South Carolina Police Officers Retirement System (PORS)

Actuarial Valuation as of July 1, 2004

A MILLIMAN GLOBAL FIRM

Milliman

Consultants and Actuaries

June 2005

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June 3, 2005

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

Dear Members of the Board:

At your request, we have conducted our first annual actuarial valuation of the South Carolina Retirement System. The results of the valuation are contained in the following report.

The actuarial assumptions used in performing this valuation have been recommended by the actuary and adopted by the State Budget and Control Board based on the most recent review of the System's experience completed during Fiscal Year 2004. The assumptions used, in the aggregate, reflect our best estimate of anticipated future experience of the plan. The results of this report are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from these assumptions, the true cost of the plan could vary from our results.

The assumptions and methods used in performing this valuation meet the parameters set by Government Accounting Standards Board (GASB) Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contributions Plans.*

The purpose of this report is to determine if the contribution rate for FY 2006 is adequate to amortize the unfunded actuarial liability over no more than 30 years as required by GASB Statement No. 25, to review the experience for the previous year, and to provide information for financial disclosures. This report may not be used for purposes other than those listed above without Milliman's prior written consent.

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In preparing our report we relied, without audit, on information (some oral and some written) supplied by the Retirement System's staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. Census data provided to us by the System has been reviewed for reasonableness, and for consistency with the data from the prior year. If any data or other information is inaccurate or incomplete, our calculations may need to be revised.

I, Robert S. Dezube, am a consulting actuary and I, Hassan Ghazi, am an associate 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.

Sincerely,

Milliman, Inc.

Hassan Ghazi, ASA
Associate Actuary

Robert Dezube

Robert S. Dezube, FSA
Principal and Consulting Actuary

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Section I

Board Summary

This report presents the results of the July 1, 2004 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 into the Fund in Fiscal Year 2006 **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.

The July 1, 2004 valuation is the first valuation performed by Milliman for PORS. Before performing the July 1, 2004 valuation, Milliman performed a parallel valuation comparing the principal valuation results of the July 1, 2003 valuation as reported by the System’s prior actuary, Gabriel, Roeder, Smith & Company (GRS), with the results we would have obtained based on the demographic data sent to us by the Retirement Systems and the actuarial assumptions described in GRS’ valuation report. We have included both sets of July 1, 2003 valuation results in the comparison tables.

Actuary's Comments

The employer contribution rate for the System is 10.70%, including a 0.20% contribution for group life benefits and a 0.20% contribution for accidental death benefits (duty-related). The 10.30% net contribution is used to pay 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.

The July 1, 2004 valuation develops the contribution rates for FY 2006. The actuarially determined employer normal cost contribution rate increased from 7.05% for FY 2005 to 7.19% for FY 2006. As a result, the net contribution towards the unfunded actuarial liability decreased from 3.25% to 3.11%. The unfunded actuarial liability increased from $233 million to $368 million. The net result is that the amortization period for the unfunded actuarial liability increased from 11 years to 16 years. There were several reasons for this increase:

- The plan granted a 1.6% COLA effective July 1, 2004. This increased the unfunded actuarial liability by $20.2 million, and the amortization period by 1.2 years. Because future COLAs are not reflected in the System's valuation assumptions, every time an ad hoc COLA is granted, the unfunded actuarial liability is increased. This increases the amortization period.

- The plan experienced an actuarial loss on plan liabilities. The loss consisted of a gain on participant salaries offset by losses due to demographic experience such as terminations, retirements, incidences of disability and deaths being different from expected. The loss increased the unfunded actuarial liability by $31.9 million, and the amortization period by 1.6 years. The loss represents 1.1% of the actuarial liability. This type of activity is normal in the course of plan experience. The plan will experience actuarial gains and losses over time because we cannot predict exactly how people will behave. When a plan experiences alternating gains and losses that are small compared to the total actuarial liability, then the plan's actuarial assumptions are reasonable.

- The plan experienced an actuarial loss on plan assets. There was a loss of $68.0 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 3.6 years.

- The change in the application of actuarial mathematics as described in Milliman's parallel valuation increased the unfunded actuarial liability by $25.6 million and the amortization period by 1.3 years.

- Other factors, such as the inclusion of rehired retiree payroll and the expected one-year decrease in the amortization period due to the passing of time, decreased the amortization period by 2.6 years.

As of the July 1, 2004 actuarial valuation, the plan's unfunded actuarial liability was **$368 million.** This is an increase from last year's unfunded actuarial liability of $233 million.

As part of this valuation, we tested the adequacy of the 0.40% contribution rate to support the group life and accidental death funds (0.20% to each fund). There are separate funds for these benefits with assets at market value of $20.5 million and $24.2 million respectively as of July 1, 2004. The contribution rates are reasonable and will adequately fund the expected benefit payments for FY 2006.

The balance of this section presents summarized information regarding plan trends, details on the 2003/2004 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, 2004. 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 tempers the volatile fluctuations in market value.

The actuarial value of assets as of July 1, 2004 is $2.3 million less than the market value. This represents an accumulation of unrecognized investment gains as a result of favorable asset returns over the last two years and the declining balance of the unrecognized losses from the plan years ending 2002 and 2001. Last year, the actuarial value of assets contained deferred losses of $50.2 million. The elimination of the deferred losses is due to the investment performance on the market value of assets being greater than the assumed rate.

For the plan year ending July 1, 2004, the plan earned 8.6%[1] on a market value basis and 4.5% on an actuarial value basis. These returns resulted in an actuarial gain to the fund of $32 million on a market value basis and an actuarial loss to the fund of $68 million on an actuarial value basis. 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, 2003 value	$ 2,420,469[2]	$ 2,511,369
Employer Contributions	84,873	84,873
Member Contributions	56,602	56,602
Transfer of Assets	2,521	2,521
Benefit Payments and Expenses	(152,307)	(152,307)
Expected Investment Earnings (7.25%)	175,183	181,773
Expected Value July 1, 2004	2,587,341	2,684,831
Investment Gain (Loss)	31,828	(67,996)
July 1, 2004 value	$ 2,619,169	$ 2,616,835

[1] Differs from the CAFR report rate of return because assumes cash-flow occurs mid-year.
[2] Beginning of year value adjusted to match July 1, 2004 CAFR.

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. During the plan year ending in 2004, the plan experienced an actuarial loss on liabilities of **$31.9 million,** which is 1.1% of the total actuarial liability.

Liabilities (In Millions)	Total Value of Future Benefits	Actuarial Liability
July 1, 2003 (GRS results)	$ 3,599	$ 2,745
July 1, 2003 (Milliman Results from Parallel Valuation)	$ 3,638	$ 2,770
July 1, 2004	$ 3,863	$ 2,985

UNFUNDED LIABILITIES AND FUNDING RATIOS

The difference between the actuarial liability and the actuarial value of assets is the unfunded actuarial liability. Here we show the July 1, 2003 and July 1, 2004 unfunded actuarial liability/(surplus) amounts, as well as the corresponding funding ratios for each (assets divided by liabilities).

In Millions	Unfunded Actuarial Liability
July 1, 2003 (GRS results) net unfunded / (surplus)	$ 233
Funding ratio	91.5%
July 1, 2003 (Milliman results from parallel valuation) net unfunded / (surplus)	$ 259
Funding ratio	90.7%
July 1, 2004 net unfunded / (surplus)	$ 368
Funding ratio	87.7%

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, 2003 and 2004.

There was an overall increase in membership during the year.

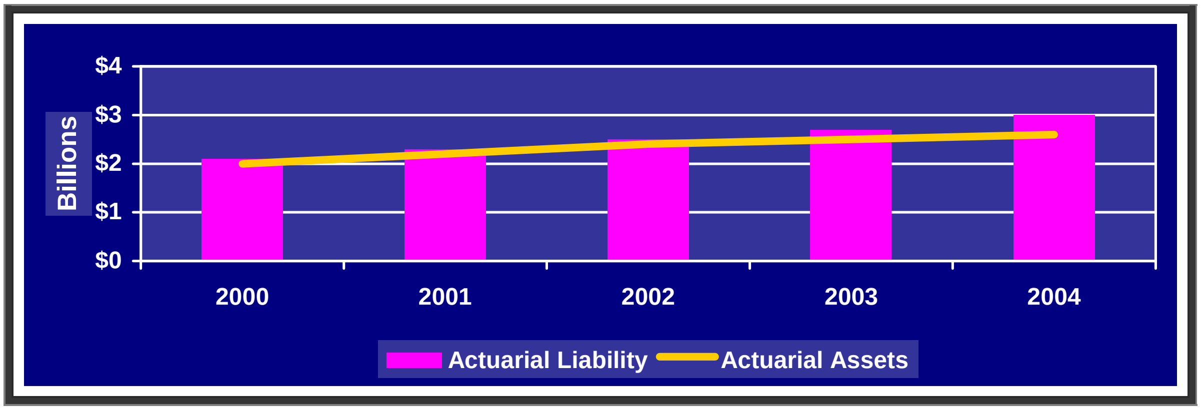
	7/1/2004	7/1/2003	Change
Active Members	23,734	23,871	(0.6%)
Inactive Members	9,597	8,965	7.0%
Retired Members and Beneficiaries	9,056	8,427	7.5%
Total Members	42,387	41,263	2.7%

Trends

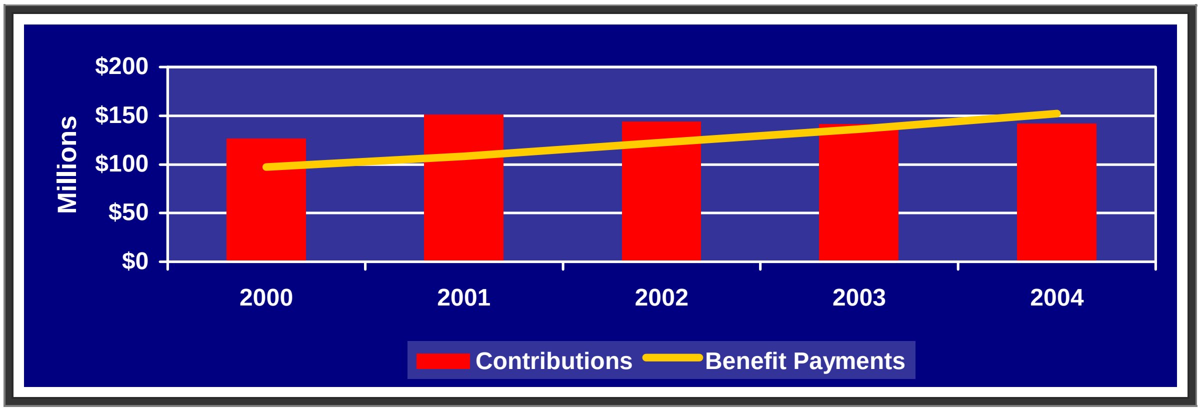
To truly understand the financial condition of the pension plan, a review of the prior year's funded status is helpful in seeing the big picture and general trend evolving. Below, we present three charts that present trend information from past years through 2004.

The first graph shows an increase in both actuarial liability and actuarial assets. Since the gap between actuarial liability and actuarial assets increases every year, the unfunded actuarial liability increases. The second graph shows that contributions have been relatively level for the past few years, while the benefit payment level has been increasing. The third graph shows that the funding period for unfunded actuarial liability increased in 2004 after a decrease in 2003. The funding period will increase if the plan experiences actuarial losses or if an ad hoc COLA is granted and the contribution rate is not changed.

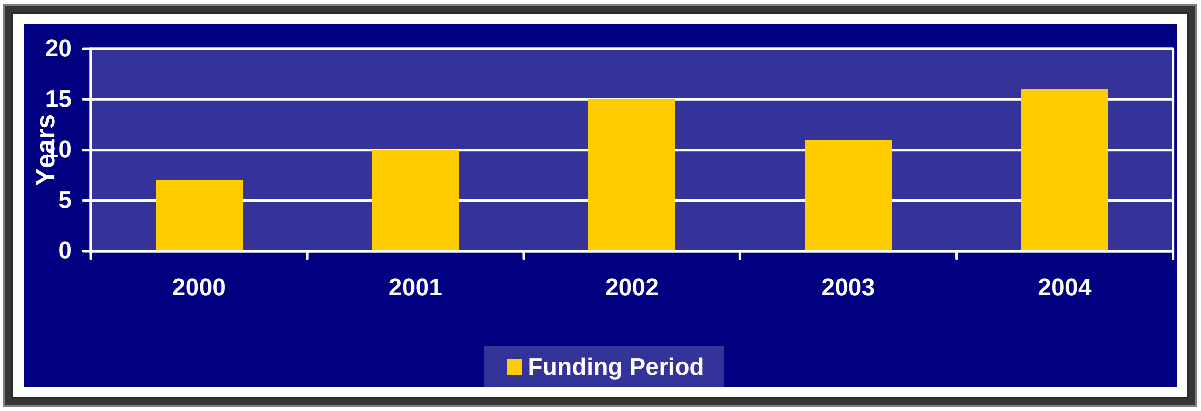
Assets and Liabilities



Cash Flows



Unfunded Actuarial Liability Funding Period



PRINCIPAL RESULTS	July 1, 2004	July 1, 2003 (Milliman Method)	July 1, 2003 (GRS Method)
Membership			
Number of:			
Active Members	23,734	23,872	23,871
Retirees and Beneficiaries	9,056	8,377	8,427
Inactive Members	9,597	8,965	8,965
Total	42,387	41,214	41,263
Payroll	$ 822 million	$ 810 million	$ 800 million
Statutory Contribution Rate (Including Group Insurance)			
Member	6.50%	6.50%	6.50%
Employer			
Retirement Contribution	10.30%	10.30%	10.30%
Group Life Contribution	0.20%	0.20%	0.20%
Accidental Death Contribution	0.20%	0.20%	0.20%
Total	10.70%	10.70%	10.70%
Assets			
Market Value	$ 2.62 billion	$ 2.46 billion	$ 2.46 billion
Actuarial Value	$ 2.62 billion	$ 2.51 billion	$ 2.51 billion
Return on Market Value	8.6%	9.8%	9.8%
Return on Actuarial Value	4.5%	6.2%	6.2%
Ratio of Actuarial to Market Value	99.9%	102.0%	102.0%
Actuarial Information			
Employer Normal Cost %	7.19%	7.18%	7.05%
Unfunded Actuarial Liability (UAL)	$ 368 million	$ 259 million	$ 233 million
Funded Ratio	87.7%	90.7%	91.5%
Funding Period	16 years	12 years	11 years
Change in Unfunded Actuarial Liability (in millions)			
Beginning of Year Unfunded Actuarial Liability	$ 233.5		$ 176.8
Interest on Unfunded Actuarial Liability	16.9		12.8
Amortization Payment	(28.4)		(14.1)
Asset Experience	68.0		13.1
Salary Experience	(19.0)		(32.0)
Other Liability Experience	50.9		(19.7)
COLA	20.2		27.3
Benefit Changes	0.0		0.0
Assumption/Method Changes	25.6		69.3
Total Increase / (Decrease)	134.2		56.7
End of Year Unfunded Actuarial Liability	$ 367.7		$ 233.5

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 2004 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, 2004 valuation.

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

	PLAN YEAR ENDING JUNE 30,			
Item	2004	2003	2002	2001
1. Market Value of Assets at Beginning of Year	$ 2,420,469[3]	$2,236,350	$2,197,795	$2,009,860
2. Net External Cash Flow During the Year	(8,311)	5,063	21,667	42,321
3. Market Value of Assets at End of Year	2,619,169	2,461,222	2,236,350	2,197,795
4. Actual Investment Income During the Year Based on Market Value:	207,011	219,809	16,888	145,614
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)	175,484	162,135	159,340	145,715
b. Net External Cash Flow: (5) x .5 x (2)	(301)	184	786	1,534
c. Total: (a) + (b)	175,183	162,319	160,126	147,249
7. Excess Investment Income for Year: (4) – (6)	$ 31,828	$ 57,490	($ 143,238)	($ 1,635)
All dollar amounts in thousands				

[3] Beginning of year value adjusted to match July 1, 2004 CAFR.

TABLE II-2
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

Item	Valuation as of July 1, 2004
1. Excess (Shortfall) of Investment Income for Current Year and Previous Three Years	
a. Current Year	$ 31,828
b. Current Year - 1	57,490
c. Current Year - 2	(143,238)
d. Current Year - 3	(1,635)
2. Deferral of Excess (Shortfall) of Investment Income for:	
a. Current Year (80% Deferral)	$ 25,462
b. Current Year - 1 (60% Deferral)	34,494
c. Current Year - 2 (40% Deferral)	(57,295)
d. Current Year - 3 (20% Deferral)	(327)
e. Total Deferred for Year	$ 2,334
3. Market Value of Plan Assets, End of Year	$ 2,619,169
4. Preliminary Actuarial Value of Plan Assets, End of Year (Item 3 – Item 2.e.)	$ 2,616,835
5. Actuarial Value of Assets Corridor	
a. 80% of Market Value of Assets, End of Year	$ 2,095,335
b. 120% of Market Value of Assets, End of Year	$ 3,143,003
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.	$ 2,616,835

Section III

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. It receives contributions from employees of 6.50% of pay. It receives contributions from the employer of 10.30% of pay, after subtracting the 0.20% of pay contribution for pre-retirement death and 0.20% of pay contribution for accidental death.

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. The Employer's intent is to make 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, 2004 actuarial valuation results compared to similar results from the prior valuation. An employer contribution rate of 10.70% including the 0.20% contribution for pre-retirement death and the 0.20% contribution for accidental death is sufficient to fund the unfunded actuarial liability over 16 years. Changes from last year include:

- The number of active members decreased 0.6% and payroll of active members increased by 2.8%.

- The number of retirees increased 7.5%. Retirees received a 1.6% COLA effective July 1, 2004. Including the COLA, the total benefit amount for retirees increased 10.7%

- The funding period for the unfunded actuarial liability increased from 11 years to 16 years.

TABLE III-1
VALUATION BALANCE SHEET

	JULY 1, 2004	JULY 1, 2003
Assets		
1. Current Assets (Actuarial Value)		
a. Employee Annuity Savings Fund	$ 548,699	$ 516,313
b. Employer Annuity Accumulation Fund	2,068,136	1,995,056
c. Total Current Assets	$ 2,616,835	$ 2,511,369
2. Present Value of Future Member Contributions	$ 425,174	$ 416,563
3. Present Value of Future Employer Contributions		
a. Normal Cost Contributions	$ 453,461	$ 437,421
b. Accrued Liability Contributions	367,749	233,480
c. Total Future Employer Contributions	$ 821,210	$ 670,901
4. Total Assets	$ 3,863,219	$ 3,598,833
Liabilities		
1. Employee Annuity Savings Fund		
a. Past Member Contributions	$ 548,699	$ 516,313
b. Present Value of Future Member Contributions	425,174	416,563
c. Total Contributions to Employee Annuity Savings Fund	$ 973,873	$ 932,876
2. Employer Annuity Accumulation Fund		
a. Benefits Currently in Payment	$ 1,415,627	$ 1,265,173
b. Benefits to be Paid to Current Active Members	1,473,719	1,400,784
c. Total Benefits Payable from Employer Annuity Accumulation Fund	$ 2,889,346	$ 2,665,957
3. Total Liabilities	$ 3,863,219	$ 3,598,833

All dollar amounts in thousands.

TABLE III-2
SUMMARY OF ACTUARIAL VALUATION RESULTS

	JULY 1, 2004	JULY 1,2003 (MILLIMAN METHOD)	JULY 1, 2003 (GRS METHOD)
Number of Active Members and Compensation			
Active Members			
Number	23,734	23,872	23,871
Compensation	$ 822,448	$ 810,026	$ 800,394
Rehired Retired Members			
Number	1,038	N/A	N/A
Compensation	$ 31,773	N/A	N/A
Number of Persons Receiving Benefits and Benefits			
Total Number Receiving Benefits	9,056	8,377	8,427
Total Amount of Benefits	$ 146,348	$ 132,234	$ 133,015
Trust Fund Assets			
Market Value	$ 2,619,169	$ 2,420,469	$ 2,420,469
Actuarial Value	$ 2,616,835	$ 2,511,369	$ 2,511,369
Unfunded Actuarial liability (UAL)			
Amount	$ 367,749	$ 259,121	$ 233,480
Remaining Years in Amortization Period	16	12	11
Required Contribution as a Percent of Compensation			
Normal Cost Contribution	7.19%	7.18%	7.05%
UAAL Contribution	3.11%	3.12%	3.25%
Pre-retirement Death Contribution	0.20%	0.20%	0.20%
Accidental Death Contribution	0.20%	0.20%	0.20%
Total	10.70%	10.70%	10.70%

All dollar amounts in thousands.

TABLE III-3
DETERMINATION AND AMORTIZATION OF UNFUNDED ACTUARIAL LIABILITY

	July 1, 2004	July 1, 2003 (Milliman Method)	July 1, 2003 (GRS Method)
1. Actuarial Present Value of Future Benefits			
a. Present Retired Members and Beneficiaries	$ 1,415,627	$ 1,258,000	$ 1,265,173
b. Present Active and Inactive Members	2,447,592	2,379,466	2,333,360
c. Total Actuarial Present Value	$ 3,863,219	$ 3,637,466	$ 3,598,833
2. Present Value of Future Normal Contributions			
a. Employees	$ 425,174	$ 419,472	$ 416,563
b. Employer	453,461	447,505	437,421
c. Total Future Normal Contributions	$ 878,635	$ 866,976	$ 853,984
3. Actuarial liability	$ 2,984,584	$ 2,770,490	$ 2,744,849
4. Current Actuarial Value of Assets	$ 2,616,835	$ 2,511,369	$ 2,511,369
5. Unfunded Actuarial liability	$ 367,749	$ 259,121	$ 233,480
6. Unfunded Actuarial Liability Rate	3.11%	3.12%	3.25%
7. Unfunded Actuarial Liability Liquidation Period	16 years	12 years	11 years

All dollar amounts are in thousands.

Section IV

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 funding 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, 2004 are exhibited in Table IV-1. Table IV-2 shows the schedule of funding progress as required by GASB Statement #25.

TABLE IV-1
ACCOUNTING STATEMENT INFORMATION

	July 1, 2004	July 1, 2003
1. Actuarial Liabilities for Retirees and Beneficiaries Currently Receiving Benefits and Terminated Employees Not Yet Receiving Benefits.	$ 1,518,381	$ 1,355,341
2. Actuarial Liabilities for Current Employees	1,466,203	1,389,508
3. Total Actuarial Liability (1 + 2)	$ 2,984,584	$ 2,744,849
4. Net Actuarial Assets Available for Benefits	$ 2,616,835	$ 2,511,369
5. Unfunded Actuarial Liability (3 – 4)	$ 367,749	$ 233,480

All dollar amounts in thousands.

TABLE IV-2

INFORMATION FOR COMPREHENSIVE ANNUAL FINANCIAL REPORT

Member and Payroll Information

Actuarial Valuation Date	Number of Employers	Number of Active Members	Annual Payroll (in thousands)	Annual Average Pay	Percentage Increase in Average Pay
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%
July 1, 1998	301	22,883	606,426	26,501	2.83%
July 1, 1997	297	21,829	562,553	25,771	4.31%
July 1, 1996	291	20,461	505,516	24,706	2.20%
July 1, 1995	280	19,657	475,176	24,173	5.11%

Schedule of Retirants Added to and Removed from Rolls

	Added to Rolls		Removed from Rolls		Rolls End of the Year			
Year Ended	Number	Annual Allowances	Number Payroll	Annual Allowances	Number	Annual Allowances	%Increase in Annual Allowances	Average Annual Allowances
July 1, 2004	894	$ 16,256	265	$ 2,923	9,056	$ 146,348	10.8%	$ 16,114
July 1, 2003	947	18,614	226	2,733	8,427	133,015	13.6%	15,784
July 1, 2002	956	17,378	220	2,639	7,706	117,134	14.4%	15,200
July 1, 2001	989	17,235	341	3,986	6,970	102,395	14.9%	14,691
July 1, 2000	549	9,979	152	1,581	6,322	89,146	10.4%	14,101
July 1, 1999	606	8,490	238	1,731	5,925	80,748	9.1%	13,628
July 1, 1998	492	6,924	154	1,085	5,557	73,989	8.6%	13,315
July 1, 1997	533	9,024	176	759	5,219	68,150	13.8%	13,058
July 1, 1996	415	5,866	100	791	4,862	59,885	9.3%	12,317
July 1, 1995	504	9,404	90	768	4,547	54,810	18.7%	12,054

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, 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%
July 1, 1998	1,684,641	1,733,578	97.2%	48,937	606,426	8.1%
July 1, 1997	1,512,390	1,570,816	96.3%	58,426	562,553	10.4%
July 1, 1996	1,367,549	1,427,785	95.8%	60,236	505,516	11.9%
July 1, 1995	1,236,610	1,299,119	95.2%	62,509	475,176	13.2%

Solvency Test

Valuation Date	Active Member Contributions	Retirants & Beneficiaries	Active Members (Employer Funded Portion)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets		
					(1)	(2)	(3)
July 1, 2004	$ 548,699	$ 1,415,627	$ 1,020,258	$ 2,616,835	100%	100%	64.0%
July 1, 2003	516,313	1,265,173	963,363	2,511,369	100%	100%	75.8%
July 1, 2002	492,178	1,136,998	898,700	2,351,100	100%	100%	80.3%
July 1, 2001	464,217	977,769	882,271	2,197,982	100%	100%	85.7%
July 1, 2000	427,449	844,631	823,911	2,008,554	100%	100%	89.4%
July 1, 1999	389,456	783,042	725,739	1,844,517	100%	100%	92.6%
July 1, 1998	352,424	702,155	678,999	1,684,641	100%	100%	92.8%
July 1, 1997	314,217	645,356	611,243	1,512,390	100%	100%	90.4%
July 1, 1996	284,655	565,405	577,726	1,367,549	100%	100%	89.6%
July 1, 1995	251,255	519,795	528,069	1,236,610	100%	100%	88.2%

All dollar amounts in thousands

RETIRED MEMBERS AND BENEFICIARIES AS OF JULY 1, 2004		
Group	**Number**	**Annual Retirement Allowances**
Service Retirements:		
Employees:		
Men	5,823	$ 104,559,617
Women	948	10,771,104
Total	6,771	$ 115,330,721
Disability Retirements:		
Employees:		
Men	1,083	$ 18,520,465
Women	273	3,283,344
Total	1,356	$ 21,803,809
Beneficiaries of Deceased Retired Members and Active Members		
Men	29	$ 235,992
Women	900	8,977,463
Total	929	$ 9,213,455
Grand Total	9,056	$ 146,347,985

All dollar amounts in thousands

Section V

Membership Information

TABLE V-1
NUMBER OF ANNUAL RETIREMENT ALLOWANCES OF BENEFIT RECIPIENTS AS OF JULY 1, 2004

		NUMBER	ANNUAL RETIREMENT ALLOWANCES
Retirement			
a.	Service Retirement		
	Life Annuity	3,640	$ 57,861,237
	100% J & S	243	3,145,849
	100% Pop-up	566	7,808,550
	50% J & S	213	4,553,879
	50% Pop-up	721	15,522,443
	Level Income	1,388	26,438,763
	Total	6,771	$115,330,721
b.	Disability Retirement		
	Life Annuity	1,078	$17,977,176
	100% J & S	69	756,958
	100% Pop-up	84	968,393
	50% J & S	42	593,496
	50% Pop-up	83	1,507,786
	Total	1,356	$ 21,803,809
Beneficiaries of Deceased Retired Members and Active Members			
c.	Total	929	$ 9,213,455
Total			
GRAND TOTAL		9,056	$ 146,347,985

TABLE V-2

DISTRIBUTION OF ACTIVE MEMBERS AND AVERAGE COMPENSATION BY AGE GROUPS AND SERVICE GROUPS AS OF JULY 1, 2004

YEARS OF SERVICE

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 & Over	Total
Under 25	1,253	5							1,258
	$ 26,172	$ 28,718							$ 26,182
25 – 29	2,592	663							3,255
	$ 29,557	$ 32,741							$ 30,206
30 - 34	1,904	1,903	482	7					4,296
	$ 30,140	$ 34,240	$ 37,942	$ 37,284					$ 32,843
35 - 39	1,299	1,089	1,197	452	6				4,043
	$ 29,589	$ 33,694	$ 38,878	$ 42,455	$ 46,283				$ 34,908
40 - 44	996	706	648	1,043	295	9			3,697
	$ 29,855	$ 33,051	$ 38,220	$ 41,914	$ 48,458	$ 49,009			$ 36,864
45 - 49	781	608	464	548	423	146	2		2,972
	$ 30,911	$ 33,203	$ 38,976	$ 39,522	$ 48,599	$ 53,330	$ 78,264		$ 37,878
50 - 54	575	475	375	362	203	151	36	2	2,179
	$ 32,753	$ 34,298	$ 38,084	$ 39,469	$ 44,893	$ 54,595	$ 63,320	$ 92,305	$ 38,327
55 - 59	414	284	239	260	103	62	41	6	1,409
	$ 32,022	$ 33,040	$ 37,382	$ 39,451	$ 44,886	$ 49,197	$ 60,805	$ 72,831	$ 37,215
60 - 64	136	117	87	90	46	17	7	4	504
	$ 34,500	$ 35,286	$ 36,242	$ 40,468	$ 43,793	$ 49,952	$ 48,440	$ 54,964	$ 37,774
65 & Over	33	21	25	17	16	4	1	4	121
	$ 37,578	$ 40,225	$ 37,905	$ 41,536	$ 51,945	$ 53,847	$ 57,414	$ 68,259	$ 42,277
TOTAL	9,983	5,871	3,517	2,779	1,092	389	87	16	23,734
	$ 29,763	$ 33,703	$ 38,383	$ 40,920	$ 47,356	$ 52,920	$ 61,213	$ 69,656	$ 34,653

	Prior Year	Current Year
Average Age	39.03 years	39.22 years
Average Service	8.07 years	8.23 years
Average Pay	$ 33,530	$ 34,653
Percent Female	25.3%	25.0%

TABLE V-3
DISTRIBUTION OF PARTICIPANTS RECEIVING BENEFITS

SERVICE RETIREMENT

Current Age Group	Number	Total Annual Benefit	Average Annual Benefit
Under 50	344	$ 7,323,194	$ 21,288
50 - 54	796	18,240,623	22,915
50 - 59	1,410	28,600,410	20,284
60 - 64	1,344	21,757,148	16,188
65 - 69	1,193	16,299,702	13,663
70 - 74	831	11,357,645	13,667
75 - 79	474	6,754,867	14,251
80 & Over	379	4,997,132	13,185
Total	6,771	$ 115,330,721	$ 17,033

DISABILITY RETIREMENT

Current Age Group	Number	Total Annual Benefit	Average Annual Benefit
Under 50	530	$ 9,571,448	$ 18,059
50 - 54	301	4,909,380	16,310
50 - 59	258	3,648,656	14,142
60 - 64	135	1,823,901	13,510
65 - 69	61	946,968	15,524
70 - 74	37	498,566	13,475
75 - 79	22	291,300	13,241
80 & Over	12	113,590	9,466
Total	1,356	$ 21,803,809	$16,080

BENEFICIARIES

Current Age Group	Number	Total Annual Benefit	Average Annual Benefit
Under 50	120	$1,121,021	$ 9,342
50 - 54	53	595,207	11,230
50 - 59	81	825,923	10,197
60 - 64	94	1,001,147	10,651
65 - 69	120	1,358,633	11,322
70 - 74	127	1,309,530	10,311
75 - 79	133	1,207,820	9,081
80 & Over	201	1,794,174	8,926
Total	929	$ 9,213,455	$ 9,918

Appendix A

Actuarial Assumptions and Methods

1. Investment Return to be Earned by Fund

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:

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 when first become eligible for unreduced service retirement.

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:

	HEALTHY		DISABLED
Age	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.

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

   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. We completed a separate valuation of the accidental (duty-related) death benefit.

   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 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**

    None assumed.

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. Changes from Prior Valuation

There was a change in the application of the actuarial calculation methods as a result of the change in actuaries. The change is discussed in the parallel valuation prepared as of July 1, 2003.

14. Adoption Date

The current actuarial assumptions and methods were adopted by the State Budget and Control Board on April 20, 2004.

Appendix B

Summary of Plan Provisions

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, 1997, compensation for benefit and contribution purposes is limited. The 2004 limit is $205,000, and this limit will be increased in the future as cost-of-living increases occur.

5. Normal Retirement

a. Eligibility — Attainment of age 55, or 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 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 of retirement benefit that would have been payable assuming continued employment 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. Active Group Life Insurance only payable to those with at least 1 year of creditable service, unless death is job related, and employer participates.

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

6.5% of compensation

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

Granted upon approval of State Budget and Control Board if funding objectives are met. The amount is the increase in the calendar year CPI not in excess of 4%.

14. Changes from Prior Valuation

None.