South Carolina Retirement System (SCRS)

Actuarial Valuation as of July 1, 2008

Milliman

March 2009

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APPENDICES

Milliman

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 System
P.O. Box 11960
Columbia, SC 29211-1960

Dear Members of the Board:

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

Applicable Laws
The laws governing the operation of the South Carolina Retirement System provide that actuarial valuations of the assets and liabilities of the System shall be made annually. We have conducted our annual actuarial valuation of the South Carolina Retirement System as of July 1, 2008 and the results of the valuation are contained in the following report.

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

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

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

Assumptions
Actuarial assumptions are necessary to estimate the future economic and demographic experience of the System. We performed an experience study to review how the System's experience compared with that predicted by the actuarial assumptions for the period of July 1, 2002 through June 30, 2007. As a result, we recommended changes to a number of actuarial assumptions. The recommend assumptions were adopted by the Board on June 17, 2008 to apply for the July 1, 2008 valuation. The assumptions are summarized in Appendix A.

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

This report presents the results of the July 1, 2008 actuarial valuation of the South Carolina Retirement System (SCRS). The primary purposes of performing the annual actuarial valuation are to:

1) Determine whether the **contributions** to be paid by the State in Fiscal Year 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 current employer contribution rate for the System is 9.39%, including a 0.15% contribution for the Group Life Fund. The 9.24% net employer contribution is used to pay the employer's portion of the normal cost and to amortize the unfunded actuarial liability (UAL). The results of the actuarial valuation of the Group Life Insurance Fund will be transmitted in a separate report.

The actuarially determined employer normal cost contribution rate decreased from 4.12% for FY 2009 to 3.36% for FY 2010. The net contribution towards the UAL increased from 4.94% to 5.88%. The unfunded actuarial liability increased from $10.2 billion to $11.0 billion. The resulting amortization period remained level at 29 years. We note the following:

- The UAL grew by $741 million due to interest and decreased by $580 million due to the amortization payment.

- The plan granted a 2.0% COLA effective July 1, 2008. At the time of the July 1, 2007 valuation, only a 1.0% COLA was guaranteed by the System (subsequently, Act 311 guarantees annual COLAs of up to 2.0%). As a result, the portion of the COLA in excess of the 1.0% guarantee in effect at the time of the July 1, 2007 valuation represents an actuarial loss and increased the UAL by $205 million and increased the amortization period by 0.9 years.

- The plan experienced an actuarial loss on plan assets of $182 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 0.8 years. Additionally, the asset smoothing period was prospectively increased to 10 years. The change applies to unexpected market value gains and losses for years beginning after June 30, 2007. The deferred gains and losses on assets that occurred prior to July 1, 2007 continue to be recognized over 5 years. The change in the asset valuation method decreased the UAL by $245 million and the amortization period by 1.2 years.

- The plan experienced a net actuarial loss of $462 million on plan liabilities due to non-investment related experience. Salary experience accounted for $160 million of the loss. Absent, the salary loss, the plan experienced a net actuarial loss related to other non-investment experience of $302 million. The most significant sources of this loss were termination and retirement experience different from assumed. These two sources accounted for $330 million of the loss. Remaining factors, such as different than assumed mortality and disability experience accounted for a gain of $28 million. The $462 million loss represents about 1.3% of the actuarial liability and increased the amortization period by 2.0 years. This type of activity is normal in the course of plan experience. The plan will experience actuarial gains and losses over time because future experience will not exactly match the assumptions.

- Milliman performed an experience study of the valuation assumptions. As a result, several actuarial assumptions were updated, chief among them the expected rate of return on plan assets. In addition, Act 311 increases the guaranteed COLA from 1% to 2%. The combined effect of the changes in assumptions (other than the change in the asset smoothing method) and the increase in the guaranteed COLA was a decrease of $26 million in the UAL and 0.7 years in the amortization period. This decrease in the amortization period is primarily due to the decrease in the normal cost under the new assumptions.

- Finally, other factors, such as greater than expected increases in payroll and changes in the amount of contributions available to amortize the UAL, resulted in a 1.2 year decrease in the amortization period 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.

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 years prior to July 1, 2007) of the difference between the expected investment return and actual investment return each year for 10 years (5 for years 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 $1,575 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%[1] on a market value basis and 6.7% on an actuarial value basis before taking into account the change in the asset smoothing period (7.7% after the change in method). These returns resulted in an actuarial loss to the fund of $2,447 million on a market value basis and an actuarial loss to the fund of $182 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 $245 million.

[1] May differ from the CAFR report rate of return because assumes cash flow occurs mid-year.

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	$ 24,412,197	$ 23,541,438
Value of TERI Accounts as July 1, 2007	641,750	641,750
Employer Contributions	762,666	762,666
Member Contributions	540,845	540,845
Transfer of Assets	(2,065)	(2,065)
Benefit Payments	(1,932,919)	(1,932,919)
Net TERI Cash Flow	(89,839)	(89,839)
Expected Investment Earnings (7.25%)	1,790,263	1,727,134
Expected Value as of July 1, 2008 (with TERI)	$ 26,122,898	$ 25,189,010
Value of TERI Accounts as of July 1, 2008	(551,911)	(551,911)
Expected Value as of July 1, 2008 (less TERI)	25,570,987	24,637,099
Investment Gain (Loss)	(2,446,593)	(182,080)
Change in Asset Smoothing Method	NA	244,659
July 1, 2008 Actual Value	$ 23,124,394	$ 24,699,678

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 (old assumptions and without Act 311) and the new basis (new assumptions with Act 311).

Liabilities (In Millions)	Total Value of Future Benefits	Actuarial Liability
July 1, 2007	$ 39,371	$ 33,767
July 1, 2008 (Old Basis)	$ 41,629	$ 35,689
July 1, 2008 (New Basis)	$ 40,967	$ 35,663

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

In Millions	Unfunded Actuarial Liability	Funded Ratio
July 1, 2007	$ 10,225	69.7%
July 1, 2008	$ 10,964	69.3%

MEMBERSHIP

There are four types of plan members: (i) current active members; (ii) inactive members who retain a right to either a refund of contributions or a deferred vested benefit; (iii) TERI participants; and (iv) retired members and beneficiaries in pay status. In Section V we present details on membership statistics. Below, we compare totals in each group between July 1, 2007 and 2008.

There was an overall increase in membership during the year.

	7/1/2008	7/1/2007	Change
Active Members	192,820	187,968	2.6%
Inactive Members	155,038	153,477	1.0%
TERI Participants	7,506	8,753	(14.2)%
Retired Members and Beneficiaries	97,016	92,144	5.3%
Total Members	452,380	442,342	2.3%

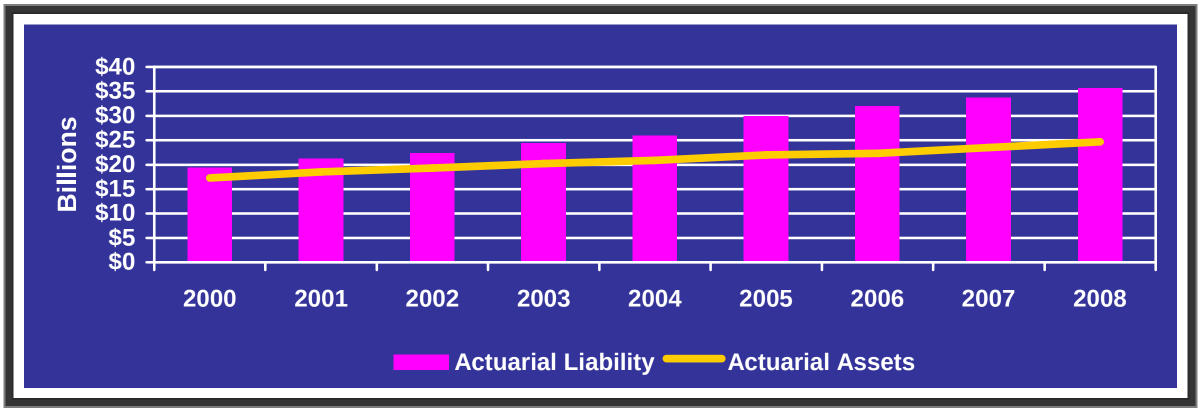
Trends

To 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 2001 through 2008.

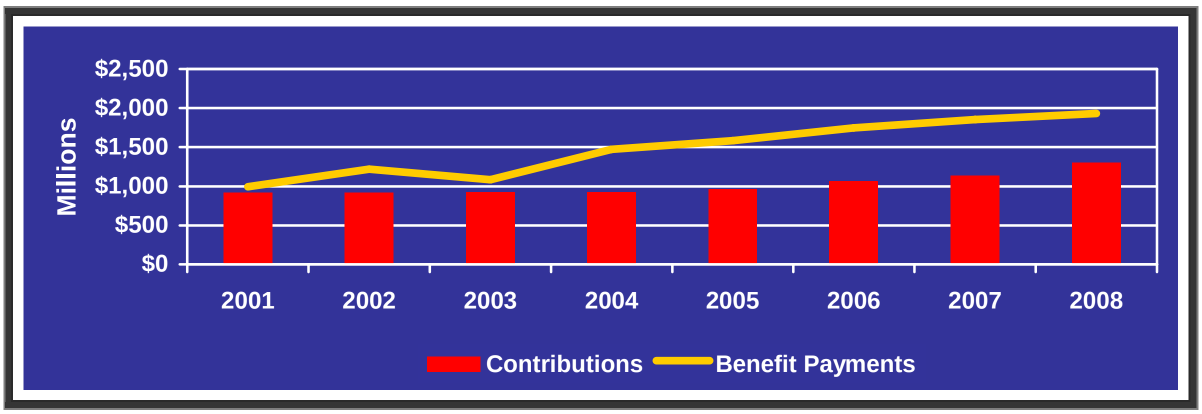
The first graph shows the growth in both actuarial liability and actuarial assets. The gap between the actuarial liability and the actuarial value of assets increases in each of these years resulting in increases in the UAL. The UAL ranges from $2.2 billion as of July 1, 2000 to nearly 11 billion as of July 1, 2008.

The second graph shows that contributions had been relatively level at around $925 million per year from the year ending June 30, 2001 through the year ending June 30, 2004. Subsequently contributions have increased rapidly from $963 million in the year ending June 30, 2005 to $1,304 million for the year ending June 30, 2008. Over the same period, benefit payments have generally increased each year, growing from $995 million in the year ending June 30, 2001 to over $1.9 billion in the year ending June 30, 2008. As of the current valuation, the negative cash flow represents less than 3% of the market value of assets. This degree of negative cash flow is common to mature retirement systems and we would expect the negative cash flow as a percent of market value of assets to slightly increase over time. The third graph shows that trend in the amortization period for unfunded actuarial liability has increased from 18 to 30 years over the six-year period through 2006 and decreased to 29 years for 2007 and 2008.

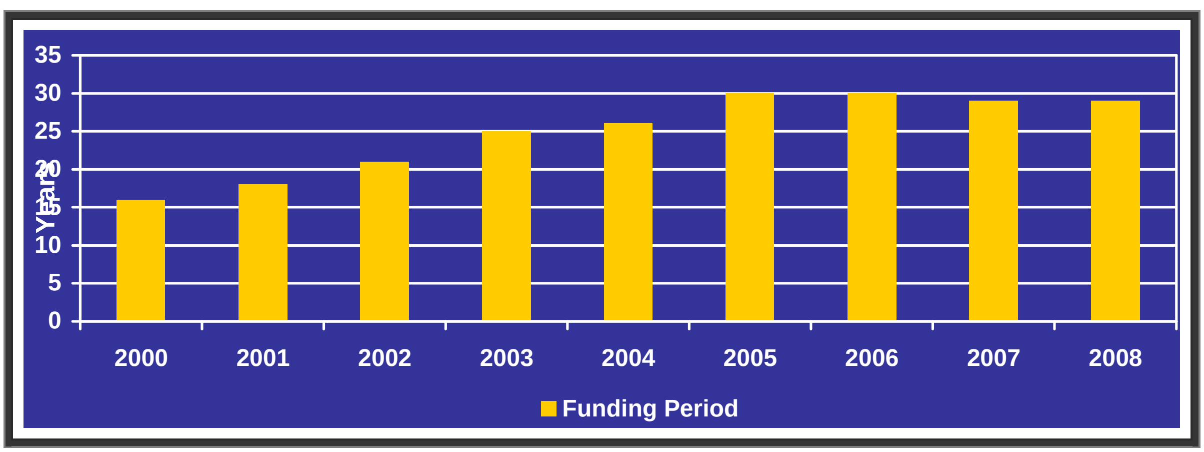
Assets and Liabilities



Cash Flows



Unfunded Actuarial Liability Amortization period



PRINCIPAL RESULTS	July 1, 2008	July 1, 2007
Membership		
Number of:		
Active Members	192,820	187,968
TERI Members	7,506	8,753
Retirees and Beneficiaries	97,016	92,144
Inactive Members	155,038	153,477
Total	452,380	442,342
Payroll (excludes ORP & TERI members)	$ 7.6 billion	$ 7.1 billion
Statutory Contribution Rate (Including Group Insurance)		
Member	6.50%	6.50%
Employer		
Retirement Contribution	9.24%	9.06%
Group Life Insurance Contribution	0.15%	0.15%
Total	9.39%	9.21%
Assets		
Market Value	$ 23.1 billion	$ 24.4 billion
Actuarial Value	$ 24.7 billion	$ 23.5 billion
Return on Market Value	(2.7%)	13.6%
Return on Actuarial Value	7.7%	8.9%
Ratio of Actuarial to Market Value	106.8%	96.4%
Actuarial Information		
Employer Normal Cost %	3.36%	4.12%
Unfunded Actuarial Liability (UAL)	$ 11.0 billion	$ 10.2 billion
Funded Ratio	69.3%	69.7%
Amortization Period	29 years	29 years
Change in Unfunded Actuarial Liability (in millions)		
Beginning of Year Unfunded Actuarial Liability	$ 10,225	$ 9,725
Interest on Unfunded Actuarial Liability	741	705
Amortization Payment	(580)	(415)
Asset Experience (w/Method Change)	(63)	(296)
Salary Experience	160	77
Other Liability Experience	302	210
COLA (in excess of 1% guarantee)	205	267
Benefit Changes	2,637	0
Assumption Changes	(2,663)	(48)
Total Increase / (Decrease)	$ 739	$ 500
End of Year Unfunded Actuarial Liability	$ 10,964	$ 10,225

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 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.

TABLE II-I
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	$ 24,412,197	$ 22,132,638	$ 21,704,133	$ 20,850,129
2. Value of TERI Accounts at Beginning of Year	641,750	670,527	N/A	N/A
3. Net External Cash Flow During the Year	(721,312)	(715,983)	(684,860)	(620,633)
4. Market Value of Assets at End of Year	23,124,394	24,412,197	22,132,638	21,704,133
5. Value of TERI Accounts at End of Year	551,911	641,750	N/A	N/A
6. Actual Investment Income During the Year Based on Market Value:	(656,330)	2,966,765	1,113,365	1,474,637
7. Assumed Earnings Rate	7.25%	7.25%	7.25%	7.25%
8. Expected Earnings for the Year				
a. Market Value of Assets, Beginning of Year: (7) x [(1) + (2)]	1,816,411	1,653,229	1,573,550	1,511,634
b. Net External Cash Flow: (7) x .5 x (3)	(26,148)	(25,954)	(24,826)	(22,498)
c. Total: (a) + (b)	1,790,263	1,627,275	1,548,724	1,489,136
9. Excess Investment Income for Year: (6) – (8)	$ (2,446,593)	$ 1,339,490	$ (435,359)	$ (14,499)

All dollar amounts in thousands

*2007 and 2008 values include earnings and cash flow attributable to TERI accounts

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	$ (2,446,593)
b. Current Year – 1	1,339,490
c. Current Year – 2	(435,359)
d. Current Year – 3	(14,499)
2. Deferral of Excess (Shortfall) of Investment Income for:	
a. Current Year (90% Deferral)*	$ (2,201,934)
b. Current Year - 1 (60% Deferral)	803,694
c. Current Year - 2 (40% Deferral)	(174,144)
d. Current Year - 3 (20% Deferral)	(2,900)
e. Total Deferred for Year	$ (1,575,284)
3. Market Value of Plan Assets, End of Year	$ 23,124,394
4. Preliminary Actuarial Value of Plan Assets, End of Year (Item 3 – Item 2.e.)	$ 24,699,678
5. Actuarial Value of Assets Corridor	
a. 80% of Market Value of Assets, End of Year	$ 18,499,515
b. 120% of Market Value of Assets, End of Year	$ 27,749,273
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.	$ 24,699,678

All dollar amounts in thousands
*Reflects the prospective implementation of the 10-year smoothing method of the assets.

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. Currently the System receives contributions from employees of 6.50% of pay and contributions from the employer of 9.24% of payroll.

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. A net employer contribution rate of 9.24% (9.39% less the 0.15% contribution to the Group Life Fund) is sufficient to amortize the unfunded actuarial liability over 29 years.

Determination and Amortization of Unfunded Liability

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

TABLE III-1
VALUATION BALANCE SHEET

	JULY 1, 2008	JULY 1, 2007
Assets		
1. Current Assets (Actuarial Value)		
a. Employee Annuity Savings Fund	$ 5,708,620	$ 5,464,756
b. Employer Annuity Accumulation Fund	18,991,058	18,076,682
c. Total Current Assets	$ 24,699,678	$ 23,541,438
2. Present Value of Future Member Contributions	$ 3,557,148	$ 3,466,636
3. Present Value of Future Employer Contributions		
a. Normal Cost Contributions	$ 1,746,068	$ 2,137,670
b. Accrued Liability Contributions [1]	10,963,741	10,225,240
c. Total Future Employer Contributions	$ 12,709,809	$ 12,362,910
4. Total Assets	$ 40,966,635	$ 39,370,984
Liabilities		
1. Employee Annuity Savings Fund		
a. Past Member Contributions	$ 5,708,620	$ 5,464,756
b. Present Value of Future Member Contributions [2]	$ 3,557,148	$ 3,624,231
c. Total Contributions to Employee Annuity Savings Fund	$ 9,265,768	$ 9,088,987
2. Employer Annuity Accumulation Fund		
a. Benefits Currently in Payment (including TERI)	$ 20,624,862	$ 19,084,672
b. Benefits to be Paid to Current Active Members (includes vested terminated members)	11,076,005	11,197,325
c. Total Benefits Payable from Employer Annuity Accumulation Fund	$ 31,700,867	$ 30,281,997
3. Total Liabilities	$ 40,966,635	$ 39,370,984

All dollar amounts are in thousands.

[1] July 1, 2007 value includes $157,595 to be paid by future employee contributions.
[2] July 1, 2007 value includes $157,595 in future employee contributions towards the accrued liability.

TABLE III-2
SUMMARY OF ACTUARIAL VALUATION RESULTS

	JULY 1, 2008	JULY 1, 2007
Number of Active Members and Compensation		
Active Members		
1. Number of State Employees	55,053	53,971
2. Compensation of State Employees	$ 2,376,315	$ 2,235,667
3. Number of Public School Employees	85,569	83,356
4. Compensation of Public School Employees	$ 3,269,682	$ 3,075,431
5. Number of Other Agency Employees	52,198	50,641
6. Compensation of Other Agency Employees	$ 1,913,175	$ 1,782,083
Total Number	192,820	187,968
Total Compensation	$ 7,559,172	$ 7,093,181
Active TERI Participants		
Number	7,506	8,753
Total Compensation	$ 428,861	$ 490,734
Rehired Retired Members		
Number	14,289	12,547
Total Compensation	$ 511,716	$ 417,481
ORP Members		
Number	18,559	16,137
Total Compensation	$ 888,473	$ 744,618
Number of Persons Receiving Benefits (Including TERI Members)		
Total Number Receiving Benefits	104,522	100,897
Total Amount of Benefits	$ 1,909,098	$ 1,806,420
Trust Fund Assets		
Market Value	$ 23,124,394	$ 24,412,197
Actuarial Value	$ 24,699,678	$ 23,541,438
Unfunded Actuarial liability (UAL)		
Amount	$ 10,963,741	$ 10,225,240
Remaining Years in Amortization Period	29	29
Required Contribution as a Percent of Compensation		
Normal Cost Contribution	3.36%	4.12%
UAL Contribution	5.88%	4.94%
Group Life Insurance Contribution	0.15%	0.15%
Total	9.39%	9.21%

All dollar amounts are in thousands.

TABLE III-3
DETERMINATION AND AMORTIZATION OF UNFUNDED ACTUARIAL LIABILITY

	JULY 1, 2008	JULY 1, 2007
1. Actuarial Present Value of Future Benefits		
a. Present Retired Members and Beneficiaries	$ 20,624,862	$ 19,084,672
b. Present Active and Inactive Members	20,341,773	20,286,312
c. Total Actuarial Present Value	$ 40,966,635	$ 39,370,984
2. Present Value of Future Normal Contributions		
a. Employees	$ 3,557,148	$ 3,604,304
b. Employer	1,746,068	2,000,002
c. Total Future Normal Contributions	$ 5,303,216	$ 5,604,306
3. Actuarial Liability	$ 35,663,419	$ 33,766,678
4. Current Actuarial Value of Assets	$ 24,669,678	$ 23,541,438
5. Unfunded Actuarial Liability	$ 10,963,741	$ 10,225,240
6. Unfunded Actuarial Liability Rates		
a. Active Members	5.88%	4.94%
b. TERI Members (including employee contributions)[1]	15.74%	15.56%
c. ORP Members	4.24%	4.06%
d. Reemployed Members (including employee contributions)	15.74%	15.56%
7. Unfunded Actuarial Liability Liquidation Period	29 years	29 years

All dollar amounts are in thousands.

[1] TERI participants who entered TERI before July 1, 2005 do not make employee contributions

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 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 the July 1, 2007 amounts. Table IV-2 shows the schedule of funding progress as required by GASB Statement No. 25.

TABLE IV-1
ACCOUNTING STATEMENT INFORMATION

	July 1, 2008	July 1, 2007
1. Actuarial Liabilities for Retirees and Beneficiaries Currently Receiving Benefits and Terminated Employees Not Yet Receiving Benefits	$ 21,340,404	$ 19,729,835
2. Actuarial Liabilities for Current Employees	14,323,015	14,036,843
3. Total Actuarial Liability (1 + 2)	$ 35,663,419	$ 33,766,678
4. Net Actuarial Assets Available for Benefits	24,699,678	23,541,438
5. Unfunded Actuarial Liability (3 – 4)	$ 10,963,741	$ 10,225,240

All dollar amounts are in thousands.

TABLE IV-2

INFORMATION FOR COMPREHENSIVE ANNUAL FINANCIAL REPORT

Member and Payroll Information[1]

Actuarial Valuation Date	Number of Employers	Number of Active Members	Annual Payroll (in thousands)	Annual Average Pay	Percentage Increase in Average Pay
July 1, 2008	776	192,820	$ 7,559,172	$ 39,203	3.89%
July 1, 2007	777	187,968	7,093,181	37,736	3.28%
July 1, 2006	763	184,282	6,733,379	36,538	4.06%
July 1, 2005	768	181,022	6,356,489	35,114	3.30%
July 1, 2004	763	181,827	6,180,599	33,992	1.06%
July 1, 2003	763	185,538	6,240,768	33,636	3.50%
July 1, 2002	746	189,166	6,147,712	32,499	3.42%
July 1, 2001	739	191,494	6,017,537	31,424	5.15%
July 1, 2000	729	196,825	5,881,847	29,884	5.49%
July 1, 1999	726	193,213	5,473,759	28,330	3.83%

Schedule of Retirants Added to and Removed from Rolls[2]

	Added to Rolls		Removed from Rolls		Rolls End of the Year			
Year Ended	Number	Annual Allowances (in thousands)	Number	Annual Allowances (in thousands)	Number	Annual Allowances (in thousands)	%Increase in Annual Allowances	Average Annual Allowances
July 1, 2008	6,021	$ 128,547	2,396	$ 30,178	104,522	$ 1,904,789	5.4%	$ 18,224
July 1, 2007	5,944	130,286	2,252	28,455	100,897	1,806,420	6.0%	17,904
July 1, 2006	4,621	118,271	2,083	24,099	97,205	1,704,589	5.8%	17,536
July 1, 2005	7,203	167,748	2,143	23,537	94,667	1,610,417	9.8%	17,011
July 1, 2004	7,319	151,477	2,132	22,656	89,607	1,466,206	9.6%	16,363
July 1, 2003	7,866	163,867	2,510	27,662	84,420	1,337,385	11.3%	15,842
July 1, 2002	7,344	140,077	2,334	24,531	79,064	1,201,180	10.6%	15,193
July 1, 2001	12,523	284,739	2,474	23,735	74,054	1,085,634	31.7%	14,660
July 1, 2000	4,772	93,459	1,830	17,139	64,005	824,630	10.2%	12,884
July 1, 1999	4,961	68,522	2,436	12,175	61,063	748,310	8.1%	12,255

[1] Does not include TERI participants.
[2] Includes TERI participants.

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	$ 24,699,678	$ 35,663,419	69.3%	$ 10,963,741	$ 7,559,172	145.0%
July 1, 2007	23,541,438	33,766,678	69.7%	10,225,240	7,093,181	144.2%
July 1, 2006	22,293,446	32,018,519	69.6%	9,725,073	6,733,379	144.4%
July 1, 2005	21,625,510	30,217,471	71.6%	8,591,961	6,356,489	135.2%
July 1, 2004	20,862,659	25,977,852	80.3%	5,115,193	6,180,599	82.8%
July 1, 2003	20,197,936	24,398,931	82.8%	4,200,995	6,240,768	67.3%
July 1, 2002	19,298,174	22,446,574	86.0%	3,148,400	6,147,712	51.2%
July 1, 2001	18,486,773	21,162,147	87.4%	2,675,374	6,017,537	44.5%
July 1, 2000	17,286,108	19,414,972	89.0%	2,128,864	5,881,847	36.2%
July 1, 1999	16,120,513	16,298,438	98.9%	177,925	5,473,759	3.3%

Solvency Test

Valuation Date	(1) Active Member Contributions	(2) Retirants & Beneficiaries	(3) Active Members (Employer Funded Portion)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets		
					(1)	(2)	(3)
July 1, 2008	$ 5,708,620	$ 20,624,862	$ 9,329,937	$ 24,699,678	100%	92.1%	0.0%
July 1, 2007	5,464,756	19,084,672	9,217,250	23,541,438	100%	94.7%	0.0%
July 1, 2006	5,229,175	17,800,254	8,989,090	22,293,446	100%	95.9%	0.0%
July 1, 2005	4,915,423	16,891,954	8,410,094	21,625,510	100%	98.9%	0.0%
July 1, 2004	4,750,077	14,184,765	7,043,010	20,862,659	100%	100.0%	27.4%
July 1, 2003	4,627,360	13,240,368	6,531,203	20,197,936	100%	100.0%	35.7%
July 1, 2002	4,512,402	11,600,395	6,333,777	19,298,174	100%	100.0%	50.3%
July 1, 2001	4,339,747	10,367,913	6,454,487	18,486,773	100%	100.0%	58.6%
July 1, 2000	4,563,513	7,484,050	7,367,149	17,286,108	100%	100.0%	71.1%
July 1, 1999	4,278,861	6,944,021	5,075,556	16,120,513	100%	100.0%	96.5%

All dollar amounts are in thousands.

RETIRED MEMBERS AND BENEFICIARIES
AS OF JULY 1, 2008

Group	Number	Annual Retirement Allowances
Service Retirements:		
Employees:		
Men	19,843	$ 456,012
Women	23,694	379,577
Total	43,537	$ 835,589
Teachers:		
Men	8,163	$ 201,526
Women	34,128	651,326
Total	42,291	$ 852,852
Disability Retirements:		
Employees:		
Men	3,029	$ 39,018
Women	3,759	44,143
Total	6,788	$ 83,161
Teachers:		
Men	880	$ 12,252
Women	3,634	46,505
Total	4,514	$ 58,757
Beneficiaries of Deceased Retired Members and Active Members		
Men	2,089	$ 15,838
Women	5,303	62,901
Total	7,392	$ 78,739
Grand Total	104,522	$ 1,909,098

All dollar amounts are in thousands.
Includes TERI participants.

Section V

Membership Information

TABLE V-1
NUMBER OF ANNUAL RETIREMENT ALLOWANCES OF BENEFIT RECIPIENTS AS OF JULY 1, 2008

		Number	Annual Retirement Allowances
Service Retirement (Including TERI Participants)			
a.	Employees		
	Life Annuity	28,406	$ 488,878,555
	10 Year Certain and Life	439	7,463,803
	100% J & S	1,293	27,532,635
	100% Pop-up	5,360	113,651,203
	50% J & S	833	24,403,154
	50% Pop-up	4,286	115,861,539
	Level Off	2,920	57,797,928
	Total Employees	43,537	$ 835,588,816
b.	Teachers		
	Life Annuity	29,837	$ 570,301,485
	10 Year Certain and Life	488	8,881,893
	100% J & S	439	7,782,103
	100% Pop-up	3,195	65,734,194
	50% J & S	338	8,814,693
	50% Pop-up	2,875	72,722,113
	Level Off	5,119	118,615,211
	Total Teachers	42,291	$ 852,851,693
c.	Total		
	Life Annuity	58,243	$ 1,059,180,040
	10 Year Certain and Life	927	16,345,696
	100% J & S	1,732	35,314,738
	100% Pop-up	8,555	179,385,397
	50% J & S	1,171	33,217,847
	50% Pop-up	7,161	188,583,652
	Level Off	8,039	176,413,139
	Total	85,828	$ 1,688,440,509

TABLE V-1
NUMBER OF ANNUAL RETIREMENT ALLOWANCES OF BENEFIT RECIPIENTS AS OF JULY 1, 2008

		Number	Annual Retirement Allowances
Disability Retirement			
a.	Employees		
	Life Annuity	5,392	$ 66,772,093
	10 Year Certain and Life	135	1,605,863
	100% J & S	303	2,828,261
	100% Pop-up	477	4,807,947
	50% J & S	110	1,607,016
	50% Pop-up	371	5,540,198
	Level Off	0	0
	Total Employees	6,788	$ 83,161,377
b.	Teachers		
	Life Annuity	3,876	$ 50,798,625
	10 Year Certain and Life	84	1,084,323
	100% J & S	127	1,131,689
	100% Pop-up	201	2,081,348
	50% J & S	43	645,129
	50% Pop-up	183	3,016,314
	Level Off	0	0
	Total Teachers	4,514	$ 58,757,427
c.	Total		
	Life Annuity	9,268	$ 117,570,717
	10 Year Certain and Life	219	2,690,186
	100% J & S	430	3,959,950
	100% Pop-up	678	6,889,295
	50% J & S	153	2,252,144
	50% Pop-up	554	8,556,511
	Level Off	0	0
	Total	11,302	$ 141,918,804
Beneficiaries of Deceased Retired Members and Active Members			
a.	Employees	5,105	$ 56,027,973
b.	Teachers	2,287	22,710,889
c.	Total	7,392	$ 78,738,862
Total of Table V-1 (pp V-1 & V-2)			
GRAND TOTAL		104,522	$1,909,098,175

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	6,474	40							6,514
	$25,612	$26,262							$25,616
25 – 29	13,728	2,639	43						16,410
	$31,897	$37,003	$34,596						$32,725
30 - 34	9,514	7,158	2,056	16					18,744
	$32,190	$41,034	$44,465	$40,993					$36,921
35 - 39	9,115	6,317	6,569	1,632	50				23,683
	$32,080	$39,344	$47,544	$49,905	$47,038				$39,567
40 - 44	8,282	5,702	4,681	4,722	1,808	56			25,251
	$30,922	$37,499	$42,997	$50,494	$50,656	$45,168			$39,750
45 - 49	7,934	6,027	4,816	4,100	5,253	1,950	34		30,114
	$31,244	$36,264	$40,754	$47,496	$53,951	$56,273	$56,348		$41,592
50 - 54	6,930	5,429	4,967	4,137	4,053	3,716	480	5	29,717
	$31,827	$36,923	$40,012	$45,479	$51,504	$57,760	$62,202	$61,954	$42,449
55 - 59	5,354	4,463	4,087	3,718	3,434	2,223	530	76	23,885
	$32,657	$36,753	$40,540	$43,549	$49,610	$57,489	$65,415	$64,845	$42,044
60 - 64	3,045	2,803	2,337	2,096	1,870	1,053	189	94	13,487
	$30,601	$35,699	$40,683	$44,420	$48,423	$54,107	$71,245	$78,503	$40,765
65 & Over	1,591	1,437	848	461	341	207	76	54	5,015
	$21,456	$26,300	$32,214	$38,170	$51,211	$54,708	$62,864	$75,163	$30,801
TOTAL	71,967	42,015	30,404	20,882	16,809	9,205	1,309	229	192,820
	$30,974	$37,503	$42,415	$46,740	$51,428	$56,816	$64,695	$72,821	$39,203

	Prior Year	Current Year
Average Age	44.67 Years	44.75 Years
Average Service	9.83 Years	9.73 Years
Average Pay	$ 37,736	$ 39,203
Percent Female	69.6%	69.7%

TABLE V-3

DISTRIBUTION OF PARTICIPANTS RECEIVING BENEFITS AS OF JULY 1, 2008

SERVICE RETIREMENT[1]

Current Age Group	Number	Total Annual Benefit	Average Annual Benefit
Under 50	547	$ 9,356,719	$ 17,106
50 - 54	5,012	126,860,949	25,311
55 - 59	11,948	324,654,241	27,172
60 - 64	16,745	389,048,569	23,234
65 - 69	16,285	296,301,396	18,195
70 - 74	12,437	202,886,688	16,313
75 - 79	9,680	151,368,141	15,637
80 & Over	13,174	187,963,805	14,268
Total	85,828	$ 1,688,440,509	$ 19,672

DISABILITY RETIREMENT

Current Age Group	Number	Total Annual Benefit	Average Annual Benefit
Under 50	1,324	$ 15,224,957	$ 11,499
50 - 54	1,384	18,039,246	13,034
55 - 59	2,199	30,602,347	13,916
60 - 64	2,483	32,211,076	12,973
65 - 69	1,788	21,674,895	12,122
70 - 74	991	10,916,847	11,016
75 - 79	556	6,261,816	11,262
80 & Over	577	6,987,621	12,110
Total	11,302	$ 141,918,804	$ 12,557

BENEFICIARIES

Current Age Group	Number	Total Annual Benefit	Average Annual Benefit
Under 50	1,175	$ 7,895,737	$ 6,720
50 - 54	407	3,784,365	9,298
55 - 59	542	6,056,758	11,715
60 - 64	758	8,118,118	10,710
65 - 69	785	8,936,581	11,384
70 - 74	802	9,557,673	11,917
75 - 79	917	10,932,773	11,922
80 & Over	2,006	23,456,857	11,693
Total	7,392	$ 78,738,862	$ 10,652

[1] Includes TERI participants.

Appendix A

Actuarial Assumptions and Methods

1. **Investment Rate of Return**

   8.00% per annum 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**

   The salary increase assumption was not modified as a result of the July 1, 2002 – June 30, 2007 experience study.

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

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

3. Decrement Rates

a. Service Retirement and TERI Entry

ANNUAL RATES OF RETIREMENT OR TERI ENTRY

Teachers

	Reduced Service (Early) Retirement		First Eligible Unreduced Service (Normal) Retirement		Subsequent Eligibility for Unreduced Service (Normal) Retirement	
Age	Male	Female	Male	Female	Male	Female
50	0%	0%	50%	55%	20%	25%
55	10%	11%	80%	70%	30%	30%
60	11%	14%	65%	70%	45%	40%
61	15%	16%	75%	70%	50%	45%
62	25%	21%	80%	85%	60%	50%
63	18%	20%	50%	65%	40%	40%
64	22%	15%	40%	50%	35%	30%
65	0%	0%	45%	50%	50%	50%
66	0%	0%	20%	20%	30%	30%
67	0%	0%	20%	20%	25%	30%
68	0%	0%	20%	20%	25%	25%
69	0%	0%	20%	20%	25%	25%
70	0%	0%	100%	100%	100%	100%

Employees

	Reduced Service (Early) Retirement		First Eligible Unreduced Service (Normal) Retirement		Subsequent Eligibility for Unreduced Service (Normal) Retirement	
Age	Male	Female	Male	Female	Male	Female
50	0%	0%	35%	45%	15%	15%
55	8%	10%	45%	55%	20%	25%
60	8%	13%	55%	60%	15%	20%
61	12%	14%	40%	65%	15%	20%
62	21%	21%	80%	70%	20%	35%
63	14%	18%	45%	60%	15%	25%
64	12%	15%	35%	45%	15%	20%
65	0%	0%	40%	45%	35%	35%
66	0%	0%	20%	20%	25%	25%
67	0%	0%	20%	20%	25%	25%
68	0%	0%	20%	20%	20%	25%
69	0%	0%	20%	20%	20%	25%
70	0%	0%	100%	100%	100%	100%

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

We assumed 37.5% of all members electing to either retire or enter TERI before age 65 will elect to enter TERI and will remain in TERI for three years

c. Active Member Mortality and Disability incidence

ACTIVE MEMBER MORTALITY AND DISABILITY INCIDENCE
ANNUAL RATES OF:

	Mortality				Disability Incidence			
	Employees		Teachers		Employees		Teachers	
Age	Male	Female	Male	Female	Male	Female	Male	Female
25	0.04%	0.01%	0.03%	0.01%	0.06%	0.06%	0.05%	0.06%
30	0.04%	0.02%	0.03%	0.01%	0.13%	0.08%	0.08%	0.08%
35	0.08%	0.03%	0.06%	0.03%	0.19%	0.16%	0.10%	0.08%
40	0.11%	0.05%	0.08%	0.04%	0.32%	0.21%	0.20%	0.13%
45	0.15%	0.07%	0.11%	0.06%	0.44%	0.30%	0.33%	0.28%
50	0.21%	0.11%	0.16%	0.09%	0.63%	0.51%	0.52%	0.44%
55	0.30%	0.16%	0.23%	0.14%	1.01%	0.81%	0.85%	0.72%
60	0.49%	0.26%	0.37%	0.22%	1.27%	1.24%	1.31%	1.10%
64	0.70%	0.35%	0.53%	0.30%	1.58%	1.72%	1.64%	1.38%

d. Withdrawal Rates

PROBABILITY OF DECREMENT DUE TO WITHDRAWAL

Years of Service – Male Teachers

Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.2964	0.2029	0.1384	0.0973	0.0721	0.0578	0.0513	0.0508	0.0518	0.0538	0.0560
30	0.2721	0.1922	0.1356	0.0990	0.0776	0.0662	0.0607	0.0577	0.0538	0.0477	0.0387
35	0.2531	0.1823	0.1316	0.0990	0.0805	0.0708	0.0657	0.0611	0.0540	0.0429	0.0273
40	0.2371	0.1730	0.1271	0.0979	0.0817	0.0730	0.0679	0.0619	0.0529	0.0390	0.0199
45	0.2239	0.1649	0.1228	0.0960	0.0811	0.0726	0.0669	0.0600	0.0503	0.0359	0.0167
50	0.2135	0.1587	0.1192	0.0936	0.0787	0.0698	0.0628	0.0553	0.0460	0.0335	0.0174
55	0.2063	0.1549	0.1168	0.0908	0.0742	0.0645	0.0557	0.0479	0.0401	0.0317	0.0222
60	0.1996	0.1518	0.1143	0.0865	0.0669	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Years of Service – Female Teachers

Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.2299	0.1608	0.1209	0.1006	0.0892	0.0841	0.0827	0.0802	0.0731	0.0660	0.0601
30	0.2269	0.1664	0.1260	0.1015	0.0878	0.0802	0.0751	0.0696	0.0618	0.0527	0.0426
35	0.2171	0.1597	0.1208	0.0966	0.0830	0.0748	0.0682	0.0615	0.0536	0.0434	0.0303
40	0.2045	0.1477	0.1106	0.0885	0.0759	0.0683	0.0616	0.0551	0.0475	0.0368	0.0215
45	0.1930	0.1361	0.1001	0.0798	0.0685	0.0619	0.0561	0.0504	0.0435	0.0329	0.0163
50	0.1866	0.1296	0.0937	0.0738	0.0633	0.0570	0.0523	0.0478	0.0417	0.0317	0.0154
55	0.1879	0.1308	0.0935	0.0727	0.0626	0.0543	0.0509	0.0474	0.0420	0.0331	0.0190
60	0.1948	0.1379	0.0986	0.0758	0.0660	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Years of Service – Male Employees

Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.3288	0.2466	0.1902	0.1554	0.1345	0.1166	0.0963	0.0783	0.0650	0.0595	0.0662
30	0.2939	0.2211	0.1726	0.1425	0.1236	0.1089	0.0951	0.0821	0.0704	0.0603	0.0530
35	0.2678	0.1997	0.1553	0.1285	0.1122	0.1010	0.0916	0.0822	0.0716	0.0586	0.0424
40	0.2456	0.1804	0.1384	0.1140	0.1002	0.0922	0.0861	0.0791	0.0695	0.0549	0.0335
45	0.2257	0.1636	0.1233	0.1003	0.0882	0.0825	0.0781	0.0727	0.0639	0.0493	0.0266
50	0.2082	0.1501	0.1115	0.0891	0.0774	0.0717	0.0675	0.0626	0.0547	0.0419	0.0224
55	0.1942	0.1410	0.1041	0.0814	0.0691	0.0600	0.0543	0.0488	0.0419	0.0328	0.0212
60	0.1827	0.1351	0.1002	0.0770	0.0632	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Years of Service – Female Employees

Age	0	1	2	3	4	5	6	7	8	9	10+
25	0.2981	0.2459	0.2060	0.1772	0.1560	0.1385	0.1248	0.1159	0.1094	0.1030	0.0940
30	0.2710	0.2236	0.1864	0.1591	0.1395	0.1253	0.1145	0.1059	0.0970	0.0853	0.0688
35	0.2506	0.2015	0.1657	0.1410	0.1244	0.1130	0.1042	0.0958	0.0857	0.0712	0.0505
40	0.2329	0.1803	0.1451	0.1233	0.1101	0.1010	0.0935	0.0854	0.0748	0.0592	0.0367
45	0.2172	0.1622	0.1275	0.1080	0.0972	0.0894	0.0825	0.0746	0.0644	0.0493	0.0276
50	0.2041	0.1493	0.1151	0.0966	0.0864	0.0787	0.0715	0.0637	0.0543	0.0414	0.0234
55	0.1946	0.1429	0.1091	0.0895	0.0778	0.0688	0.0605	0.0526	0.0445	0.0353	0.0240
60	0.1873	0.1412	0.1079	0.0855	0.0701	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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

4. Mortality After Retirement

For healthy retirees and beneficiaries, the UP-94 Mortality Table rates, with the female rates set back one year. A separate table of mortality rates is used for disabled retirees based upon the RP-2000 Disabled Retiree Mortality Table. The following are sample rates:

Healthy Retirees and Beneficiaries				
	EMPLOYEES		TEACHERS	
Age	Male	Female	Male	Female
50	0.28%	0.14%	0.25%	0.14%
55	0.48%	0.22%	0.43%	0.22%
60	0.86%	0.42%	0.76%	0.42%
65	1.56%	0.82%	1.39%	0.82%
70	2.55%	1.37%	2.34%	1.37%
75	4.00%	2.19%	3.66%	2.19%
80	6.67%	3.80%	6.01%	3.80%
85	10.46%	6.56%	9.64%	6.56%

Disabled Retirees				
	EMPLOYEES		TEACHERS	
Age	Male	Female	Male	Female
50	2.46%	1.27%	2.17%	1.27%
55	3.01%	1.82%	2.66%	1.82%
60	3.57%	2.40%	3.15%	2.40%
65	4.26%	3.08%	3.76%	3.08%
70	5.32%	4.14%	4.69%	4.14%
75	6.98%	5.75%	6.16%	5.75%
80	9.30%	7.95%	8.20%	7.95%
85	12.04%	11.02%	10.62%	11.02%

5. Marriage Assumption

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

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 (including the return on TERI balances) 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 Method

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

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

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

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

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

8. Unused Annual Leave

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

9. Unused Sick Leave

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

10. Future Cost-of-living Increases

Benefits are assumed to increase 2% annually beginning on the July 1st next following receipt of 12 monthly payments**.**

11. Administrative and Investment Expenses

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

12. Payroll Growth Rate

4.00% per annum.

13. Changes from Prior Valuation

The experience study for the period ending June 30, 2007 recommended several changes to the actuarial assumptions and methods. Some of the more important changes are listed below. Please refer to the experience study report for complete details. The new assumptions were adopted by the Board on June 17, 2008.

1. 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%.
2. Increased the asset smoothing period from 5 to 10 years beginning with the investment experience for the year ended June 30, 2008.
3. Increased the annual cost of living increase from 1.0% to 2.0%
4. Revised retirement and TERI election rates and the assumed duration in TERI
5. Revised rates of disability incidence and inactive mortality of male teachers and disabled retirees

Appendix B

Summary of Plan Provisions

1. **Effective Date**

   July 1, 1945

2. **Eligibility Requirements**

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

   Employees in non-permanent positions may choose to join.

3. **Creditable Service**

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

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

4. **Average Final Compensation (AFC)**

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

5. **Normal Retirement**

   a. Eligibility — Attainment of age 65 with 5 years of creditable service, or completion of 28 years of creditable service.

   b. Benefit — 1.82% of AFC times creditable service.

6. Early Retirement

a. Eligibility — Attainment of age 60 with 5 years of creditable service, or attainment of age 55 with 25 years of creditable service.

b. Benefit — Benefit accrued to date of retirement, reduced 5% for each year prior to 65 (for age 60 eligibility), or 4% for each year prior to 28 years (for age 55 with 25 years eligibility).

7. Teachers and Employees Retention Incentive (TERI)

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

8. Disability Retirement

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

b. Benefit — Benefit equal to the amount that would have been payable at age 65 assuming continued employment and AFC at date of disability, less the equivalent benefit that would have been provided by the employee contributions that would have been made until age 65.

9. Death Benefits

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

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

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

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

10. Employee Contributions

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

11. Vested Benefit Upon Termination

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

12. Termination Benefit

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

13. Optional Forms of Retirement Income

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

14. Cost of Living Adjustment

Beginning the July 1st 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.).

15. Changes from Prior Valuation

This valuation incorporates the changes due to the passage of Act 311. Most important of these changes is the change to automatic cost of living adjustments. Other changes in the act have to due with regulatory compliance.