

Note that this valuation was not approved since the investment rate of return change from 7.25 to 7.50 percent was not adopted by the Budget and Control Board.

***South Carolina Retirement System  
(SCRS)  
Actuarial Valuation  
as of July 1, 2005  
(Revised)***



A MILLIMAN GLOBAL FIRM

**Milliman**

*Consultants and Actuaries*

**March 2006**

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March 13, 2006

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 revised actuarial valuation report for the South Carolina Retirement System (SCRS) as of July 1, 2005. The results of this report are applicable to Fiscal Year 2007. This revision reflects a change to the investment return assumptions from 7.25% to 7.50%.

### **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 second annual actuarial valuation of the South Carolina Retirement System as of July 1, 2005 and the results of the valuation are contained in the following report.

### **Funding Objective**

A funding objective of the System is that contribution rates will remain relatively level over time as a percentage of payroll. 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's payroll. Additionally, the method determines the actuarial liability, the value of benefits already earned by active and retired members due to past service. A smoothing technique is utilized to produce a market-related actuarial value of assets with the goal of dampening the impact of investment return volatility. The *funded ratio* is the actuarial value of assets as a percentage of the actuarial liability.



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

### **Assumptions**

Actuarial assumptions are necessary to estimate the future economic and demographic experience of the System. The actuarial assumptions were recommended by the prior actuary and adopted by the State Budget and Control Board based on a review of the System's experience completed during Fiscal Year 2004. This revised report reflects a change to the investment rate of return assumption from 7.25% to 7.50%. We have reviewed all other assumptions and believe they remain reasonable and are in accordance with the applicable Actuarial Standards of Practice.

The results and conclusions of this report should not be interpreted as applying in future years beyond FY 2007. Differences between our projections and actual amounts depend on the extent to which future experience conforms exactly to the assumptions used in this analysis.

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

### **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



Board of Trustees  
March 13, 2006  
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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, 2005 valuation, we believe that the valuation appropriately reflects the System's long term obligations and the current schedule of contributions are sufficient to fund the liabilities of the System over a reasonable time frame, and based on these criteria, the System may be deemed actuarially sound.

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

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

Respectfully submitted,

Milliman, Inc.

Hassan Ghazi, ASA  
Associate Actuary

Robert S. Dezube, FSA  
Principal and Consulting Actuary

# **Section I**

## **Board Summary**

## BOARD SUMMARY

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This report presents the revised results of the July 1, 2005 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 2007 **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 7.70%, including a 0.15% contribution for the Group Life Fund. The 7.55% net employer contribution is used to pay the employer's portion of the normal cost and to amortize the unfunded actuarial liability. Legislation effective July 1, 2005, increases the employer contribution rate to 8.20% of payroll in fiscal year 2007 and 8.70% of payroll in fiscal year 2008 and thereafter. We have taken into account these increases in determining the expected future amortization amounts and the resulting amortization period. Likewise, the scheduled 0.25% of salary increase to the employee contribution rate, 6.25% effective as of July 1, 2005 and 6.50% effective July 1, 2006, are also taken into account.

The July 1, 2005 valuation develops the contribution rates for FY 2007. The actuarially determined employer normal cost contribution rate increased from 3.80% for FY 2006 to 3.86% for FY 2007. As a result, the net contribution towards the unfunded actuarial liability decreased from 3.75% to 3.69%. The unfunded actuarial liability increased from \$5.1 billion to \$7.8 billion primarily due to the legislative changes to the benefit provisions and the ad hoc COLA granted as of July 1, 2005. This increase was offset

## BOARD SUMMARY

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by a decrease due to the increase in the investment return assumption. The resulting amortization period, rounded to the nearest year, decreased from 27 years to 24 years. There were several reasons for this decrease:

- The plan experienced an actuarial loss on plan assets of \$107 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.
- The plan experienced a net actuarial loss of \$177 million on plan liabilities due to non-investment related experience. This loss primarily resulted from higher than expected increases in participant salaries which accounts for \$137 million of the loss. The net loss represents 0.6% of the actuarial liability and increased the amortization period by 1.4 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 our assumptions. When a plan experiences alternating gains and losses that are small compared to the total actuarial liability, the plan's actuarial assumptions are considered reasonable.
- The plan provision changes due to legislation (Senate Bill 618) effective July 1, 2005 had the effect of increasing the unfunded actuarial liability by \$2,493 million and increased the amortization period by 1.8 years.
- The plan granted a 2.4% ad hoc COLA in addition to the 1% automatic COLA included in the legislative changes above which increased the unfunded actuarial liability by \$396 million and increased the amortization period by 2.4 years.
- We have made a refinement to the application of the cost method as it concerns participants in the Teacher and Employee Retention Incentive (TERI). Under the prior actuary's approach, TERI participants were assumed to have the same employer normal cost rate as active members. For the purpose of developing the end of year assets, TERI participants are treated the same as retirees in that the amounts credited to TERI accounts are treated as benefit payments for cash flow purposes. Therefore, to be more consistent, we recommend the value of benefits for current and future TERI participants be funded over the period from their date of hire to their entry into TERI rather than their exit from TERI. This has the effect of ceasing normal cost at TERI entry. This refinement caused an increase of 0.18% of payroll to the normal cost rate for active (non-TERI) members, increased the unfunded actuarial liability by \$314 million but also increased the dollar amount of the UAL amortization payment. This impact to the funding period of this method refinement reduces the amortization period by 0.7 years.
- This revised report reflects a 0.25% increase to the investment rate of return assumption from 7.25% to 7.50% beginning 7/1/2005. This assumption change

## BOARD SUMMARY

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decreases the unfunded accrued liability by \$838 million and decreases the funding period by 6.4 years.

- Additionally, improvements to the System's data allowed us to refine the calculation of liabilities for terminated members of the plan. In prior valuations, all terminated participants with contributions remaining with the System were assumed to be vested and eligible for future payments. We can now identify in the data the non-vested terminated participants and set their liability equal to the value of their accumulated employee contributions. This refinement decreased the unfunded actuarial liability by \$75 million and decreased the amortization period by 0.5 years.
- Other factors, such as actual contributions exceeding the expected amount and the one-year decrease in the amortization period due to the passing of time, decreased the amortization period by 1.7 years.

As part of this valuation, we tested the adequacy of the 0.15% contribution rate to fund the Group Life Insurance benefits. There is a separate fund for these benefits with assets at market value of \$116 million as of July 1, 2005. The 0.15% contribution rate is reasonable and, together with assets on hand, remains adequate to fund the expected benefit payments for FY 2007.

The balance of this section presents summarized information regarding plan trends, details on the 2004/2005 experience, and tables presenting a summary of the principal results. It is important to note that the comparative 2004 valuation results contained in the tables are based upon the 7.25% investment return assumption as was in effect through June 30, 2005.

## BOARD SUMMARY

### Prior Year Experience

#### ASSETS

The Plan has two measures of plan assets: (i) the market value and (ii) the actuarial value. The market value is a snapshot of the asset value as of July 1, 2005. The actuarial value is a smoothed asset value that recognizes 20% of the difference between the expected investment return and actual investment return each year for five years. The expected investment return equals the prior year's actuarial value of assets adjusted with contributions, and payments using investment earnings of 7.25%. This method is intended to dampen the effect that fluctuations in market value have on funding requirements.

Unlike the July 1, 2004 valuation, the market value of assets as of July 1, 2005 now slightly exceeds the actuarial value. The amount of this excess is \$79 million. This results from the asset smoothing technique deferring more investment gains than investment losses. This means that all of the investment loss of 2001 and 80% of the loss from 2002 have now been either offset by subsequent investment gains or absorbed into the unfunded actuarial liability and no longer have the potential to further adversely effect the funded position of the System. The last 20% of the 2002 deferred investment loss will be recognized in FY 2006.

For the plan year ending July 1, 2005, the plan earned 7.2%<sup>1</sup> on a market value basis and 6.7% on an actuarial value basis. These returns resulted in an actuarial loss to the fund of \$15 million on a market value basis and actuarial loss to the fund of \$107 million loss 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, 2004 value	\$ 20,850,129	\$ 20,862,659
Employer Contributions	529,902	529,902
Member Contributions	433,252	433,252
Transfer of Assets	(2,134)	(2,134)
Benefit Payments and Expenses	(1,581,653)	(1,581,653)
Expected Investment Earnings (7.25%)	1,489,136	1,490,045
Expected Value July 1, 2005	21,718,632	21,732,071
Investment Gain (Loss)	(14,499)	(106,561)
July 1, 2005 value	\$ 21,704,133	\$ 21,625,510

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

**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 2005, the actuarial liability increased due to a net actuarial loss from experience of \$177 million, which is 0.6% of the total actuarial liability. In addition, the liability increased by \$3,128 million due to combination of the legislative changes to the plan provisions, the 2.4% ad hoc COLA and the refinement to the application of the actuarial cost method and data as discussed previously.

<b>Liabilities (In Millions)</b>	<b>Total Value of Future Benefits</b>	<b>Actuarial Liability</b>
<b>July 1, 2004</b>	\$ 30,864	\$ 25,978
<b>July 1, 2005</b>	\$ 34,143	\$ 29,379

July 1, 2004 results based on a 7.25% investment return assumption.

**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, 2004 and July 1, 2005 unfunded actuarial liability/(surplus) amounts, as well as the corresponding funded ratios (actuarial assets divided by liabilities). The significant increase in actuarial liabilities due to the plan changes is the primary cause of the decrease in the funded ratio.

<b>In Millions</b>	<b>Unfunded Actuarial Liability</b>	<b>Funded Ratio</b>
<b>July 1, 2004 net unfunded / (surplus)</b>	\$ 5,115	80.3%
<b>July 1, 2005 net unfunded / (surplus)</b>	\$ 7,754	73.6%

July 1, 2004 results based on a 7.25% investment return assumption.

## BOARD SUMMARY

### MEMBERSHIP

There are four types of plan members: (i) current active members; (ii) inactive members who retain a right to either a refund of contributions or a deferred vested benefit; (iii) TERI members; 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, 2004 and 2005.

There was an overall increase in membership during the year.

	7/1/2005	7/1/2004	Change
Active Members	181,022	181,827	(0.4%)
Inactive Members	148,888	146,718	1.5%
TERI Members	14,416	12,663	13.8%
Retired Members and Beneficiaries	80,251	76,944	4.3%
Total Members	424,577	418,152	1.5%

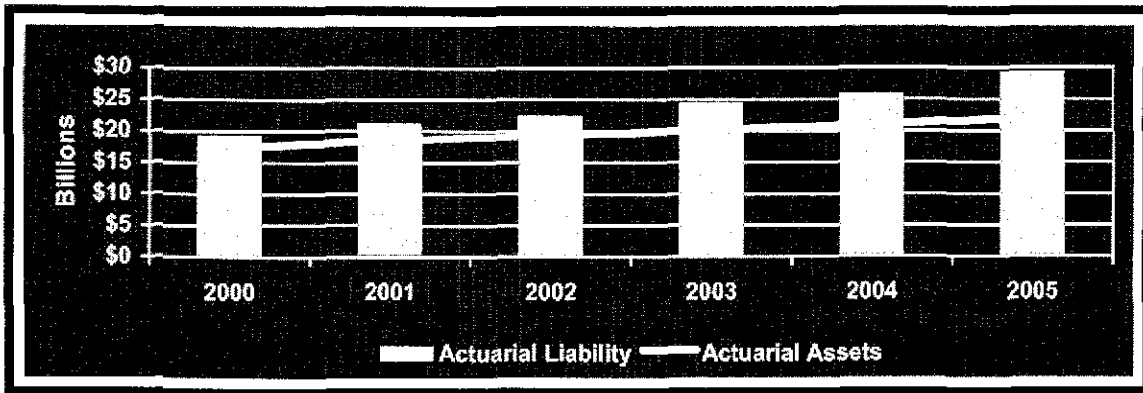
### Trends

To truly understand the financial condition of the pension plan, a review of the prior year's funded status is helpful in seeing the big picture and general trend evolving. Below, we present three charts that present trend information from 2000 through 2005.

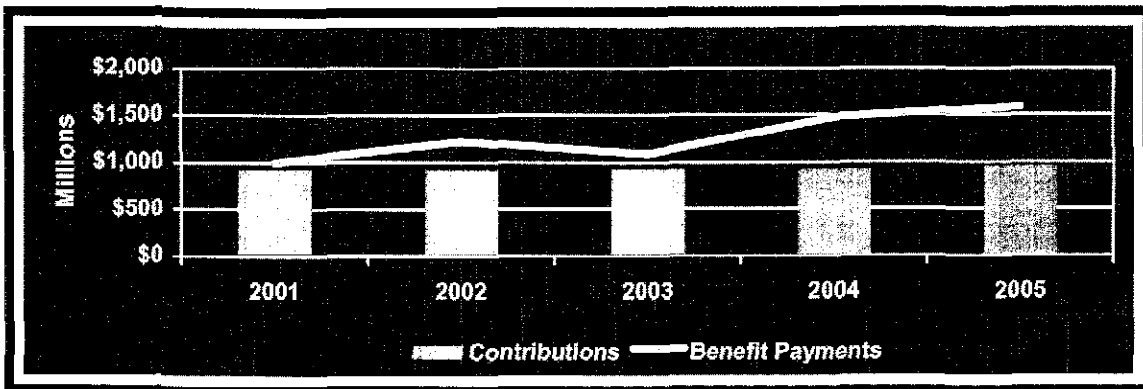
The first graph shows an increase in both actuarial liability and actuarial assets. As can be seen, the gap between actuarial liability and actuarial assets increases in each of these years resulting in the increases in the unfunded actuarial liability. The second graph shows that contributions are fairly level, while the benefit payments have a slight upward trend over the five years. 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 16 to 24 years over the five-year period consistent with the information shown in the first graph.

## BOARD SUMMARY

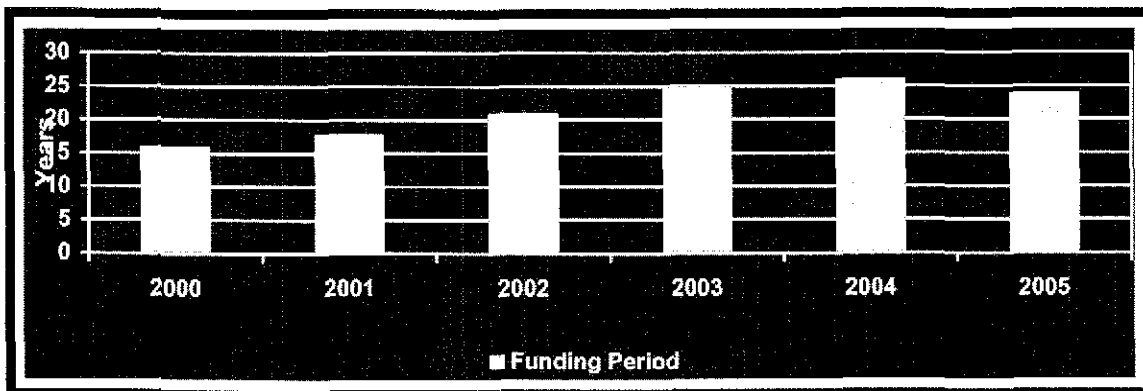
### Assets and Liabilities



### Cash Flows



### Unfunded Actuarial Liability Amortization period



# BOARD SUMMARY

## PRINCIPAL RESULTS

July 1, 2005

July 1, 2004

### Membership

Number of:		
Active Members	181,022	181,827
TERI Members	14,416	12,663
Retirees and Beneficiaries	80,251	76,944
Inactive Members	148,888	146,718
Total	424,577	418,152
Payroll (excludes ORP & TERI members)	\$ 6.4 billion	\$ 6.2 billion

### Statutory Contribution Rate (Including Group Insurance)

Member	6.25%	6.00%
Employer		
Retirement Contribution	7.55%	7.55%
Group Life Insurance Contribution	0.15%	0.15%
Total	7.70%	7.70%

### Assets

Market Value	\$ 21.7 billion	\$ 20.9 billion
Actuarial Value	\$ 21.6 billion	\$ 20.9 billion
Return on Market Value	7.2%	9.0%
Return on Actuarial Value	6.7%	6.1%
Ratio of Actuarial to Market Value	99.6%	100.1%

### Actuarial Information

Employer Normal Cost %	3.69%	3.80%
Unfunded Actuarial Liability (UAL)	\$ 7.8 billion	\$ 5.1 billion
Funded Ratio	73.6%	80.3%
Amortization period	24 years	27 years

### Change in Unfunded Actuarial Liability (in millions)

Beginning of Year Unfunded Actuarial Liability	\$ 5,115	\$ 4,201
Interest on Unfunded Actuarial Liability	371	305
Amortization Payment	(306)	(244)
Asset Experience	107	228
Salary Experience	137	(150)
Other Liability Experience	40	(124)
COLA	396	209
Benefit Changes	2,493	0
Assumption/Method Changes	(599)	690
Total Increase / (Decrease)	\$ 2,639	\$ 914
End of Year Unfunded Actuarial Liability	\$ 7,754	\$ 5,115

July 1, 2004 results based on a 7.25% investment return assumption.

# **Section II**

## **Assets**

## ASSETS

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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, 2005 valuation.

# ASSETS

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

PLAN YEAR ENDING JUNE 30,

Item	2005	2004	2003	2002
1. Market Value of Assets at Beginning of Year	\$ 20,850,129	\$ 19,665,571	\$ 18,439,431	\$ 18,585,912
2. Net External Cash Flow During the Year	(620,633)	(552,095)	(414,748)	(303,213)
3. Market Value of Assets at End of Year	21,704,133	20,850,129	19,665,571	18,439,431
4. Actual Investment Income During the Year Based on Market Value:	1,474,637	1,736,653	1,640,888	156,732
5. Assumed Earnings Rate	7.25%	7.25%	7.25%	7.25%
6. Expected Earnings for the Year				
a. Market Value of Assets, Beginning of Year: (5) x (1)	1,511,634	1,425,754	1,336,859	1,347,479
b. Net External Cash Flow: (5) x 5 x (2)	(22,498)	(20,013)	(15,035)	(10,991)
c. Total: (a) + (b)	1,489,136	1,405,741	1,321,824	1,336,487
7. Excess Investment Income for Year: (4) - (6)	\$ (14,499)	\$ 330,912	\$ 319,064	\$ (1,179,755)

All dollar amounts in thousands

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

Item	Valuation as of July 1, 2005
1. Excess (Shortfall) of Investment Income for Current Year and Previous Three Years	
a. Current Year	\$ (14,499)
b. Current Year - 1	330,912
c. Current Year - 2	319,064
d. Current Year - 3	(1,179,755)
2. Deferral of Excess (Shortfall) of Investment Income for:	
a. Current Year (80% Deferral)	\$ (11,599)
b. Current Year - 1 (60% Deferral)	198,547
c. Current Year - 2 (40% Deferral)	127,626
d. Current Year - 3 (20% Deferral)	<u>(235,951)</u>
e. Total Deferred for Year	\$ 78,623
3. Market Value of Plan Assets, End of Year	\$ 21,704,133
4. Preliminary Actuarial Value of Plan Assets, End of Year (Item 3 - Item 2.e.)	\$ 21,625,510
5. Actuarial Value of Assets Corridor	
a. 80% of Market Value of Assets, End of Year	\$ 17,363,306
b. 120% of Market Value of Assets, End of Year	\$ 26,044,960
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.)	\$ 21,625,510

All dollar amounts in thousands

# **Section III**

## **Valuation Results**

## VALUATION RESULTS

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In this section we present the principal valuation results. A pension plan is in actuarial balance if the assets on hand plus future employer and employee contributions are equal to the total value of future plan benefits. The System has assets on hand in the employee fund and the employer fund. Currently it receives contributions from employees of 6.25% of pay for FY 2006 (scheduled to increase to 6.50% beginning FY 2007) and contributions from the employer of 7.55% of pay, after subtracting the 0.15% of pay contribution for the group life fund (scheduled to increase to 8.05% for FY 2007 and to 8.55% for FY 2008 and beyond).

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, 2005 actuarial valuation results compared to similar results from the prior valuation. An employer contribution rate of 7.70% including the 0.15% contribution to the Group Life Fund is sufficient to fund the unfunded actuarial liability over 30 years taking into account the scheduled increases to both employer and employee required contributions.

### Determination and Amortization of Unfunded Liability

In Table III-3 we show the determination of the unfunded actuarial liability and the contribution to amortize the liability. We determined the portion of the employer contribution for active members by taking the total employer contribution rate and subtracting the contribution to the Group Life Fund and the normal cost contribution. We determined the employer contribution for ORP members by taking the total employer contribution rate and subtracting the contribution to the Group Life Fund and the 5% contribution to the ORP. The contribution for reemployed retirees and TERI participants is the sum of the employer contribution rate (less the 0.15% Group Life Fund contribution) and employee contribution rate. These amounts now reflect both the legislative change requiring rehired retirees and TERI participants to make contributions as well as the refinement to the cost method which no longer determines a normal cost contribution for TERI participants.

# VALUATION RESULTS

TABLE III-1 VALUATION BALANCE SHEET		
	JULY 1, 2005	JULY 1, 2004
<b>Assets</b>		
1. Current Assets (Actuarial Value)		
a. Employee Annuity Savings Fund	\$ 4,915,423	\$ 4,750,077
b. Employer Annuity Accumulation Fund	<u>16,710,087</u>	<u>16,112,582</u>
c. Total Current Assets	\$ 21,625,510	\$ 20,862,659
2. Present Value of Future Member Contributions	\$ 3,009,535	\$ 2,743,400
3. Present Value of Future Employer Contributions		
a. Normal Cost Contributions	\$ 1,753,769	\$ 2,142,726
b. Accrued Liability Contributions <sup>1</sup>	<u>7,753,922</u>	<u>5,115,193</u>
c. Total Future Employer Contributions	\$ 9,507,691	\$ 7,257,919
4. Total Assets	<u>\$ 34,142,736</u>	<u>\$ 30,863,978</u>
<b>Liabilities</b>		
1. Employee Annuity Savings Fund		
a. Past Member Contributions	\$ 4,915,423	\$ 4,750,077
b. Present Value of Future Member Contributions <sup>2</sup>	<u>\$ 3,392,902</u>	<u>2,743,400</u>
c. Total Contributions to Employee Annuity Savings Fund	\$ 8,308,325	\$ 7,493,477
2. Employer Annuity Accumulation Fund		
a. Benefits Currently in Payment (including TERI)	\$ 16,530,457	\$ 14,184,765
b. Benefits to be Paid to Current Active Members (includes vested terminated members)	<u>9,303,954</u>	<u>9,185,736</u>
c. Total Benefits Payable from Employer Annuity Accumulation Fund	\$ 25,834,411	\$ 23,370,501
3. Total Liabilities	<u>\$ 34,142,736</u>	<u>\$ 30,863,978</u>

All dollar amounts are in thousands.  
July 1, 2004 results based on a 7.25% investment return assumption.

<sup>1</sup> \$383,367 to be paid by future employee contributions as of July 1, 2005 and \$0 as of July 1, 2004

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

# VALUATION RESULTS

**TABLE III-2**  
**SUMMARY OF ACTUARIAL VALUATION RESULTS**

JULY 1, 2005

JULY 1, 2004

Number of Active Members and Compensation		
<b>Active Members</b>		
1. Number of State Employees	53,098	54,367
2. Compensation of State Employees	\$ 2,019,747	\$ 1,990,543
3. Number of Public School Employees	79,659	79,665
4. Compensation of Public School Employees	\$ 2,762,340	\$ 2,681,269
5. Number of Other Agency Employees	48,265	47,795
6. Compensation of Other Agency Employees	\$ 1,574,402	\$ 1,508,787
Total Number	181,022	181,827
Total Compensation	\$ 6,356,489	\$ 6,180,599
<b>Active TERI Members</b>		
Number	14,416	12,663
Total Compensation	\$ 766,000	\$ 690,638
<b>Rehired Retired Members</b>		
Number	9,443	8,728
Total Compensation	\$ 193,182	\$ 161,269
<b>ORP Members</b>		
Number	11,147	Not Available
Total Compensation	\$ 477,166	\$ 386,470
Number of Persons Receiving Benefits and Benefits (Including TERI Members)		
Total Number Receiving Benefits	94,667	89,607
Total Amount of Benefits	\$ 1,610,417	\$ 1,466,206
Trust Fund Assets		
Market Value	\$ 21,704,133	\$ 20,850,129
Actuarial Value	\$ 21,625,510	\$ 20,862,659
Unfunded Actuarial liability (UAL)		
Amount	\$ 7,753,922	\$ 5,115,193
Remaining Years in Amortization Period	24	27
Required Contribution as a Percent of Compensation		
Normal Cost Contribution	3.69%	3.80%
UAL Contribution	3.86%	3.75%
Group Life Insurance Contribution	0.15%	0.15%
Total	7.70%	7.70%

All dollar amounts are in thousands.

July 1, 2004 results based on a 7.25% investment return assumption.

# VALUATION RESULTS

<b>TABLE III-3</b>		
<b>DETERMINATION AND AMORTIZATION OF UNFUNDED ACTUARIAL LIABILITY</b>		
	<b>JULY 1, 2005</b>	<b>JULY 1, 2004</b>
1. Actuarial Present Value of Future Benefits		
a. Present Retired Members and Beneficiaries	\$ 16,530,457	\$ 14,184,765
b. Present Active and Inactive Members	<u>17,612,279</u>	<u>16,679,213</u>
c. Total Actuarial Present Value	\$ 34,142,736	\$ 30,863,978
2. Present Value of Future Normal Contributions		
a. Employees	\$ 3,009,535	\$ 2,743,400
b. Employer	<u>1,753,769</u>	<u>2,142,726</u>
c. Total Future Normal Contributions	\$ 4,763,304	\$ 4,886,126
3. Actuarial Liability	\$ 29,379,432	\$ 25,977,852
4. Current Actuarial Value of Assets	\$ 21,625,510	\$ 20,862,659
5. Unfunded Actuarial Liability	\$ 7,753,922	\$ 5,115,193
6. Unfunded Actuarial Liability Rates		
a. Active Members	3.86%	3.75%
b. TERI Members (including employee contributions)	13.80%	3.75%
c. ORP Members	2.55%	2.55%
d. Reemployed Members (including employee contributions)	13.80%	7.55%
7. Unfunded Actuarial Liability Liquidation Period	24 years	27 years

All dollar amounts are in thousands.

July 1, 2004 results based on a 7.25% investment return assumption.

# **Section IV**

## **Accounting Statement Information**

## ACCOUNTING STATEMENT INFORMATION

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

The GASB Statement #25 actuarial liability is the same as the actuarial liability amount calculated for funding purposes. The GASB Statement #25 liability is compared to the actuarial value of assets to determine the funded ratio. The actuarial liability is determined assuming that the employer is on going and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 7.50% per annum (2004 results based upon 7.25%).

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, 2005 are exhibited in Table IV-1 and compared with the July 1, 2004 amounts. Table IV-2 shows the schedule of funding progress as required by GASB Statement #25.

<b>TABLE IV-1</b>		
<b>ACCOUNTING STATEMENT INFORMATION</b>		
	July 1, 2005	July 1, 2004
1. Actuarial Liabilities for Retirees and Beneficiaries Currently Receiving Benefits and Terminated Employees Not Yet Receiving Benefits	\$ 17,303,976	\$ 14,976,659
2. Actuarial Liabilities for Current Employees	<u>12,075,456</u>	<u>11,002,193</u>
3. Total Actuarial Liability (1 + 2)	\$ 29,379,432	\$ 25,977,852
4. Net Actuarial Assets Available for Benefits	21,625,510	20,862,659
5. Unfunded Actuarial Liability (3 - 4)	\$ 7,753,922	\$ 5,115,193

All dollar amounts are in thousands.

July 1, 2004 results based on a 7.25% investment return assumption.

# ACCOUNTING STATEMENT INFORMATION

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

Member and Payroll Information <sup>1</sup>					
Actuarial Valuation Date	Number of Employers	Number of Active Members	Annual Payroll (in thousands)	Annual Average Pay	Percentage Increase in Average Pay
July 1, 2005	768	181,022	\$ 6,356,489	\$ 35,114	3.30%
July 1, 2004	763	181,827	6,180,599	33,992	1.06%
July 1, 2003	763	185,538	6,240,768	33,636	3.50%
July 1, 2002	746	189,166	6,147,712	32,499	3.42%
July 1, 2001	739	191,494	6,017,537	31,424	5.15%
July 1, 2000	729	196,825	5,881,847	29,884	5.49%
July 1, 1999	726	193,213	5,473,759	28,330	3.83%
July 1, 1998	720	190,259	5,191,048	27,284	2.78%
July 1, 1997	725	185,597	4,927,124	26,547	4.40%
July 1, 1996	713	178,540	4,540,100	25,429	3.28%

Schedule of Retireants Added to and Removed from Rolls <sup>2</sup>								
Year Ended	Added to Rolls		Removed from Rolls		Rolls End of the Year		%Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances (in thousands)		
July 1, 2005	7,203	\$ 167,748	2,143	\$ 23,537	94,667	\$1,610,417	9.8%	\$17,011
July 1, 2004	7,319	151,477	2,132	22,656	89,607	1,466,206	9.6%	16,363
July 1, 2003	7,866	163,867	2,510	27,662	84,420	1,337,385	11.3%	15,842
July 1, 2002	7,344	140,077	2,334	24,531	79,064	1,201,180	10.6%	15,193
July 1, 2001	12,523	284,739	2,474	23,735	74,054	1,085,634	31.7%	14,660
July 1, 2000	4,772	93,459	1,830	17,139	64,005	824,630	10.2%	12,884
July 1, 1999	4,961	68,522	2,436	12,175	61,063	748,310	8.1%	12,255
July 1, 1998	4,580	61,751	2,169	13,592	58,538	691,963	7.5%	11,321
July 1, 1997	4,601	78,201	2,346	10,928	56,127	643,804	11.7%	11,470
July 1, 1996	3,368	49,605	1,572	11,383	53,872	576,531	7.1%	10,702

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

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

# ACCOUNTING STATEMENT INFORMATION

**TABLE IV-2 (CONT.)**

INFORMATION FOR COMPREHENSIVE ANNUAL FINANCIAL REPORT

## Schedule of Funding Progress

Actuarial Valuation Date	Valuation Assets	Actuarial Liability (AL)	Actuarial Assets as a % of Actuarial Liabilities	Unfunded AL (UAL)	Annual Active Member Payroll	UAL as a % of Active Member Payroll
July 1, 2005	\$ 21,625,510	\$ 29,379,432	73.6%	\$ 7,753,922	\$ 6,356,489	122.0%
July 1, 2004	20,862,659	25,977,852	80.3%	5,115,193	6,180,599	82.8%
July 1, 2003	20,197,936	24,398,931	82.8%	4,200,995	6,240,768	67.3%
July 1, 2002	19,298,174	22,446,574	86.0%	3,148,400	6,147,712	51.2%
July 1, 2001	18,486,773	21,162,147	87.4%	2,675,374	6,017,537	44.5%
July 1, 2000	17,286,108	19,414,972	89.0%	2,128,864	5,881,847	36.2%
July 1, 1999	16,120,513	16,298,438	98.9%	177,925	5,473,759	3.3%
July 1, 1998	14,946,070	15,952,345	93.7%	1,006,275	5,191,048	19.4%
July 1, 1997	13,621,362	14,977,179	90.9%	1,355,817	4,927,124	27.5%
July 1, 1996	12,499,235	14,062,092	88.9%	1,562,857	4,540,100	34.4%

## Solvency Test

Valuation Date	(1) Active Member Contributions	(2) Retirees & Beneficiaries	(3) Active Members (Employer Funded Portion)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets
July 1, 2005	\$ 4,915,423	\$ 16,530,457	\$ 7,933,552	\$ 21,625,510	(1) 100.0% (2) 100.0% (3) 2.3%
July 1, 2004	4,750,077	14,184,765	7,043,010	20,862,659	100.0% 100.0% 27.4%
July 1, 2003	4,627,360	13,240,368	6,531,203	20,197,936	100.0% 100.0% 35.7%
July 1, 2002	4,512,402	11,600,395	6,333,777	19,298,174	100.0% 100.0% 50.3%
July 1, 2001	4,339,747	10,367,913	6,454,487	18,486,773	100.0% 100.0% 58.6%
July 1, 2000	4,563,513	7,484,050	7,367,149	17,286,108	100.0% 100.0% 71.1%
July 1, 1999	4,278,861	6,944,021	5,075,556	16,120,513	100.0% 100.0% 96.5%
July 1, 1998	3,972,263	6,305,903	5,674,179	14,946,070	100.0% 100.0% 82.3%
July 1, 1997	3,657,217	5,866,156	5,453,806	13,621,362	100.0% 100.0% 75.1%
July 1, 1996	3,399,816	5,349,968	5,312,308	12,499,235	100.0% 100.0% 70.6%

All dollar amounts are in thousands.

# ACCOUNTING STATEMENT INFORMATION

## RETIRED MEMBERS AND BENEFICIARIES As of July 1, 2005

Group	Number	Annual Retirement Allowances
<b>Service Retirements:</b>		
Employees:		
Men	18,637	\$ 400,555
Women	<u>20,842</u>	<u>311,304</u>
Total	39,479	\$ 711,859
Teachers:		
Men	7,527	\$ 177,172
Women	<u>30,752</u>	<u>538,463</u>
Total	38,279	\$ 715,635
<b>Disability Retirements:</b>		
Employees:		
Men	2,818	\$ 33,135
Women	<u>3,308</u>	<u>35,588</u>
Total	6,126	\$ 68,723
Teachers:		
Men	800	\$ 10,694
Women	<u>3,238</u>	<u>37,970</u>
Total	4,038	\$ 48,664
<b>Beneficiaries of Deceased Retired Members and Active Members</b>		
Men	1,793	\$ 12,180
Women	<u>4,952</u>	<u>53,356</u>
Total	6,745	\$ 65,536
Grand Total	<u>94,667</u>	\$ <u>1,610,417</u>

All dollar amounts are in thousands.  
Includes TERI members.

# **Section V**

## **Membership Information**

**TABLE V-1**  
**NUMBER OF ANNUAL RETIREMENT ALLOWANCES**  
**OF BENEFIT RECIPIENTS AS OF JULY 1, 2005**  
**(DOLLARS IN THOUSANDS)**

	NUMBER	ANNUAL RETIREMENT ALLOWANCES
<b>Service Retirement</b>		
<b>a. Employees</b>		
Life Annuity	24,833	\$ 395,226
10 Year Certain and Life	558	8,477
100% J & S	1,658	31,562
100% Pop-up	4,198	85,771
50% J & S	1,066	27,732
50% Pop-up	4,016	102,477
Level Off	<u>3,150</u>	<u>60,614</u>
Total Employees	39,479	\$ 711,859
<b>b. Teachers</b>		
Life Annuity	26,446	\$ 461,572
10 Year Certain and Life	634	10,058
100% J & S	609	9,212
100% Pop-up	2,132	41,382
50% J & S	445	10,325
50% Pop-up	2,536	60,524
Level Off	<u>5,477</u>	<u>122,562</u>
Total Teachers	38,279	\$ 715,635
<b>c. Total</b>		
Life Annuity	51,279	\$ 856,798
10 Year Certain and Life	1,192	18,535
100% J & S	2,267	40,775
100% Pop-up	6,330	127,152
50% J & S	1,511	38,057
50% Pop-up	6,552	163,001
Level Off	<u>8,627</u>	<u>183,176</u>
Total	77,758	\$ 1,427,494

All dollar amounts are in thousands.  
Includes TERI members

**TABLE V-1 (Continued)**  
**NUMBER OF ANNUAL RETIREMENT ALLOWANCES**  
**OF BENEFIT RECIPIENTS AS OF JULY 1, 2005**  
**(DOLLARS IN THOUSANDS)**

	NUMBER	ANNUAL RETIREMENT ALLOWANCES
<b>Disability Retirement</b>		
a. Employees		
Life Annuity	4,716	\$ 53,457
10 Year Certain and Life	163	1,755
100% J & S	390	3,406
100% Pop-up	375	3,444
50% J & S	149	1,950
50% Pop-up	333	4,711
Level Off	0	0
Total Employees	6,126	\$ 68,723
b. Teachers		
Life Annuity	3,429	\$ 41,566
10 Year Certain and Life	96	1,142
100% J & S	151	1,270
100% Pop-up	157	1,556
50% J & S	60	815
50% Pop-up	145	2,314
Level Off	0	0
Total Teachers	4,038	\$ 48,663
c. Total		
Life Annuity	8,145	\$ 95,023
10 Year Certain and Life	259	2,898
100% J & S	541	4,676
100% Pop-up	532	5,000
50% J & S	209	2,765
50% Pop-up	478	7,024
Level Off	0	0
Total	10,164	\$ 117,386
<b>Beneficiaries of Deceased Retired Members and Active Members</b>		
a. Employees	4,671	\$ 46,564
b. Teachers	2,074	18,972
c. Total	6,745	\$ 65,536
<b>Total</b>		
<b>GRAND TOTAL</b>	<b>94,667</b>	<b>\$ 1,610,417</b>

All dollar amounts are in thousands.

# MEMBERSHIP INFORMATION

**TABLE V-2**

**DISTRIBUTION OF ACTIVE MEMBERS AND AVERAGE COMPENSATION  
BY AGE GROUPS AND SERVICE GROUPS AS OF JULY 1, 2005  
YEARS OF SERVICE**

Age Group	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 & Over	Total
Under 25	5,347	74	1						5,422
	\$ 22,980	\$ 24,677							\$ 22,999
25 - 29	11,321	3,237	20						14,578
	\$ 28,614	\$ 33,085	\$ 37,327						\$ 29,618
30 - 34	8,596	8,602	1,940	33					19,171
	\$ 28,677	\$ 36,472	\$ 40,999	\$ 38,876					\$ 33,439
35 - 39	7,847	6,799	5,423	1,982	47				22,098
	\$ 27,788	\$ 34,534	\$ 41,831	\$ 42,095	\$ 37,530				\$ 34,614
40 - 44	7,963	6,594	4,319	5,319	2,285	89			26,569
	\$ 27,002	\$ 32,205	\$ 38,813	\$ 44,637	\$ 46,244	\$ 40,197			\$ 35,443
45 - 49	7,000	6,709	4,556	4,672	4,927	2,559	10		30,433
	\$ 27,320	\$ 32,271	\$ 37,330	\$ 41,791	\$ 49,431	\$ 49,022	\$ 59,646		\$ 37,547
50 - 54	6,082	5,891	4,460	4,394	3,613	3,601	278	1	28,320
	\$ 28,805	\$ 32,922	\$ 36,808	\$ 40,901	\$ 48,082	\$ 51,536	\$ 52,973	\$ 34,155	\$ 38,386
55 - 59	4,652	4,321	3,599	3,715	2,913	1,800	298	42	21,340
	\$ 28,413	\$ 33,667	\$ 36,912	\$ 39,850	\$ 45,214	\$ 49,464	\$ 58,301	\$ 55,662	\$ 37,441
60 - 64	2,171	2,197	1,606	1,576	1,149	690	104	40	9,533
	\$ 25,598	\$ 31,717	\$ 36,683	\$ 39,135	\$ 43,072	\$ 45,476	\$ 66,601	\$ 64,488	\$ 35,269
65 & Over	1,234	1,078	519	319	202	120	51	35	3,558
	\$ 16,472	\$ 21,104	\$ 27,617	\$ 34,834	\$ 45,857	\$ 39,287	\$ 49,987	\$ 46,703	\$ 24,363
TOTAL	62,213	45,502	26,443	22,010	15,136	8,859	741	118	181,022
	\$ 27,340	\$ 33,365	\$ 38,388	\$ 41,705	\$ 47,249	\$ 49,637	\$ 56,913	\$ 55,814	\$ 35,110

	Prior Year	Current Year
Average Age	44.19 Years	44.29 Years
Average Service	9.83 Years	9.58 Years
Average Pay	\$ 33,992	\$ 35,110
Percent Female	69.5%	69.3%

# MEMBERSHIP INFORMATION

<b>TABLE V-3</b> <b>DISTRIBUTION OF PARTICIPANTS RECEIVING BENEFITS AS OF JULY 1, 2005</b> <b>SERVICE RETIREMENT<sup>1</sup></b>			
<b>Current Age Group</b>	<b>Number</b>	<b>Total Annual Benefit</b>	<b>Average Annual Benefit</b>
Under 50	1,409	\$ 20,435,765	\$ 14,504
50 - 54	6,764	168,301,157	24,882
55 - 59	12,030	322,008,508	26,767
60 - 64	12,622	268,399,681	21,264
65 - 69	13,114	211,264,422	16,110
70 - 74	11,308	166,325,970	14,709
75 - 79	8,898	124,795,474	14,025
80 & Over	11,613	145,963,458	12,569
<b>Total</b>	<b>77,758</b>	<b>\$ 1,427,494,435</b>	<b>\$ 18,358</b>
<b>DISABILITY RETIREMENT</b>			
<b>Current Age Group</b>	<b>Number</b>	<b>Total Annual Benefit</b>	<b>Average Annual Benefit</b>
Under 50	1,375	\$ 14,163,630	\$ 10,301
50 - 54	1,435	18,417,462	12,834
55 - 59	2,082	26,578,830	12,766
60 - 64	2,030	24,332,464	11,986
65 - 69	1,396	14,433,477	10,543
70 - 74	835	8,418,844	10,082
75 - 79	513	5,415,504	10,557
80 & Over	525	5,626,125	10,716
<b>Total</b>	<b>10,164</b>	<b>\$ 117,386,336</b>	<b>\$ 11,549</b>
<b>BENEFICIARIES</b>			
<b>Current Age Group</b>	<b>Number</b>	<b>Total Annual Benefit</b>	<b>Average Annual Benefit</b>
Under 50	218	\$ 1,638,395	7,516
50 - 54	243	2,094,703	8,620
55 - 59	442	4,730,842	10,703
60 - 64	509	4,892,142	9,611
65 - 69	576	5,801,983	10,073
70 - 74	776	7,874,625	10,148
75 - 79	917	9,891,544	10,787
80 & Over	3,064	28,611,754	9,338
<b>Total</b>	<b>6,745</b>	<b>\$ 65,535,988</b>	<b>\$ 9,716</b>

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

# **Appendix A**

## **Actuarial Assumptions and Methods**

## ACTUARIAL ASSUMPTIONS

### 1. Investment Rate of Return

7.50% per annum, compounded annually, composed of an assumed 3.00% inflation rate and a 4.50% real rate of return, net of investment and administrative expenses. This assumption reflects a 0.25% increase to the real rate of return component from the prior valuation assumption.

### 2. Salary Increases

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

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

## ACTUARIAL ASSUMPTIONS

### 3. Decrement Rates

#### a. Service Retirement

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

\* Plus the following percentage in year when first become eligible for unreduced service retirement before age 65.

Gender	General Employees	Teachers
Male	30%	40%
Female	45%	40%

## ACTUARIAL ASSUMPTIONS

### b. In-service Mortality and Disability

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

### c. 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
PROBABILITY OF DECREMENT DUE TO WITHDRAWAL											
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

## ACTUARIAL ASSUMPTIONS

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

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

## ACTUARIAL ASSUMPTIONS

### 4. Mortality After Retirement

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

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

### 5. Marriage Assumption

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

### 6. Asset Valuation Method

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

### 7. Cost Methods

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

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

## ACTUARIAL ASSUMPTIONS

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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 6.25% of the value of the current year's earning plus 6.50% of their present value of future earnings after June 30, 2006.

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

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

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

### b. Group Life Insurance Benefit

One-year term cost method.

## 8. **Unused Annual Leave**

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

## 9. **Unused Sick Leave**

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

## ACTUARIAL ASSUMPTIONS

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

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

### 11. Administrative and Investment Expenses

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

### 12. Payroll Growth Rate

4.00% per annum.

### 13. Valuation of Teachers and Employees Retention Incentive (TERI)

We have assumed 80% of all members elect TERI coverage when they are first eligible for an unreduced retirement benefit before age 65. We assume members in the TERI are exposed to adjusted retirement rates during TERI coverage and we assume 100% terminate employment at the end of the TERI period (5 years). The retirement rate is adjusted by the following schedule based on number of years since entering TERI:

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

## ACTUARIAL ASSUMPTIONS

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### 14. Changes from Prior Valuation

1. In the prior valuation, the value of benefits for current and future TERI participants were funded from their date of hire to the date they were expected to exit the TERI, resulting in a normal cost during the TERI period. Beginning with the July 1, 2005 valuation, the current and future TERI participants' benefits are funded from their date of hire to the date they are expected to enter TERI resulting in no normal cost during the TERI period.
2. The liability for non-vested terminated participants identified in the data is equal to their accumulated contributions with interest. In prior valuations, the data was insufficient to identify these participants.
3. This revision reflects an increase in the assumed investment rate of return from 7.25% to 7.50%.

### Adoption Date

The current actuarial assumptions were adopted by the State Budget and Control Board on April 20, 2004. The recommended changes to the methods and assumptions (above) have not yet been approved by the Board at the time of drafting this report.

# **Appendix B**

## **Summary of Plan Provisions**

### 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, 1997, compensation for benefit and contribution purposes is limited in accordance with IRS Code Section 401(a)17.

**5. Normal Retirement**

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

## PLAN PROVISIONS

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### 6. Early Retirement

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

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

Upon meeting normal retirement eligibility, a member can elect to enter the TERI for a maximum of five (5) years, after which employment will cease. The retirement benefits will be accumulated in TERI accounts and will be paid to the members upon the earlier of actual retirement or the end of participation period. The amount credited to the TERI account is based upon the calculation and form of benefit selected by the member at TERI entry. COLAs are credited to the TERI account. No interest is credited to the TERI account. Employee contributions 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 with at least 1 year of creditable service, unless death is job related, and whose employer participates.

## PLAN PROVISIONS

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

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

### 10. Employee Contributions

6.25% of earnable compensation effective July 1, 2005.

6.50% of earnable compensation effective July 1, 2006.

### 11. Vested Benefit Upon Termination

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

### 12. Termination Benefit

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

### 13. Optional Forms of Retirement Income

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

### 14. Cost of Living Adjustment

Beginning the July 1<sup>st</sup> following one year of receiving benefits, the monthly benefit amount will increase by the calendar year change in CPI but not to exceed 1%.

## PLAN PROVISIONS

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Additional ad hoc COLAs may be paid as approved by the State Budget and Control Board and based upon the financial condition of the System.

### 15. Changes from Prior Valuation

The provisions above reflect the changes due to the passage of S618 effective July 1, 2005. These changes include: One percent automatic COLA beginning the July 1<sup>st</sup> following one year of payments; members contribute 6.25% of earning for FY 2006 and 6.50% of earning for all years after FY 2006; participants in TERI and rehired retirees continue to contribute at the same rate as employees, interest credited on accumulated employee contributions is reduced from 6% to 4% annually.