Teachers Retirement Association of Minnesota

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Actuary's Letter

SEGAL

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December 10, 2004

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Board of Trustees
Teachers Retirement Association Fund
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Members of the Board:

We have completed the annual valuation of the Teachers Retirement Association Fund (TRA) as of July 1, 2004. The purpose of this valuation is to determine the financial status of the Plan. To achieve this purpose, an actuarial valuation is made at the beginning of each fiscal year as required by Section 356.215 of Minnesota Statutes.

The financing objective of the Fund is to establish contribution rates that remain approximately level (as a percent of payroll) from generation to generation. The objective also includes meeting the required deadlines for full funding. The current funding level (the ratio of actuarial assets to the actuarial accrued liability) is 100.01%.

The valuation uses the Entry Age Normal Cost method, with normal cost expressed as a level percentage of earnings. The required contribution under Chapter 356 consists of the normal cost, a supplemental contribution which will amortize the unfunded accrued liability as a level percent of pay amount and an allowance for administrative expenses.

The results of the valuation indicate that the TRA is already at the level of full funding. The contribution sufficiency is 1.54% of payroll, which is a result of the statutory contribution of 10.00% of payroll being less than the actuarial required contribution of 8.46% of payroll.

The actuarial valuation was based upon applicable statutory provisions and Standards for Actuarial Work in effect on July 1, 2004. Primary actuarial assumptions include a pre-retirement interest rate of 8.50%, a post-retirement interest rate of 6.00% (the 8.50% interest less 2.50% COLA), and other assumptions regarding mortality, disability, retirement, salary increases, and withdrawal, which are consistent with the latest experience analysis. Actual plan costs will vary to the extent that actual plan experience varies from these assumptions.

The valuation was performed by using the actuarial cost methods and actuarial assumptions that are described in a separate table of this report. The actuarial cost method and the assumptions related to asset valuation, investment return, earnings progression and active member payroll growth are specified by state statute. All other assumptions are based on actual experience with changes recommended by the actuary, adopted by the TRA Board, and approved by the Legislative Commission on Pensions and Retirement. All assumptions and methods used for funding purposes meet the parameters for the

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disclosures presented in the financial section of the TRA comprehensive annual financial report, set by GASB Statement No. 25.

These assumptions meet the parameters set by the Government Accounting Standards Board Statement Number 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans.*

Supporting schedules and trend data schedules shown in the Actuarial Section of this financial report were prepared by The Segal Company.

The Schedule of Funding Progress shown in the Financial Section of this financial report was prepared by The Segal Company. Segal determined the amount of Annual Required Contributions shown in the Schedule of Contributions From Employers and State of Minnesota in the Financial Section of this financial report.

Although we have reviewed the data for reasonableness and consistency, we have relied on the basic employee data and asset figures. This employee and asset information form the basis for our valuation and to the extent that actual data differs from that submitted for purposes of the valuation, results may vary from those shown in the report.

We certify that to the best of our knowledge and belief this actuarial valuation was performed in accordance with the requirements of Section 356.215, Minnesota Statutes, and the requirements of the Standards for Actuarial Work.

Respectfully submitted,

Leslie L. Thompson, FSA, MAAA, EA
Senior Vice President and Actuary

/cvm

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Summary of Actuarial Assumptions and Methods

(Assumptions adopted by the Legislative Commission on Pensions and Retirement on February 22, 2002)

Mortality Rates

Healthy Pre-Retirement:	Male:	1983 Group Annuity Mortality Table for males set back 12 years
	Female:	1983 Group Annuity Mortality Table for females set back 10 years
Healthy Post-Retirement:	Male:	1983 Group Annuity Mortality Table for males set back 6 years
	Female:	1983 Group Annuity Mortality Table for females set back 3 years
Disabled:	Male:	1965 Railroad Retirement Board (RRB) rates through age 54. For ages 55 to 64, graded rates between 1965 RRB rates and the Healthy Post-Retirement mortality table. For ages 65 and later, the Healthy Post-Retirement mortality table.
	Female:	1965 Railroad Retirement Board (RRB) rates through age 54. For ages 55 to 64, graded rates between 1965 RRB rates and the Healthy Post-Retirement mortality table. For ages 65 and later, the Healthy Post-Retirement mortality table.

Summary of Rates: Shown below for selected ages:

Rate (%)

	Pre-Retirement Mortality		Withdrawal		Disability		Retirement		
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Rule of 90 Eligible**	**Other**	**Salary Increases**
20	0.03	0.01	3.70	4.50	0.00	0.00	0.00	0.00	6.00%
25	0.03	0.01	3.20	4.50	0.00	0.00	0.00	0.00	6.00
30	0.04	0.02	2.70	4.50	0.00	0.00	0.00	0.00	6.00
35	0.04	0.03	2.50	3.90	0.01	0.01	0.00	0.00	6.00
40	0.05	0.03	2.35	2.75	0.03	0.03	0.00	0.00	5.70
45	0.07	0.05	2.10	2.10	0.05	0.05	0.00	0.00	5.20
50	0.10	0.07	1.85	1.85	0.11	0.10	0.00	0.00	5.00
55	0.17	0.10	0.00	0.00	0.22	0.16	50.00	9.00	5.00
60	0.31	0.16	0.00	0.00	0.33	0.25	50.00	50.00	5.30
65	0.52	0.25	0.00	0.00	0.00	0.00	50.00	50.00	5.70
70	0.77	0.42	0.00	0.00	0.00	0.00	35.00	35.00	5.70
71	0.84	0.47	0.00	0.00	0.00	0.00	100.00	100.00	5.70

Withdrawal Rates: Select and ultimate rates were based on recent plan experience as of June 30, 2000. Ultimate rates after the third year are shown in the rate table. Select rates are as follows:

	First Year	Second Year	Third Year
Male:	45.00%	12.00%	6.00%
Female:	40.00%	10.00%	8.00%

Salary Increases: Reported salary for prior fiscal year, with new hires annualized, increased according to the ultimate table shown in the rate table to current fiscal year and annually for each future year. During a ten-year select period, 0.30 x (10-T) where T is completed years of service is added to the ultimate rate.

Retirement Age: Graded rates beginning at age 55 as shown in rate table. Members who have attained the highest assumed retirement age will retire in one year.

Percent Married: 85% of male members and 65% of female members are assumed to be married. Assume members have no children.

Age of Spouse: Females three years younger than males.

Net Investment Return:

Pre-Retirement: 8.50% per annum

Post-Retirement: 6.00% per annum

Administrative Expenses: Prior year administrative expenses expressed as percentage of prior year payroll.

Allowance for Combined Service Annuity: Liabilities for active members are increased by 1.40% and liabilities for former members are increased by 4.00% to account for the effect of some Participants having eligibility for a Combined Service Annuity.

Return of Contributions: All employees withdrawing after becoming eligible for a deferred benefit were assumed to take the larger of their contributions accumulated with interest or the value of their deferred benefit.

Interest on Member Contributions: Members and former members who are eligible for the money purchase annuity are assumed to receive interest credits equal to the Pre-Retirement interest rate. All other members and former members receive the interest crediting rate as specified in statutes.

Special Consideration:	Married members assumed to elect subsidized joint and survivor form of annuity as follows: Males: 15% elect 50% J&S option 25% elect 75% J&S option 55% elect 100% J&S option Females: 20% elect 50% J&S option 10% elect 75% J&S option 30% elect 100% J&S option
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 6.00% accounted for by 6.00% post-retirement assumptions.
Asset Valuation Method:	Market Value, adjusted for amortization obligations receivable at the end of each fiscal year, less a percentage of the Unrecognized Asset Return determined at the close of each of the four preceding fiscal years. Unrecognized Asset Return is the difference between actual net return on Market Value of Assets and the asset return expected during the fiscal year (based on the assumed interest rate employed in the July 1 Actuarial Valuation of the fiscal year).
Actuarial Cost Method:	Entry Age Normal Cost Method. Entry age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are expressed as a level percentage of payroll, with Normal Cost determined as if the current benefit accrual rate had always been in effect.
Payment on the Unfunded Actuarial Accrued Liability:	A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 5.00% per annum. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.
Changes in Actuarial Assumptions and Cost Methods:	There have been no changes made to the actuarial assumptions and cost methods since the prior valuation.

Valuation Report Highlights

Summary of Key Valuation Results

	July 1, 2004 Valuation	July 1, 2003 Valuation
Contributions (% of payroll) for plan year beginning July 1:		
Statutory — Chapter 354	10.00%	10.00%
Required — Chapter 356	8.46%	8.37%
Sufficiency/(Deficiency)	1.54%	1.63%
Funding elements for plan year beginning July 1:		
Normal cost	$ 258,898,450	$ 279,583,000
Market value of assets	16,984,605,405	15,907,892,000
Actuarial value of assets (AVA)	17,519,909,350	17,384,179,000
Actuarial accrued liability (AAL)	17,518,783,700	16,856,379,000
Unfunded/(Overfunded) actuarial accrued liability	(1,125,650)	(527,800,000)
Funded ratios:		
Accrued Benefit Funded Ratio	104.77%	107.95%
Current assets (AVA)	$17,519,909,350	$ 17,384,179,000
Current benefit obligations	16,721,495,421	16,103,696,000
Projected Benefit Funded Ratio	104.64%	104.97%
Current and expected future assets	20,721,263,103	20,214,690,000
Current and expected future benefit obligations (Present Value of Benefits)	$19,802,891,699	$ 19,258,017,000
GASB 25/27 for plan year beginning July 1:		
Annual required employee contributions	$ 94,679,310	$ 67,957,000
Accrued Liability Funded Ratio (AVA/AAL)	100.01%	103.13%
Covered actual payroll	$ 3,032,483,365	$ 2,952,887,000
Demographic data for plan year beginning July 1:		
Number of pensioners and beneficiaries	37,649	36,199
Number of vested terminated members	10,767	9,304
Number of other non-vested terminated members	18,223	19,256
Number of active members	72,008	71,916
Total projected payroll	$ 3,206,759,440	$ 3,163,007,000
Average annual payroll (projected dollars)	$ 44,533	$ 43,983

Actuary's Commentary

Purpose

This report has been prepared by The Segal Company to present a valuation of the Teachers Retirement Association Fund as of July 1, 2004. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- Section 356.215 of the Minnesota Statutes;
- The benefit provisions of the Retirement Fund, as administered by the Legislative Commission on Pensions and Retirement;
- The characteristics of covered active members, inactive vested members, pensioners and beneficiaries as of July 1, 2004, provided by the Fund;
- The assets of the Fund as of June 30, 2004, provided by the Fund;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The actuarial accrued liability funded ratio based on the actuarial value of assets over the actuarial accrued liability as of July 1, 2004 is 100.01% compared to 103.13% as of July 1, 2003 (page 55). This ratio is a measure of funding status, and its history is a measure of funding progress, and is the ratio required to be reported under GASB 25.
- As indicated on page 61, the total unrecognized investment loss as of June 30, 2004, is $549,452,647. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. Earnings in excess of 8.50% will help temper possible increases in future contribution requirements.
- The statutory contribution rate under Chapter 354 is equal to 10.00% of payroll compared to the required contribution rate under Chapter 356 of 8.46% of payroll. Therefore the contribution sufficiency is 1.54% of payroll as of July 1, 2004 (page 66).
- There were no changes in plan provisions, actuarial assumptions or actuarial cost methods since the prior valuation. This is the first year that The Segal Company prepared the actuarial valuation of the Fund.

TRA Plan Census

For Years Ended June 30, 2004 and 2003

Category	2004	2003	Change From Prior Year
Active members in valuation:			
Number	72,008	71,916	0.1%
Average age	43.2	43.0	N/A
Average service	11.7	11.6	N/A
Total projected payroll	$3,206,759,440	$3,163,007,000	1.4%
Average projected payroll	44,533	43,893	1.3%
Total active vested members	55,704	55,164	1.0%
Vested terminated members	10,767	9,304	15.7%
Retired participants:			
Number in pay status	34,581	33,290	3.9%
Average age	69.9	68.1	N/A
Average monthly benefit	$2,315	$2,383	(2.9%)
Disabled members:			
Number in pay status	589	558	5.6%
Average age	57.2	57.0	N/A
Average monthly benefit	$1,615	$1,627	(0.7%)
Beneficiaries:			
Number in pay status	2,479	2,351	5.4%
Average age	73.5	72.8	N/A
Average monthly benefit	$2,022	$1,984	1.9%
Other non-vested terminated members	18,223	19,256	(5.4%)

Reconciliation of Member Data

	Active Members	Vested Terminated Members	Other Non-Vested Terminated Members	Retired Members	Disabled	Bene-ficiaries	Total
A. Number as of June 30, 2003	71,916	9,304	19,256	33,290	558	2,351	136,675
B. Additions	5,471	2,593	3,501	1,922	0	235	13,722
C. Deletions:							
1. Retirements	(1,606)	(210)	(76)	0	(30)	0	(1,922)
2. Disability	0	0	0	0	0	0	0
3. Died with beneficiary	(20)	(5)	(2)	(206)	(2)	0	(235)
4. Died without beneficiary	(3)	0	0	(508)	(12)	(2)	(525)
5. Terminated - deferred	(1,731)	0	(862)	0	0	0	(2,593)
6. Terminated - other non-vested	(3,442)	(56)	0	0	0	0	(3,498)
7. Refunds	(382)	(148)	(2,725)	0	0	0	(3,255)
8. Rehired as active	1,808	(739)	(1,069)	0	0	0	0
9. Transfers to other fund	(3)	0	0	0	0	0	(3)
10. Expired benefits	0	0	0	(7)	0	(73)	(80)
D. Data adjustments	0	28	200	90	75	(32)	361
E. Number as of June 30, 2004	72,008	10,767	18,223	34,581	589	2,479	138,647

Statement of Plan Net Assets

Year Ended June 30, 2004

	Market Value	Cost Value
Assets in Trust		
Cash, equivalents, short-term securities	$ 212,315,663	$ 212,315,663
Fixed income	1,438,133,775	1,499,348,241
Equity	5,238,279,026	5,267,896,654
Real estate	0	0
Equity in Minnesota Post-Retirement Investment Fund*	10,092,954,741	10,092,954,741
Invested securities lending collateral	1,693,375,126	1,693,375,126
Other assets	11,973,539	11,973,539
Total assets in trust	$ 18,687,031,870	$ 18,777,863,964
Assets receivable	$ 6,738,235	$ 6,738,235
Liabilities		
Invested Securities Lending Collateral	$ (1,693,375,126)	$ (1,693,375,126)
Other	(29,938,277)	(29,938,277)
Total liabilities	$ (1,723,313,403)	$ (1,723,313,403)
Net assets held in trust for pension benefits		
MPRIF reserves	$ 10,092,954,741	$ 10,092,954,741
Member reserves	1,632,995,023	1,632,995,023
Other non-MPRIF reserves	5,244,506,939	5,335,339,032
Total assets available for benefits	$ 16,970,456,703	$ 17,061,288,796
Net Assets at Market/Cost Value	$ 16,970,456,703	$ 17,061,288,796

* The number shown is the full MPRIF reserve amount. The actual MPRIF market value of $8,218,301,690 is not used for funding purposes because this deficiency is accounted for separately and is expected to be recovered from future excess earnings on MPRI funds.

Statement of Change in Net Plan Assets

Year Ended June 30, 2004

	Non-MPRIF Assets	MPRIF Reserve	Market Value
A. Assets available at beginning of period	$6,194,385,000	$ 9,713,507,000	$ 15,907,892,000
B. Additions			
1. Member contributions	$ 159,139,548	$ 0	$ 159,139,548
2. Employer contributions	151,028,911	0	151,028,911
3. Contributions from other sources	3,365,997	0	3,365,997
4. MPRIF income	0	764,298,463	764,298,463
5. Net investment income			
a. Interest and dividends	638,195,977	0	638,195,977
b. Net appreciation/(depreciation)	379,467,046	0	379,467,046
c. Investment expenses	(8,806,476)	0	(8,806,476)
d. Net subtotal	1,008,856,547	0	1,008,856,547
6. Other	3,900,006	0	3,900,006
7. Total additions	$1,326,291,009	$ 764,298,463	$ 2,090,589,472
C. Operating expenses			
1. Service requirements	$ 0	$ 982,474,587	$ 982,474,587
2. Disability benefits	11,734,673	0	11,734,673
3. Survivor benefits	1,189,666	13,011,545	14,201,211
4. Refunds	6,861,708	0	6,861,708
5. Administrative expenses	12,179,212	0	12,179,212
6. Other	573,378	0	573,378
7. Total operating expenses	$ 32,538,637	$ 995,486,132	$ 1,028,024,769
D. Other changes in reserves			
1. Annuities awarded	$ (596,486,708)	$ 596,486,708	$ 0
2. Mortality gain/loss	(14,148,702)	14,148,702	0
3. Change in MPRIF assumptions	0	0	0
4. Total other changes	(610,635,410)	$ 610,635,410	$ 0
E. Assets available at end of period	$6,877,501,962	$10,092,954,741	$ 16,970,456,703

F. Determination of current year unrecognized asset return	
1. Average balance	
a. Non-MPRIF assets available at BOY: (A)	$ 6,194,385,000
b. Non-MPRIF assets available at EOY*: (E)	6,891,650,644
c. Average balance [(a) + (b) - Net Investment Income] / 2	
Net Investment Income: (B.5 (d)) + (B.6)	6,036,639,556
2. Expected return: 8.50% x (F.1. (c)):	513,114,362
3. Actual return (B.5 (d)) + (B.6)	1,012,756,553
4. Current year unrecognized asset return: (F.3) - (F.2)	$ 499,642,191

*Before adjustment for MPRIF mortality gain (loss) and new MPRIF assumptions.

Determination of Actuarial Value of Assets

Year Ended June 30, 2004

		Original Amount	% Not Recognized	
1.	Market value of assets available for benefits			$16,970,456,703
2.	Calculation of unrecognized return			
	(a) Year ended June 30, 2004	$ 499,642,191	80%	$ 399,713,753
	(b) Year ended June 30, 2003	(401,116,000)	60%	(240,669,600)
	(c) Year ended June 30, 2002	(1,150,511,000)	40%	(460,204,400)
	(d) Year ended June 30, 2001	(1,241,462,000)	20%	(248,292,400)
	(e) Total unrecognized return			$ (549,452,647)
3.	Actuarial value of assets: (1) - (2e) ("Current Assets")			$ 17,519,909,350

Financial Information

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Minnesota Statutes require an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value. Both the actuarial value and market value of assets are representations of the Fund’s financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Fund’s liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

Actuarial Experience

Year Ended June 30, 2004

1.	Net gain/(loss) from investments	$ (594,157,408)
2.	Net gain/(loss) from other experience	15,831,440
3.	Net experience gain/(loss): (1) + (2)	$ (578,325,968)

Actuarial Experience

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss). Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years. The total loss is $578,325,968, including a loss of $594,157,408 from investments and a gain of $15,831,440 from all other sources. The net experience variation from individual sources other than investments was 0.1% of the actuarial accrued liability, which is under 1.0% of the actuarial accrued liability, including age/service retirements, disability, mortality (pre and post-retirement), withdrawal, and salary increases.

Actuarial Balance Sheet

July 1, 2004

A. Current Assets (page 61)			$ 17,519,909,350
B. Expected Future Assets			
1. Present Value of Expected Future Statutory Supplemental Contributions			$ 917,245,754
2. Present Value of Future Normal Costs			2,284,107,999
3. Total Expected Future Assets			$ 3,201,353,753
C. Total Current and Expected Future Assets			$ 20,721,263,103

D. Current Benefit Obligations	**Non-Vested**	**Vested**	**Total**
1. Benefit recipients			
a. Retirement annuities		$ 9,625,271,362	$ 9,625,271,362
b. Disability benefits		143,652,771	143,652,771
c. Beneficiaries		480,058,043	480,058,043
2. Vested terminated members		416,486,946	416,486,946
3. Other non-vested terminated members		42,573,517	42,573,517
4. Active members:			
a. Retirement benefits	$ 32,233,629	$ 5,500,651,937	$ 5,532,885,566
b. Disability benefits	1,025,185	92,081,392	93,106,577
c. Death benefits	561,379	44,299,288	44,860,667
d. Withdrawal benefits	14,032,815	328,567,157	342,599,972
5. Total Current Benefit Obligations	$ 47,853,008	$16,673,642,413	$ 16,721,495,421

E. Expected Future Benefit Obligations	$ 3,081,396,278
F. Total Current and Expected Future Benefit Obligations Present Value of Benefits: (D.5 + E)	$ 19,802,891,699
G. Current Unfunded Actuarial Liability (D.5 – A)	$ (798,413,929)
H. Current and Future Unfunded Actuarial Liability (F – C)	$ (918,371,404)

Determination of Unfunded Actuarial Accrued Liability (UAAL) and Supplemental Contribution Rate

July 1, 2004

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
A. Determination of Actuarial Accrued Liability			
1. Active Members			
a. Retirement benefits	$ 8,290,002,419	$ 1,816,905,486	$ 6,743,096,933
b. Disability benefits	154,070,194	55,494,488	98,575,706
c. Death benefits	71,258,561	23,372,427	47,886,134
d. Withdrawal benefits	579,517,886	388,335,598	191,182,288
e. Total	$ 9,094,849,060	$ 2,284,107,999	$ 6,810,741,061
2. Vested terminated members	$ 416,486,946	—	$ 416,486,946
3. Other non-vested terminated members	42,573,517	—	42,573,517
4. Annuitants in the MPRIF	10,092,954,741	—	10,092,954,741
5. Annuitants not in the MPRIF	156,027,435	—	156,027,435
6. Total	$19,802,891,699	$ 2,284,107,999	$17,518,783,700

B. Determination of Unfunded Actuarial Accrued Liability	
1. Actuarial Accrued Liability	$17,518,783,700
2. Actuarial Value of Assets (page 61)	17,519,909,350
3. Unfunded Actuarial Accrued Liability: (1) - (2)	$ (1,125,650)
C. Determination of Supplemental Contribution Rate	
1. Present value of future payrolls through the amortization date of July 1, 2034	$59,561,412,597
2. Supplemental contribution rate (B.3) ÷ (C.1)	0.00%

Changes in Unfunded Actuarial Accrued Liability (UAAL)

Year Ending June 30, 2004

1.	Unfunded/(Overfunded) actuarial accrued liability at beginning of year			$ (527,800,000)
2.	Normal cost at beginning of year, including expenses			291,762,212
3.	Total contributions			310,168,459
4.	Interest			
	a.	For whole year on (1) + (2)	$ (20,063,212)	
	b.	For half year on (3)	(13,182,159)	
	c.	Total interest: (4a) - (4b)		(33,245,371)
5.	Expected unfunded/(overfunded) actuarial accrued liability: (1) + (2) - (3) + (4)			$ (579,451,618)
6.	Changes due to (gain)/loss from:			
	a.	Investments	$ 594,157,408	
	b.	Demographics*	(15,831,440)	
	c.	Total changes due to (gain)/loss (page 62)		$ 578,325,968
7.	Unfunded/(Overfunded) actuarial accrued liability at end of year			$ (1,125,650)

*Includes (gain)/loss due to age/service retirements, disability, mortality (pre and post-retirement), withdrawal and salary increases.

Determination of Contribution Sufficiency

July 1, 2004

	Percent of Payroll	Dollar Amount
A. Statutory Contributions - Chapter 354		
1. Employee contributions	5.00%	$ 160,337,972
2. Employer contributions	5.00%	160,337,972
3. Total	10.00%	$ 320,675,944
B. Required Contributions - Chapter 356		
1. Normal Cost		
a. Retirement	6.58%	$ 211,001,637
b. Disability	0.18%	5,890,642
c. Death	0.08%	2,574,346
d. Withdrawal	1.23%	39,431,825
e. Total	8.07%	$ 258,898,450
2. Supplemental contribution amortization	0.00%	$ 0
3. Allowance for administrative expenses	0.39%	12,506,362
4. Total	8.46%	$ 271,404,812
C. Contribution Sufficiency (Deficiency) (A.3) - (B.4)	1.54%	$ 49,271,132

Projected annual payroll for fiscal year beginning on the valuation date $3,206,759,440

SolvencyTest

Dollar Amounts in Thousands

	Aggregate Accrued Liabilities				Portion of Actuarial Accrued Liabilities Covered by Reported Assets		
Valuation as of June 30	(1) Member Contributions	(2) Retirees and Beneficiaries	(3) Members (Employer Financed Portion)	Valuation Assets	(1)	(2)	(3)
1994	970,813	3,559,614	4,584,839	7,611,935	100%	100%	67.2%
1995	1,070,347	3,866,694	4,780,582	8,348,124	100%	100%	71.4%
1996	1,164,651	4,319,329	4,882,188	9,541,221	100%	100%	83.1%
1997	1,252,843	4,808,918	4,901,876	11,103,759	100%	100%	100.0%
1998	1,303,006	5,570,230	5,173,076	12,727,546	100%	100%	100.0%
1999	1,321,579	6,751,682	5,186,308	14,011,247	100%	100%	100.0%
2000	1,354,683	8,055,622	5,392,136	15,573,151	100%	100%	100.0%
2001	1,403,755	9,106,198	5,394,031	16,834,024	100%	100%	100.0%
2002	1,483,243	9,555,364	5,464,492	17,378,994	100%	100%	100.0%
2003	1,561,048	9,713,507	5,581,824	17,384,179	100%	100%	100.0%
2004	1,632,995	10,092,955	5,792,834	17,519,909	100%	100%	100.0%

Schedule of Active Member Valuation Data

(Dollar Amounts in Thousands)

Year Ended June 30	Active Members	$ Annual Covered Payroll	$ Annual Average	% Increase in Average Payroll
1995	67,558	2,197,262	32,524	2.8%
1996	68,490	2,252,383	32,888	1.1%
1997	68,554	2,359,011	34,411	4.6%
1998	68,247	2,422,958	35,503	3.2%
1999	68,613	2,625,254	38,262	7.7%
2000	70,508	2,704,575	39,249	2.6%
2001	71,097	2,812,000	39,552	0.8%
2002	71,690	2,873,771	40,086	1.4%
2003	71,916	2,952,887	41,060	2.4%
2004	72,008	3,032,483	42,113	2.6%

Schedule of Retirees and Beneficiaries Added To and Removed From Retirement Rolls

	Added To Rolls		Removed From Rolls		Rolls: June 1, 200X Payment		
Fiscal Year	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances	Average Annual Allowances
2004							
Retirement	1,726	$48,266,626	689	$17,942,943	33,675	$933,150,918	$ 27,710
Disability	74	$ 1,431,398	45	$ 943,335	588	$ 11,462,253	$ 19,494
Beneficiaries	299	$ 6,196,059	137	$ 2,506,367	2,885	$ 62,690,339	$ 21,730
2003							
Retirement	1,752	$45,213,170	681	$16,595,867	32,638	$905,702,949	$ 27,751
Disability	60	$ 838,012	54	$ 1,199,063	559	$ 10,839,002	$ 19,355
Beneficiaries	278	$ 6,006,648	136	$ 2,022,035	2,723	$ 58,540,855	$ 21,499
2002							
Total Benefit Recipients					34,974	$946,344,333	
2001							
Total Benefit Recipients					33,757	$861,787,476	
2000							
Total Benefit Recipients					31,946	$755,036,577	
1999							
Total Benefit Recipients					29,749	$620,937,964	

Note: Detailed data on retirees and beneficiaries added to and removed from rolls is not available prior to FY 2003.