	\$ 20,574
50 - 54	327	5,976,400	18,276
55 - 59	321	5,096,500	15,877
60 - 64	215	3,519,865	16,371
65 - 69	95	1,383,054	14,558
70 - 74	47	809,629	17,226
75 - 79	27	432,271	16,010
80 & Over	14	237,134	16,938
<b>Total</b>	<b>1,694</b>	<b>\$ 30,786,795</b>	<b>\$18,174</b>

**BENEFICIARIES**

<b>Current Age Group</b>	<b>Number</b>	<b>Total Annual Benefit</b>	<b>Average Annual Benefit</b>
Under 50	137	\$ 1,350,709	\$ 9,859
50 - 54	57	689,355	12,094
55 - 59	84	1,031,311	12,278
60 - 64	118	1,324,696	11,226
65 - 69	127	1,490,032	11,733
70 - 74	145	1,824,016	12,579
75 - 79	139	1,605,152	11,548
80 & Over	246	2,612,545	10,620
<b>Total</b>	<b>1,053</b>	<b>\$ 11,927,816</b>	<b>\$ 11,327</b>

# Appendix A

## Actuarial Assumptions and Methods



*SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM*

Actuarial Valuation as of July 1, 2008

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.

# ACTUARIAL ASSUMPTIONS

## 1. Investment Rate of Return

8.00% per annum, effective July 1, 2008, compounded annually, composed of an assumed 3.00% inflation rate and a 5.00% real rate of return, net of investment and administrative expenses.

## 2. Salary Increases

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

Years of Service	ANNUAL INCREASE	Years of Service	General Employees
0	11.50%	8	4.75%
1	6.75%	9	4.75%
2	5.75%	10	4.75%
3	5.50%	11	4.75%
4	5.25%	12	4.50%
5	5.00%	13	4.50%
6	4.75%	14	4.50%
7	4.75%	15+	4.50%

## 3. Decrement Rates

### a. Service Retirement, Mortality, and Disability

ANNUAL RATE OF			
Age	SERVICE RETIREMENT*	MORTALITY	DISABILITY
20		0.03%	0.12%
25		0.03%	0.14%
30		0.04%	0.18%
35		0.07%	0.35%
40		0.10%	0.46%
45	20.00%	0.14%	0.69%
50	20.00%	0.19%	0.86%
55	14.00%	0.27%	
60	15.00%	0.44%	
64	25.00%	0.63%	

\* Plus an additional 22% for participants under age 55 in year they first become eligible for unreduced service retirement.

## ACTUARIAL ASSUMPTIONS

All employees are assumed to retire at age 65. In addition, 25% of disabilities are assumed to be duty-related, and 5% of pre-retirement deaths are assumed to be accidental (duty-related).

b. Withdrawal rates

PROBABILITY OF DECREMENT DUE TO WITHDRAWAL											
Years of Service											
Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.2494	0.1816	0.1342	0.1047	0.0885	0.0780	0.0715	0.0640	0.0545	0.0524	0.0618
30	0.2478	0.1822	0.1376	0.1107	0.0959	0.0876	0.0810	0.0732	0.0633	0.0545	0.0481
35	0.2450	0.1795	0.1359	0.1104	0.0967	0.0899	0.0837	0.0763	0.0665	0.0539	0.0381
40	0.2398	0.1739	0.1304	0.1055	0.0927	0.0868	0.0814	0.0747	0.0653	0.0510	0.0305
45	0.2312	0.1649	0.1212	0.0964	0.0845	0.0783	0.0738	0.0681	0.0595	0.0458	0.0256
50	0.2193	0.1532	0.1090	0.0839	0.0730	0.0646	0.0610	0.0564	0.0490	0.0382	0.0236
55	0.2050	0.1393	0.0944	0.0684	0.0587						
60	0.1871	0.1228	0.0773	0.0503	0.0419						

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

#### 4. Mortality After Retirement

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

Age	HEALTHY		DISABLED
	Male	Female	All
50	0.39%	0.14%	2.30%
55	0.68%	0.22%	2.89%
60	1.23%	0.42%	3.62%
65	2.14%	0.82%	4.07%
70	3.35%	1.37%	4.43%
75	5.40%	2.19%	5.05%
80	8.87%	3.80%	6.77%
85	13.65%	6.56%	10.09%

#### 5. Marriage Assumption

100% of all active members are assumed to be married, with female spouses being 4 years younger.

## ACTUARIAL ASSUMPTIONS

---

### 6. Asset Valuation Method

Beginning with the July 1, 2008 actuarial valuation, the actuarial value of assets is equal to the market value of assets less a ten-year phase in of the excess (shortfall) between expected market investment return and actual net investment income (excess returns and shortfalls determined prior to July 1, 2008 remain with a five-year phase in) with the resulting value not being less than 80% or more than 120% of the market value of assets.

### 7. Cost Methods

Projected benefit method with level percentage entry age normal cost. Gains and losses are reflected in the period remaining to liquidate the unfunded actuarial liability. The resulting amortization period is based upon payments level as a percentage of payroll and the results are rounded to the nearest year. We completed a separate valuation of the accidental (duty-related) death benefit.

### 8. Unused Annual Leave

To account for the effect of unused annual leave on Annual Final Compensation, liabilities for active members are increased 3.75%.

### 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.

### 10. Future Cost-of-living Increases

Benefits are assumed to increase 2% 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.

## ACTUARIAL ASSUMPTIONS

---

### 13. Changes from Prior Valuation

The following changes were the result of Act 311 and Board actions to change investment assumptions and smoothing periods. The new assumptions were adopted by the Board on June 17, 2008.

1. Increased the assumed annual cost of living adjustment from 0.0% to 2.0%
2. Increased the real rate of investment return from 4.25% to 5.00% which increased the investment return assumption from 7.25% to 8.00%
3. The asset smoothing period is increased from 5 to 10 years beginning with the investment experience for the year ended June 30, 2008.

# Appendix B

## Summary of Plan Provisions



***SOUTH CAROLINA POLICE OFFICERS RETIREMENT SYSTEM***

Actuarial Valuation as of July 1, 2008

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.



## SUMMARY OF PLAN PROVISIONS

---

### 1. Effective Date

July 1, 1962

### 2. Eligibility Requirements

All police officers or firefighters who work at least 1,600 hours as a police officer or firefighter and whose compensation is at least \$2,000 during the fiscal year.

### 3. Creditable Service

Creditable 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 55, and completion of 5 years of creditable service or completion of 25 years of creditable service.
- b. Benefit 2.14% of AFC times creditable service (Class II).

### 6. Disability Retirement

- a. Eligibility Disability prior to age 55 with at least 5 years of creditable service. The service requirement is waived for job related disability.

## SUMMARY OF PLAN PROVISIONS

---

- b. Benefit      Benefit equal to the amount of retirement benefit that would have been payable assuming continued employment to age 55 and AFC at date of disability.

### 7. Death Benefits

a. Death prior to age 55

i) Prior to completion of 15 years of creditable service

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

ii) After completion of 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 member terminated the day before death and elected payment to commence at age 55 under Option B described below.

b. Death after 55

Same as Item a(ii) above.

### 8. Accidental Death Benefit

If death occurs and is duty related, then a monthly annuity equal to 50% of the member's compensation at the time of death is paid to the statutory beneficiary until the beneficiary's death.

### 9. Member Contribution

The member contribution rate is 6.50% of compensation. Accumulated member contributions are credited with interest at the rate of 4% per year.

## SUMMARY OF PLAN PROVISIONS

---

### 10. Vested Benefit upon Termination

- a. Eligibility 100% vesting upon completion of 5 years of creditable service and refund benefit declined.
- b. Benefit Accrued service retirement benefit as of date of termination payable as of age 55.

### 11. Refund Benefit

- a. Eligibility All nonvested members, and at members election, vested members.
- b. Benefit Return of employee contributions plus interest.

### 12. 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.

Options B and C are actuarially reduced.

### 13. 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 2%. 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 and the requirements of Act 311 (amortization period less than 25 years, amortization period decrease by at least one-year after granting ad-hoc COLA, etc.).

### 14. Changes from Prior Valuation

Automatic cost of living adjustment added with Act 311.

---