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Teachers Retirement Association Fund
ACTUARIAL VALUATION REPORT

July 1, 2002



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December 5, 2002

Legislative Commission on
Pensions and Retirement
55 State Office Building
St. Paul, Minnesota 55155

RE: Teachers Retirement Association Fund

Commission Members:

Pursuant to the terms of our Actuarial Services Contract, we have performed an actuarial valuation of the Fund as of July 1, 2002.

The results of our calculations are set forth in the following report, as are the actuarial assumptions upon which our calculations have been made. Although we have reviewed the data for reasonableness and consistency, we have relied on the basic employee data and asset figures as submitted by the Teachers Retirement Association.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with the requirements of Section 356.215, Minnesota Statutes, and the requirements of the Standards for Actuarial Work, adopted by the Commission.

We, Thomas K. Custis and William V. Hogan, are actuaries for Milliman USA. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Milliman USA

Thomas K. Custis, F.S.A., M.A.A.A.
Consulting Actuary

William V. Hogan, F.S.A., M.A.A.A.
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TKC/WVH/bh

Teachers Retirement Association Fund

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Teachers Retirement Association Fund
Report Highlights
(dollars in thousands)

	07/01/01 Valuation	07/01/02 Valuation
A. CONTRIBUTIONS % OF PAYROLL (Table 11)		
1. Statutory Contributions - Chapter 354 % of Payroll	10.00%	10.00%
2. Required Contributions - Chapter 356 % of Payroll	7.85%	7.57%
3. Sufficiency (Deficiency)	2.15%	2.43%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$ 16,834,024	\$ 17,378,994
b. Current Benefit Obligations (Table 8)	\$ 15,099,099	\$ 15,715,244
c. Funding Ratio	111.49%	110.59%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$ 16,834,024	\$ 17,378,994
b. Actuarial Accrued Liability (Table 9)	\$ 15,903,984	\$ 16,503,099
c. Funding Ratio	105.85%	105.31%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$ 19,625,868	\$ 20,204,561
b. Current and Expected Future Benefit Obligations	\$ 18,450,268	\$ 18,831,713
c. Funding Ratio	106.37%	107.29%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	71,097	71,690
b. Projected Annual Earnings	\$ 2,937,962	\$ 3,040,422
c. Average Annual Earnings (Projected \$)	\$ 41,323	\$ 42,411
d. Average Age	42.6	42.8
e. Average Service	11.5	11.6
2. Others		
a. Service Retirements (Table 4)	31,169	32,231
c. Survivors (Table 5)	2,070	2,192
b. Disability Retirements (Table 6)	518	551
d. Deferred Retirements (Table 7)	7,959	8,680
e. Terminated Other Non-Vested (Table 7)	19,344	19,022
f. Total	61,060	62,676

Teachers Retirement Association Fund

Commentary

Purpose

The purpose of this valuation is to determine the financial status of the Plan. In order 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.

Report Highlights

The financial status of the Plan can be measured by three different funding ratios:

- The Accrued Benefit Funding Ratio is a measure of current funding status and, when viewed over a period of years, presents a view of the funding progress. It is based upon benefits which have been earned by service to the valuation date. This year's ratio is 110.59%. The corresponding ratio for the prior year was 111.49%.
- The Accrued Liability Funding Ratio is also a measure of funding status and funding progress. It is based on the actuarial cost method that has historically been used by the State. For 2002 the ratio is 105.31%, which is a decrease from the 2001 value of 105.85%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 107.29% verifies that the current statutory contributions are sufficient.

Asset Information (Tables 1 and 2)

Effective with the July 1, 2000 valuation of the fund, Minnesota Statutes require that the asset value used for actuarial purposes spread differences between actual return (measured on a market-value basis) and expected return on non-MPRIF assets over five years, in a manner similar to that already being used within the MPRIIF. The previous method required under Minnesota Statutes recognized one third of the unrealized gains and losses. An Asset Valuation Method requirement exists because market values (which include all unrealized gains and losses) are typically volatile and can produce erratic changes in the contribution requirements from year to year. The intent of the change to the current method is to employ a more effective asset smoothing technique which is market-value based and which eliminates artificial bias related to manager style. The effective date of this requirement is July 1, 2000 with full transition to be accomplished as of July 1, 2003.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines E.1 to E.4. Actuarial Value of Assets is determined as:

Market Value of Assets at June 30, 2002, *less*

80% of the current year Unrecognized Asset Return at July 1, 2002 (the difference between actual net return on Market Value of Assets between June 30, 2001 and June 30,

2002 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 2001 Actuarial Valuation); *less*

60% of the current year Unrecognized Asset Return at July 1, 2001 (the difference between actual net return on Market Value of Assets between June 30, 2000 and June 30, 2001 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 2000 Actuarial Valuation); *less*

40% of the current year Unrecognized Asset Return at July 1, 2000 (the difference between actual net return on Market Value of Assets between June 30, 1999 and June 30, 2000 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 1999 Actuarial Valuation); *less*

10% of the Unrecognized Asset Return at July 1, 1999 (the difference between Market Value of Assets on June 30, 1999 and the Actuarial Value of Assets used in the July 1, 1999 Actuarial Valuation).

Since its adoption on July 1, 2000, the Asset Valuation Method has functioned effectively to smooth the significant variability in market value returns. It is prudent to note, however, that the deferral of recognition of the large market losses of the last two fiscal years means there has accumulated a significant negative return amount that will be recognized over the next few years. This means that in order for asset returns on a "Current Assets" basis to be at or near the assumed 8.5%, market value returns will need to be substantially above 8.5%; conversely, if market value returns are at or near the assumed 8.5%, returns measured on a "Current Assets" basis will be substantially lower, resulting in actuarial losses.

The term "Actuarial Value of Assets" is used to indicate that the value was determined for use in this actuarial valuation. Since Minnesota Statutes refer to this value as "Current Assets," the latter phrase will be used in the remainder of this report.

This Plan participates in the Minnesota Post Retirement Investment Fund (i.e., MPRIF). After the MPRIF liability has been calculated for each participating Plan, the State Board of Investments, (i.e., SBI) will determine each Plan's portion of the excess earnings for the January benefit increase as well as the Plan's allocated market share of MPRIF.

Actuarial Balance Sheet (Table 8)

An actuarial balance sheet provides a method for evaluating current and future levels of funding.

The Current Benefit Obligation used to measure current funding levels is calculated as follows:

- For Active Members – Salary and service are projected to retirement to determine benefits for each member and the ratio of credited service to total service establishes the portion of the projected benefit to be used in calculating the current funding level.

- For Non-Active Members – The discounted value of benefits, including augmentation in cases where benefits have not commenced.

GASB Disclosure

Disclosure of the Current Benefit Obligation amounts used to be required by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 has been superceded by Statement No. 25. Tables 14 and 15 of this report are included to fulfill the requirements of Statement No. 25.

Actuarial Cost Method (Table 9)

The approach used by the State of Minnesota to determine contribution sufficiency is the Entry Age Normal Actuarial Cost Method. The primary characteristic of this method is that it allocates costs as a level percentage of payroll.

A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) illustrates the two techniques for allocating liabilities of active Members to past and future. As noted in the prior section, the balance sheet allocates benefits and corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll. Both approaches, however, calculate the value of all future benefits the same way (see line F of Table 8 and line A6, column 1, of Table 9).

An Unfunded Actuarial Accrued Liability is computed under the Entry Age Normal Actuarial Cost Method by comparing the liabilities allocated to past service (Actuarial Accrued Liability) to the Current Assets. This amount, line B3, is funded over the remaining years to the amortization date by a series of payments that remain a constant percentage of payroll each year.

Source of Actuarial Gains and Losses (Table 10)

The assumptions used in making the calculations using the Entry Age Normal Actuarial Cost Method are based on long-term expectations. Each year the actual experience will deviate from the long-term expectations. For a detailed analysis of the major components, refer to Table 10.

Contribution Sufficiency (Table 11)

This report determines the adequacy of Statutory Contributions by comparing the Statutory Contributions to the Required Contributions.

The Required Contributions, set forth in Chapter 356, consist of:

- Normal costs based on the Entry Age Normal Actuarial Cost Method.
- A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.
- An Allowance for Expenses.

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 10.00% compared to the Required Contribution Rate of 7.57%.

Changes in Actuarial Assumptions

This report reflects the new assumptions which became effective July 1, 2002. These revised assumptions were developed from the recently completed experience study and have been approved by the Commission. Effective with this July 1, 2002 valuation, the following assumptions have been changed:

Assumption	Prior	Revised
Salary increases	Merit table that ranges from 8.0% at age 20 down to 5.0% at age 70.	Ten year select and ultimate table. During the select period, $0.3\% \times (10 - T)$ where T is completed years of service is added to the ultimate rate. Ultimate table ranges from 6.0% at ages 20 to 38 down to 5.0% at ages 47 to 57.
Male Pre-Retirement Mortality	1983 GAM (Male - 10)	1983 GAM (Male - 12)
Female Pre-Retirement Mortality	1983 GAM (Female - 8)	1983 GAM (Female - 10)
Male Post-Retirement Mortality	1983 GAM (Male - 5)	1983 GAM (Male - 6)
Female Post-Retirement Mortality	1983 GAM (Female - 4)	1983 GAM (Female - 3)
Retirement Age	Graded rates beginning at age 55. A different set of rates applies if the Member is eligible for the Rule of 90.	Graded rates beginning at age 55. A different set of rates applies if the Member is eligible for the Rule of 90.
Separation Decrement	Select and ultimate table. Rates during the select period are based on gender.	Select and ultimate table. Rates during the select period are based on gender. Ultimate rates are gender based and generally higher than prior rates.
Disability Decrement	Rates which are both age-related and gender-related.	Rates which are both age-related and gender-related. Revised rates are higher than prior rates especially for females.
Form of Annuity Selected - Male	15% elect 50% J&S option 15% elect 75% J&S option 50% elect 100% J&S option	15% elect 50% J&S option 25% elect 75% J&S option 55% elect 100% J&S option
Form of Annuity Selected - Female	20% elect 50% J&S option 10% elect 75% J&S option 30% elect 100% J&S option	20% elect 50% J&S option 10% elect 75% J&S option 30% elect 100% J&S option
Combined Service Annuity Load Factor	1.0% load on liabilities for active and deferred vested participants.	1.4% load on liabilities for active Members and 4% load on liabilities for former Members.

All other actuarial assumptions are the same as those used in the prior valuation. Table 12 contains a summary of all actuarial assumptions and methods.

Changes in Plan Provisions

Effective with this July 1, 2000 valuation, the following plan provisions have been added or amended:

- Effective July 1, 2002, 655 charter school teachers who were previously covered under a First Class City Teacher Retirement Fund are now covered by this Fund. These Members enter this Fund on July 1, 2002 with no prior service. Future benefits payable under this Fund are based solely on credited service earned on and after July 1, 2002.
- All other plan provisions are the same as those used in the prior actuarial valuation of the Fund. Tables 13A and 13B contain summaries of current plan benefits.

TABLE 1

Teachers Retirement Association Fund
Statement of Plan Net Assets
(dollars in thousands)

July 1, 2002

	Market Value	Cost Value
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-Term Securities	\$ 21,280	\$ 21,280
2. Fixed Income	1,507,110	1,559,990
3. Equity	4,490,447	5,413,254
4. Real Estate	227,316	207,667
5. Equity in MPRIF	9,555,364	9,555,364
6. Invested Securities Lending Collateral	1,190,460	1,190,460
7. Other	12,915	12,915
Subtotal	\$ 17,004,892	\$ 17,960,930
 B. ASSETS RECEIVABLE	 56,537	 56,537
 C. LIABILITIES		
1. Invested Securities Lending Collateral	(1,190,460)	(1,190,460)
2. Other	(17,925)	(17,925)
Subtotal	(1,208,385)	(1,208,385)
 D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	9,555,364	9,555,364
2. Member Reserves	1,483,243	1,483,243
3. Other Non-MPRIF Reserves	4,814,437	5,770,475
4. Total Assets Available for Benefits	<u>\$ 15,853,044</u>	<u>\$ 16,809,082</u>
<hr/>		
E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Market Value of Assets Available for Benefits (D4)		\$ 15,853,044
2. Unrecognized Asset Returns (UAR)		
a. June 30, 2002	(1,150,511)	
b. June 30, 2001	(1,241,462)	
c. June 30, 2000	157,486	
d. June 30, 1999	<u>763,418</u>	
3. UAR Adjustment: $.80 * 2(a) + .60 * 2(b) + .40 * 2(c) + .1 * 2(d)$		(1,525,950)
4. Actuarial Value of Assets (E1 - E3) (Same as "Current Assets")		<u>\$ 17,378,994</u>

TABLE 2

Teachers Retirement Association Fund
Statement of Change In Plan Net Assets
(dollars in thousands)

Year Ending June 30, 2002

	Non-MPRIF Assets	MPRIF Reserve	Market Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$ 7,058,173	\$ 9,106,198	\$ 16,164,371
B. ADDITIONS			
1. Member Contributions	\$ 152,331	0	\$ 152,331
2. Employer Contributions	142,222	0	142,222
3. Contributions From Other Sources	1,122	0	1,122
4. MPRIF Income	0	921,348	921,348
5. Net Investment Income			
a. Interest and Dividends	53,192	0	53,192
b. Net Appreciation/(Depreciation)	(607,922)	0	(607,922)
c. Investment Expenses	(9,559)	0	(9,559)
d. Net Subtotal	(564,289)	0	(564,289)
6. Other	3,366	0	3,366
7. Total Additions	<u>\$ (265,248)</u>	<u>\$ 921,348</u>	<u>\$ 656,100</u>
C. OPERATING EXPENSES			
1. Service Retirements	\$ 1,936	\$ 918,834	\$ 920,770
2. Disability Benefits	11,478	0	11,478
3. Survivor Benefits	1,129	12,967	14,096
4. Refunds	7,353	0	7,353
5. Administrative Expenses	12,912	0	12,912
6. Other	818	0	818
7. Total Disbursements	<u>\$ 35,626</u>	<u>\$ 931,801</u>	<u>\$ 967,427</u>
D. OTHER CHANGES IN RESERVES			
1. Annuities Awarded	(503,741)	503,741	0
2. Mortality Gain (Loss)	9,945	(9,945)	0
3. Change in MPRIF Assumptions	34,177	(34,177)	0
4. Total Other Changes	(459,619)	459,619	0
E. ASSETS AVAILABLE AT END OF PERIOD	<u>\$ 6,297,680</u>	<u>\$ 9,555,364</u>	<u>\$ 15,853,044</u>
F. DETERMINATION OF CURRENT YEAR UNRECOGNIZED ASSET RETURN			
1. Average Balance			
(a) Non-MPRIF Assets Available at Beginning of Period			7,058,173
(b) Non-MPRIF Assets Available at End of Period*			6,253,558
(c) Average Balance {[F1.a + F1.b - B5.d-B6] / 2}			6,936,327
2. Expected Return: .085 * F1.c			589,588
3. Actual Return			(560,923)
4. Current Year UAR: F.3 - F.2			<u>\$ (1,150,511)</u>

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

TABLE 3

Teachers Retirement Association Fund
*Active Members as of July 1, 2002**

Age	Years of Service								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	1,208	933	1	0	0	0	0	0	2,142
25-29	1,586	6,359	951	1	0	0	0	0	8,897
30-34	778	3,283	4,672	631	0	0	0	0	9,364
35-39	744	1,852	2,347	2,683	444	0	0	0	8,070
40-44	980	1,692	1,594	1,782	2,134	443	0	0	8,625
45-49	823	1,528	1,599	1,459	1,478	2,398	791	0	10,076
50-54	597	1,233	1,407	1,579	1,398	1,826	3,818	1,584	13,442
55-59	419	658	672	795	867	930	1,395	2,684	8,420
60-64	221	296	210	209	264	290	315	328	2,133
65+	165	137	61	39	30	22	24	43	521
ALL	7,521	17,971	13,514	9,178	6,615	5,909	6,343	4,639	71,690

Average Annual Earnings

Age	Years of Service								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	17,820	27,574	40,225	0	0	0	0	0	22,079
25-29	14,559	28,670	36,632	468	0	0	0	0	27,002
30-34	11,726	28,492	37,246	44,501	0	0	0	0	32,545
35-39	13,302	28,336	37,949	45,520	50,463	0	0	0	36,676
40-44	11,395	27,478	37,755	45,833	51,232	51,566	0	0	38,457
45-49	10,912	25,580	38,167	45,916	51,392	53,455	56,662	0	42,184
50-54	12,718	25,105	36,432	45,558	51,716	54,522	55,986	57,368	47,480
55-59	12,907	22,595	35,273	44,328	51,591	55,952	58,268	60,152	49,729
60-64	8,955	15,666	28,522	43,396	51,959	56,706	61,329	65,872	43,489
65+	7,016	8,071	17,838	34,465	52,480	58,525	58,541	64,148	22,497
ALL	13,286	27,333	37,088	45,377	51,400	54,215	56,847	59,643	39,146

Prior Fiscal Year Earnings (in millions) by Years of Service

Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
All	100	491	501	417	340	320	361	277	2,806

* Includes 655 charter school teachers who transfer into the Teachers Retirement Association Fund effective July 1, 2002.

TABLE 4

Teachers Retirement Association Fund
Service Retirements as of June 30, 2002

<u>Age</u>	<u>Years Retired</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	32	14	0	0	0	0	0	46
55-59	2,095	1,839	29	0	0	0	0	3,963
60-64	1,487	3,859	1,937	16	0	0	0	7,299
65-69	373	1,578	3,836	1,070	10	2	1	6,870
70-74	42	188	1,939	2,173	1,080	4	0	5,426
75-79	7	21	224	1,217	1,795	326	1	3,591
80-84	1	3	15	192	1,266	810	130	2,417
85+	0	0	2	9	173	959	1,476	2,619
ALL	4,037	7,502	7,982	4,677	4,324	2,101	1,608	32,231

Average Annual Benefit

<u>Age</u>	<u>Years Retired</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	20,302	22,390	0	0	0	0	0	20,938
55-59	29,760	33,062	27,656	0	0	0	0	31,277
60-64	26,004	34,234	32,620	25,292	0	0	0	32,109
65-69	18,534	24,735	31,167	26,593	22,153	5,318	1,271	28,266
70-74	13,608	24,652	27,789	27,516	30,652	12,657	0	28,020
75-79	11,311	15,785	27,727	27,495	32,892	19,924	26,469	29,420
80-84	555	23,896	14,933	25,651	29,357	26,340	13,817	27,108
85+	0	0	1,470	16,781	26,400	25,547	19,710	22,265
ALL	27,057	31,630	30,551	27,195	31,013	24,937	19,226	29,009

Total Annual Benefit (in thousands) by Years Retired

<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
All	109,229	237,288	243,858	127,191	134,100	52,393	30,915	934,989

TABLE 5

Teachers Retirement Association Fund
Survivors as of June 30, 2002

<u>Age</u>	<u>Years Since Death</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	18	37	17	4	1	1	0	78
50-54	19	33	24	5	1	0	0	82
55-59	35	44	47	7	0	1	1	135
60-64	57	85	74	25	6	1	2	250
65-69	67	93	113	55	15	7	3	353
70-74	76	104	132	80	39	17	8	456
75-79	61	104	95	80	46	17	9	412
80-84	27	52	68	40	30	14	21	252
85+	21	26	34	32	15	23	23	174
ALL	381	578	604	328	153	81	67	2,192

Average Annual Benefit

<u>Age</u>	<u>Years Since Death</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	12,789	20,047	19,181	10,792	10,314	4,613	0	17,386
50-54	13,309	18,291	18,775	7,092	3,039	0	0	16,410
55-59	20,567	25,835	23,235	12,901	0	4,573	9,873	22,617
60-64	22,271	28,530	20,719	24,245	11,232	24,529	16,977	23,839
65-69	27,341	26,056	25,396	17,944	26,426	20,848	21,783	24,701
70-74	24,310	27,285	25,549	23,498	21,807	25,814	14,202	24,869
75-79	22,547	24,437	27,752	26,078	23,940	29,903	19,237	25,297
80-84	27,098	28,847	25,981	23,010	31,645	28,134	19,920	26,509
85+	23,727	24,047	19,387	22,549	21,704	24,197	17,757	21,809
ALL	22,984	25,666	24,348	22,470	24,207	25,645	18,249	24,029

Total Annual Benefit (in thousands) by Years Since Death

<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
All	8,757	14,835	14,706	7,370	3,704	2,077	1,223	52,672

TABLE 6

Teachers Retirement Association Fund
Disability Retirements as of June 30, 2002

<u>Age</u>	<u>Years Disabled</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	9	27	17	5	0	0	0	58
50-54	33	38	30	9	1	0	0	111
55-59	35	55	62	10	3	3	0	168
60-64	26	43	82	27	9	7	1	195
65-69	0	9	8	1	1	0	0	19
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	103	172	199	52	14	10	1	551

Average Annual Benefit

<u>Age</u>	<u>Years Disabled</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	10,210	10,162	9,736	6,168	0	0	0	9,700
50-54	15,759	16,350	15,469	13,795	5,177	0	0	15,628
55-59	21,415	21,436	23,222	18,246	15,562	35,930	0	22,055
60-64	21,713	25,264	28,883	18,753	15,089	14,464	4,859	24,449
65-69	0	20,101	22,416	15,207	9,205	0	0	20,245
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	18,699	19,430	23,202	16,519	14,062	20,903	4,859	20,245

Total Annual Benefit (in thousands) by Years Disabled

<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
All	1,926	3,342	4,617	859	197	209	5	11,155

TABLE 7

Teachers Retirement Association Fund
Reconciliation of Members

	<u>Actives</u>	<u>Terminated</u>	
		<u>Deferred Retirement</u>	<u>Other Non-Vested</u>
A. ON JUNE 30, 2001	71,097	7,959	19,344
B. ADDITIONS	5,776	5,448	960
C. DELETIONS			
1. Service Retirement	(1,405)	(696)	0
2. Disability	0	0	0
3. Death	(41)	(55)	0
4. Terminated - Deferred	(5,448)	0	0
5. Terminated - Refund	(464)	0	(966)
6. Terminated - Other Non-Vested	0	0	0
7. Returned as active	1,490	(1,490)	0
8. Transferred to Other Fund	(8)	0	0
9. Transferred from Other Fund	655	0	0
D. DATA ADJUSTMENTS	38	(2,486)	(316)
1. Vested	54,610		
2. Non-Vested	17,080		
E. TOTAL ON JUNE 30, 2002	71,690	8,680	19,022

	<u>Recipients</u>		
	<u>Retirement Annuitants</u>	<u>Disabled</u>	<u>Survivors</u>
A. ON JUNE 30, 2001	31,169	518	2,070
B. ADDITIONS	1,777	91	232
C. DELETIONS			
1. Service Retirement	0	(28)	0
2. Death	(719)	(27)	(30)
3. Annuity Expired	(2)	0	(60)
4. Returned as Active	0	(4)	0
D. DATA ADJUSTMENTS	6	1	(20)
E. TOTAL ON JUNE 30, 2002	32,231	551	2,192

Teachers Retirement Association Fund
Actuarial Balance Sheet
(dollars in thousands)

July 1, 2002

A. CURRENT ASSETS (Table 1, Line E4)				\$ 17,378,994
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)				\$ 496,953
2. Present Value of Future Normal Costs				2,328,614
3. Total Expected Future Assets				<u>\$ 2,825,567</u>
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				<u>\$ 20,204,561</u>
D. CURRENT BENEFIT OBLIGATIONS				
	<u>Non-Vested</u>	<u>Vested</u>		<u>Total</u>
1. Benefit Recipients				
a. Retirement Annuities		\$ 9,143,016		\$ 9,143,016
b. Disability Benefits		139,995		139,995
c. Surviving Spouse and Child Benefits		426,114		426,114
2. Deferred Retirements with Future Augmentation		341,597		341,597
3. Former Members Without Vested Rights		64,770		64,770
4. Active Members				
a. Retirement Annuities	\$ 22,215	5,052,406		5,074,621
b. Disability Benefits	90,436	0		90,436
c. Surviving Spouse and Child Benefits	34,620	0		34,620
d. Deferred Retirements	5,643	272,761		278,404
e. Refund Liability Due to Death or Withdrawal	0	121,671		121,671
5. Total Current Benefit Obligations	<u>\$ 152,914</u>	<u>\$ 15,562,330</u>		<u>\$ 15,715,244</u>
E. EXPECTED FUTURE BENEFIT OBLIGATIONS				<u>\$ 3,116,469</u>
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				<u>\$ 18,831,713</u>
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D5 - A)				\$ (1,663,750)
H. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F - C)				\$ (1,372,848)

Teachers Retirement Association Fund
**Determination of Unfunded Actuarial Accrued Liability (UAAL) and
 Supplemental Contribution Rate**
(dollars in thousands)

July 1, 2002

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$ 7,825,752	\$ 1,828,348	\$ 5,997,404
b. Disability Benefits	153,416	59,714	93,702
c. Survivor's Benefits	59,279	24,114	35,165
d. Deferred Retirements	501,359	251,440	249,919
e. Refunds Due to Death or Withdrawal	176,415	164,998	11,417
f. Total	<u>\$ 8,716,221</u>	<u>\$ 2,328,614</u>	<u>\$ 6,387,607</u>
2. Deferred Retirements With Future Augmentation	341,597		341,597
3. Former Members Without Vested Rights	64,770		64,770
4. Annuitants in MPRIF	9,555,364		9,555,364
5. Recipients Not in MPRIF	153,761		153,761
6. Total	<u>\$ 18,831,713</u>	<u>\$ 2,328,614</u>	<u>\$ 16,503,099</u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$ 16,503,099
2. Current Assets (Table 1; Line E4)			17,378,994
3. UAAL (B1 - B2)			<u>\$ (875,895)</u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2032			56,471,909
2. Supplemental Contribution Rate (B3/C1)			-1.55%

Teachers Retirement Association Fund
Changes in Unfunded Actuarial Accrued Liability (UAAL)
(dollars in thousands)

Year Ending June 30, 2002

A. UAAL AT BEGINNING OF YEAR	\$ (930,040)
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$ 280,681
2. Contributions	(294,553)
3. Interest on A, B1, and B2	<u>(79,643)</u>
4. Total (B1+B2+B3)	<u>\$ (93,515)</u>
C. EXPECTED UAAL AT END OF YEAR (A+B4)	\$ (1,023,555)
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	\$ (119,422)
2. Investment Return	351,134
3. MPRIF Mortality	(9,945)
4. Mortality of Other Benefit Recipients	(420)
5. Other Items	<u>11,405</u>
6. Total	<u>\$ 232,752</u>
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D6)	\$ (790,803)
F. CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGE IN ACTUARIAL METHODS	0
G. CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	<u>(85,092)</u>
H. UAAL AT END OF YEAR (E+F+G)	<u><u>\$ (875,895)</u></u>

Teachers Retirement Association Fund
Determination of Contribution Sufficiency
(dollars in thousands)

July 1, 2002

	<u>Percent of Payroll</u>	<u>Dollar Amount</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	5.00%	\$ 152,031
2. Employer Contributions	5.00%	152,031
3. Total	<u>10.00%</u>	<u>\$ 304,062</u>
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	6.96%	\$ 211,722
b. Disability Benefits	0.21%	6,425
c. Survivors	0.08%	2,495
d. Deferred Retirement Benefits	0.76%	23,046
e. Refunds Due to Death or Withdrawal	<u>0.67%</u>	<u>20,521</u>
f. Total	<u>8.68%</u>	<u>\$ 264,209</u>
2. Supplemental Contribution Amortization by July 1, 2032 of UAAL	-1.55%	(47,127)
3. Allowance for Expenses	<u>0.44%</u>	<u>13,378</u>
4. Total	<u>7.57%</u>	<u>\$ 230,460</u>
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	2.43%	73,602
Note: Projected Annual Payroll for Fiscal Year Beginning on the Valuation Date:		\$ 3,040,422

Teachers Retirement Association Fund

*Summary of Actuarial Assumptions and Methods**(Please note that these are new assumptions effective July 1, 2002.)*

<i>Interest:</i>	Pre-Retirement: 8.5% per annum Post-Retirement: 8.5% per annum
<i>Benefit Increases After Retirement:</i>	Payment of earnings on retired reserves in excess of 6% accounted for by 6% post-retirement assumptions.
<i>Interest on Member Contributions:</i>	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.
<i>Salary Increases:</i>	Reported salary for prior fiscal year, with new hires annualized, increased according to the ultimate table below to current fiscal year and annually for each future year. During a 10-year select period, $0.3 \times (10 - T)$ where T is completed years of service is added to the ultimate rate.
<i>Mortality:</i>	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. Post-Retirement: Male - Same as above except set back 6 years. Female - Same as above except set back 3 years. Post-Disability: Male - 1965 RRB rates through age 54. For ages 55 to 64, graded rates between 1965 RRB rates and the Post-Retirement mortality table. For ages 65 and later, the Post-Retirement mortality table. Female - 1965 RRB rates through age 54. For ages 55 to 64, graded rates between 1965 RRB rates and the Post-Retirement mortality table. For ages 65 and later, the Post-Retirement mortality table.

TABLE 12
(Continued)

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.

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

<u>Gender</u>	<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>
Male	.45	.12	.06
Female	.40	.10	.08

Disability: Rates as shown in table.

Allowance for Combined Service Annuity: Liabilities for active Members are increased by 1.4% and liabilities for former Members are increased by 4% to account for the effect of some Participants having eligibility for a Combined Service Annuity.

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

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.

Family Composition: 85% of male Members and 65% of female Members are assumed to be married. Female is three years younger than male. Assume Members have no children.

Social Security: N/A

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

<i>Actuarial Cost Method:</i>	Entry Age Normal Actuarial Cost Method with normal costs expressed as a level percentage of earnings. Under this method, Actuarial Gains (Losses) reduce (increase) the Unfunded Actuarial Accrued Liability.
<i>Asset Valuation Method:</i>	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). Transition rules apply between July 1, 2001 and July 1, 2003, when the method is fully in effect.
<i>Payment on the Unfunded Actuarial Accrued Liability:</i>	A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 5% per annum. If there is a negative Unfunded Actuarial Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.

TABLE 12
(Continued)

Separation Expressed as Number of Occurrences Per 10,000:

<u>Age</u>	<u>Pre-Retirement Death</u>		<u>Withdrawal</u>		<u>Disability</u>		<u>Retirement</u>		<u>Salary Increases</u>
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Rule of 90 Eligible</u>	<u>Other</u>	
20	3	1	370	450	0	0	0	0	6.00%
21	3	1	360	450	0	0	0	0	6.00
22	3	1	350	450	0	0	0	0	6.00
23	3	1	340	450	0	0	0	0	6.00
24	3	1	330	450	0	0	0	0	6.00
25	3	1	320	450	0	0	0	0	6.00
26	3	1	310	450	0	0	0	0	6.00
27	3	2	300	450	0	0	0	0	6.00
28	3	2	290	450	0	0	0	0	6.00
29	3	2	280	450	0	0	0	0	6.00
30	4	2	270	450	0	0	0	0	6.00
31	4	2	260	450	1	1	0	0	6.00
32	4	2	250	450	1	1	0	0	6.00
33	4	2	250	430	1	1	0	0	6.00
34	4	2	250	410	1	1	0	0	6.00
35	4	3	250	390	1	1	0	0	6.00
36	4	3	250	370	2	2	0	0	6.00
37	5	3	250	350	2	2	0	0	6.00
38	5	3	245	325	2	2	0	0	5.90
39	5	3	240	300	2	2	0	0	5.80
40	5	3	235	275	3	3	0	0	5.70
41	6	4	230	250	3	3	0	0	5.60
42	6	4	225	225	3	3	0	0	5.50
43	6	4	220	220	4	4	0	0	5.40
44	7	4	215	215	4	4	0	0	5.30
45	7	5	210	210	5	5	0	0	5.20
46	8	5	205	205	6	6	0	0	5.10
47	9	5	200	200	7	7	0	0	5.00
48	9	6	195	195	8	8	0	0	5.00
49	10	6	190	190	9	9	0	0	5.00

TABLE 12
(Continued)

Separation Expressed as Number of Occurrences Per 10,000:

<u>Age</u>	<u>Pre-Retirement Death</u>		<u>Withdrawal</u>		<u>Disability</u>		<u>Retirement Rule of 90</u>		<u>Salary Increases</u>
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Eligible</u>	<u>Other</u>	<u>Male</u>
50	10	7	185	185	11	10	0	0	5.00%
51	11	7	180	180	13	11	0	0	5.00
52	12	8	175	175	15	12	0	0	5.00
53	14	8	170	170	17	13	0	0	5.00
54	15	9	165	165	19	14	0	0	5.00
55	17	10	0	0	22	16	5,000	900	5.00
56	19	11	0	0	24	18	5,000	900	5.00
57	22	12	0	0	26	20	5,000	900	5.00
58	25	14	0	0	28	22	5,000	900	5.10
59	28	15	0	0	30	24	5,000	1,200	5.20
60	31	16	0	0	33	25	5,000	1,200	5.30
61	35	18	0	0	37	26	5,000	2,000	5.40
62	39	19	0	0	41	27	5,000	2,000	5.50
63	43	21	0	0	46	28	5,000	2,000	5.60
64	48	23	0	0	52	29	5,000	2,000	5.70
65	52	25	0	0	0	0	5,000	5,000	5.70
66	57	28	0	0	0	0	3,500	3,500	5.70
67	61	31	0	0	0	0	3,500	3,500	5.70
68	66	34	0	0	0	0	3,500	3,500	5.70
69	71	38	0	0	0	0	3,500	3,500	5.70
70	77	42	0	0	0	0	3,500	3,500	5.70
71	84	47	0	0	0	0	10,000	10,000	5.70

Teachers Retirement Association Fund
Schedule of Funding Progress
(dollars in thousands)

July 1, 2002

Actuarial Valuation Date	Actuarial Value of Assets (A)	Actuarial Accrued Liability (B)	Unfunded AAL (UAAL) (B)-(A)	Funded Ratio (A)/(B)	Actual Covered Payroll (Previous FY) (C)	UAAL as % of Covered Payroll ((B)-(A))/(C)
07/01/91	\$ 5,614,924	\$ 7,213,720	\$ 1,598,796	77.84%	\$ 1,943,375	82.27%
07/01/92	6,324,733	7,662,522	1,337,789	82.54%	1,989,624	67.24%
07/01/93	7,045,937	8,266,059	1,220,122	85.24%	2,065,881	59.06%
07/01/94	7,611,936	9,115,266	1,503,330	83.51%	2,150,300	69.91%
07/01/95	8,348,124	9,717,623	1,369,499	85.91%	2,204,693	62.12%
07/01/96	9,541,221	10,366,168	824,947	92.04%	2,268,390	36.37%
07/01/97	11,103,759	10,963,637	(140,122)	101.28%	2,359,011	-5.94%
07/01/98	12,727,546	12,046,312	(681,234)	105.66%	2,422,957	-28.12%
07/01/99	14,011,247	13,259,569	(751,678)	105.67%	2,625,254	-28.63%
07/01/00	15,573,151	14,802,441	(770,710)	105.21%	2,704,575	-28.50%
07/01/01	16,834,024	15,903,984	(930,040)	105.85%	2,812,000	-33.07%
07/01/02	17,378,994	16,503,099	(875,895)	105.31%	2,873,771	-30.48%

Teachers Retirement Association Fund
Schedule of Employer Contributions
(dollars in thousands)

July 1, 2002

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contributions [(A)*(B)]-(C)	Actual Employer Contributions ⁽¹⁾	Percentage Contributed
1991	13.11%	\$ 1,943,375	\$ 89,313	\$ 165,463	\$ 159,439	96.36%
1992	13.04%	1,989,624	91,506	167,941	162,370	96.68%
1993	13.13%	2,065,881	94,709	176,541	168,071	95.20%
1994	12.75%	2,150,300	100,803	173,360	171,855	99.13%
1995	14.73%	2,204,693	143,536	181,215	179,672	99.15%
1996	14.30%	2,268,390	148,051	176,329	184,495	104.63%
1997	12.78%	2,359,011	154,161	147,321	191,670	130.10%
1998	9.55% ⁽²⁾	2,422,957	124,096	107,296	151,323	141.03%
1999	8.39% ⁽²⁾	2,625,254	132,040	88,219	130,526	147.96%
2000	8.36% ⁽²⁾	2,704,575	138,696	87,406	134,419	153.79%
2001	7.92% ^{(2),(3)}	2,812,000	145,075	77,635	139,799	180.07%
2002	7.85% ⁽²⁾	2,873,771	152,331	73,260	142,222	194.13%
2003	7.57% ^{(2),(4)}					

⁽¹⁾ Includes contributions from other sources (if applicable.)

⁽²⁾ Actuarially Required Contributions calculated according to parameters of GASB 25 using a 30-year amortization of the negative unfunded actuarial accrued liability.

⁽³⁾ Actuarially Required Contribution Rate prior to change in Actuarial Assumptions and Asset Valuation Method is 7.31%.

⁽⁴⁾ Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 8.11%.

TABLE 3A
BASIC

Teachers Retirement Association Fund
Active Members as of June 30, 2002

Age	Years of Service								ALL
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0
45-49	0	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	5	5
ALL	0	0	0	0	0	0	0	5	5

Average Annual Earnings

Age	Years of Service								ALL
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0
45-49	0	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	45,415	45,415
ALL	0	0	0	0	0	0	0	45,415	45,415

Prior Fiscal Year Earnings (in thousands) by Years of Service

Age	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>ALL</u>
All	0	0	0	0	0	0	0	227	227

TABLE 4A
BASIC

Teachers Retirement Association Fund
Service Retirements as of June 30, 2002

<u>Age</u>	<u>Years Retired</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	2	10	25	1	0	0	0	38
65-69	16	43	320	265	4	0	0	648
70-74	4	15	137	370	442	2	0	970
75-79	0	1	23	144	562	149	0	879
80-84	0	1	0	27	317	315	69	729
85+	0	0	1	1	46	296	602	946
ALL	22	70	506	808	1,371	762	671	4,210

Average Annual Benefit

<u>Age</u>	<u>Years Retired</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	32,949	59,152	51,249	3,364	0	0	0	51,106
65-69	37,584	47,615	62,322	56,625	35,153	0	0	58,238
70-74	46,567	45,190	49,106	52,457	50,289	12,593	0	50,777
75-79	0	48,352	34,210	45,712	52,509	30,310	0	47,149
80-84	0	4,363	0	40,825	45,594	36,069	19,532	38,778
85+	0	0	904	3,986	40,605	35,004	25,570	29,204
ALL	38,796	48,136	56,798	52,113	49,744	34,468	24,949	44,246

Total Annual Benefit (in thousands) by Years Retired

<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
All	854	3,370	28,740	42,107	68,199	26,265	16,741	186,276

TABLE 5A
BASIC

Teachers Retirement Association Fund
Survivors as of June 30, 2002

<u>Age</u>	<u>Years Since Death</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	2	1	1	0	1	0	5
50-54	0	1	0	0	0	0	0	1
55-59	0	0	1	0	0	0	1	2
60-64	2	4	2	4	1	1	2	16
65-69	14	16	17	8	7	5	3	70
70-74	18	23	31	21	13	11	7	124
75-79	4	16	15	25	13	4	7	84
80-84	10	16	19	5	9	6	15	80
85+	7	6	8	11	2	7	11	52
ALL	55	84	94	75	45	35	46	434

Average Annual Benefit

<u>Age</u>	<u>Years Since Death</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	15,493	33,384	27,734	0	4,613	0	19,343
50-54	0	36,156	0	0	0	0	0	36,156
55-59	0	0	64,838	0	0	0	9,873	37,355
60-64	37,658	41,465	39,845	33,457	35,726	24,529	16,977	34,306
65-69	48,968	51,000	40,367	35,416	36,958	27,802	21,783	41,917
70-74	33,433	48,221	40,875	36,212	31,406	28,843	12,064	36,681
75-79	63,489	35,297	52,284	33,892	31,033	41,538	22,296	37,809
80-84	40,018	31,477	34,236	46,242	59,910	33,604	22,835	35,861
85+	30,266	41,282	24,002	24,924	37,735	40,877	17,057	28,365
ALL	40,521	41,359	39,979	34,107	38,240	32,552	19,127	36,311

Total Annual Benefit (in thousands) by Years Since Death

<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
All	2,229	3,474	3,758	2,558	1,721	1,139	880	15,759

TABLE 6A
BASIC

Teachers Retirement Association Fund
Disability Retirements as of June 30, 2002

<u>Age</u>	<u>Years Disabled</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	0	0	0	0	0

Average Annual Benefit

<u>Age</u>	<u>Years Disabled</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	0	0	0	0	0

Total Annual Benefit (in thousands) by Years Disabled

<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
All	0	0	0	0	0	0	0	0

Teachers Retirement Association Fund
Determination of Contribution Sufficiency
(dollars in thousands)

July 1, 2002

	<u>Percent of Payroll</u>	<u>Dollar Amount</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	9.00%	\$ 22
2. Employer Contributions	9.00%	22
3. Total	<u>18.00%</u>	<u>\$ 44</u>
 B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	5.83%	\$ 14
b. Disability Benefits	0.00%	0
c. Survivors	0.00%	0
d. Deferred Retirement Benefits	0.00%	0
e. Refunds Due to Death or Withdrawal	<u>1.67%</u>	<u>4</u>
f. Total	<u>7.50%</u>	<u>\$ 18</u>

Note: Projected Annual Payroll for Fiscal Year Beginning on the Valuation Date: \$ 240

Teachers Retirement Association Fund

Summary of Plan Provisions

This summary of provisions reflects the interpretation of applicable Statutes by the Commission Actuary for purposes of preparing this valuation. This interpretation is not intended to create or rescind any benefit rights in conflict with any Minnesota Statutes.

GENERAL

Eligibility:

A public school or MNSCU teacher who is not covered by the Social Security Act, except for teachers employed by Minneapolis, St. Paul, or Duluth public schools or by the University of Minnesota. Effective July 1, 2002, charter school teachers employed by Minneapolis, St. Paul, or Duluth public schools are covered by this fund.

No MNSCU teacher is a Member if that person elected coverage under Chapter 354B.

Contributions:

Member: 9.0% of salary.

Employer: 9.0% of salary.

Allowable Service: A day of credit is earned if five hours are taught that day. A year is earned if 170 days of service are credited. Credit may also be provided for certain leaves if contributions are paid into the fund.

Salary: Compensation used for contribution purposes excluding lump-sum annual or sick leave payments, severance payments, any payments made in lieu of employer paid fringe benefits or expenses, and employer contributions to a Section 457 deferred compensation plan.

Average Salary: Average of the five highest successive years of salary. Average Salary is based on all Allowable Service if less than five years.

RETIREMENT

Normal Retirement:

Eligibility: Age 65 and three years of Allowable Service. Age 62 and 30 years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.

Early Retirement Eligibility:

Eligibility: Age 55 and three years of Allowable Service. Any age with 30 years of Allowable Service. Rule of 90: Age plus Allowable Service totals 90.

Retirement Amount: The greater of 2.2% of Average Salary for each of the first 10 years of Allowable Service and 2.7% of Average Salary for each subsequent year with reduction of 0.25% for each month the Member is under age 65 at time of retirement or under age 62 if 30 years of Allowable Service. No reduction if age plus years of Allowable Service totals 90;

OR

2.7% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3% per year and actuarial reduction for each month the Member is under age 65;

OR

for eligible Members, money purchase annuity equal to the actuarial equivalent of 220% of the Member's accumulated deductions plus interest thereon.

Form of Payment: Life annuity.
Actuarially equivalent options are:
50%, 75% or 100% joint and survivor with bounce back feature without additional reduction.
15 year certain and life.
Guaranteed refund.

Benefit Increases: Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF). A Member who has been receiving a benefit for at least 12 full months as of June 30 will receive a full increase. Members receiving benefits for at least

TABLE 13A
BASIC
(Continued)

one full month but less than 12 full months will receive a partial pro rata increase.

Members retired under laws in effect before July 1, 1973 receive an additional lump-sum payment from TRA each year. In 1989, this lump-sum payment was the greater of \$25 times each full year of Allowable Service or the difference between \$400 times each full year of Allowable Service and the sum of the benefits paid from any Minnesota public pension plan plus cash payments from the Social Security Administration for the preceding fiscal year July 1, 1988 through June 30, 1989. In each following year, the lump-sum payment increases by the same percentage increase that is applied to regular annuities paid from MPRIF. Effective January 1, 2002, annual lump sum payment is divided by 12 and paid as a monthly life annuity in the annuity form elected.

Members who terminate service after June 30, 1997 and whose benefits commence during the period July 2, 1997 through July 1, 2002 shall receive a percentage of the July 1, 1997 permanent increase as follows:

July 2, 1997 - July 1, 1999	50%
July 2, 1999 - July 1, 1999	40%
July 2, 1999 - July 1, 2001	30%
July 2, 2001 - July 1, 2001	20%
July 2, 2001 - July 1, 2002	10%

DISABILITY

Disability Benefit:

Eligibility: Total and permanent disability before normal retirement age with three years of Allowable Service.

Amount: Normal Retirement Benefit based on Allowable Service and Average Salary at disability without reduction for commencement before normal retirement age unless an optional annuity plan is selected. Supplemental benefit of \$25 per month.

TABLE 13A
BASIC
(Continued)

A Member who became disabled before July 1, 1997 whose benefit does not commence until after June 30, 1997 shall receive an actuarially equivalent increase to reflect the change from 5% to 6% in the post-retirement interest assumption.

Payments stop at normal retirement age or the five year anniversary of the effective date of the disability benefit, whichever is later. Payments stop earlier if disability ceases or death occurs. Benefits may be reduced on resumption of partial employment. If death occurs before retirement status, the surviving spouse and dependent children are eligible for survivor benefits.

Form of Payment: Same as for retirement.

Benefit Increases: Adjusted by TRA to provide same increase as MPRIF.

Members who become disabled after June 30, 1997 and whose benefits commence during the period July 1, 1997 through July 1, 2002 shall receive a percentage of the July 1, 1997 permanent increase as follows:

July 2, 1997 - July 1, 1999	50%
July 2, 1999 - July 1, 1999	40%
July 2, 1999 - July 1, 2001	30%
July 2, 2001 - July 1, 2001	20%
July 2, 2001 - July 1, 2002	10%

Retirement After Disability:

Eligibility: Normal retirement age or the five year anniversary of the effective date of the disability benefit, whichever is later.

Amount: Any optional annuity continues. Otherwise, the larger of the disability benefit paid before normal retirement age or the normal retirement benefit available at normal retirement age, or an actuarially equivalent optional annuity.

Benefit Increases: Same as for retirement.

DEATH

Surviving Spouse Benefit:

<i>Eligibility:</i>	Active Member with 18 months of Allowable Service or Member receiving a disability benefit.
<i>Amount:</i>	50% of salary for the last full fiscal year preceding death. Maximum family benefit is \$1,000 per month. Benefits paid until spouse's death.
	Surviving spouse optional annuity or refund of contributions may be elected in lieu of this benefit.

Surviving Dependent Child Benefit:

<i>Eligibility:</i>	Active Member with 18 months of Allowable Service or Member receiving a disability benefit.
<i>Amount:</i>	10% of salary for the last full fiscal year preceding death. Family benefit minimum (including spouse's benefit) of 50% of salary and maximum \$1,000 per month. Benefits paid until child marries, dies, or attains age 18 (age 22 if full-time student.)

Surviving Spouse Optional Annuity:

<i>Eligibility:</i>	Member or former Member with three years of Allowable Service who dies before retirement or disability benefits commence.
<i>Amount:</i>	Survivor's payment of the 100% joint and survivor benefit or an actuarial equivalent term certain annuity. If commencement is prior to age 65 (age 62 if 30 years of service), the benefit is reduced same as early retirement with half the applicable reduction factor used from age 55 to the actual commencement age. If no surviving spouse, then an actuarial equivalent dependent child benefit is paid to age 20 or for five years if longer.

TABLE 13A
BASIC
(Continued)

A survivor of a Member who terminated service before July 1, 1997 whose benefit does not commence until after June 30, 1997 shall receive an actuarially equivalent increase to reflect the change from 5% to 6% in the post-retirement interest assumption.

Benefit Increases: Adjusted by TRA to provide same increase as MPRIF except surviving spouse optional annuity benefit increases which are paid from MPRIF.

Survivors of Members who terminate service and die after June 30, 1997 and whose benefits commence during the period July 2, 1997 through July 1, 2002 shall receive a percentage of the July 1, 1997 permanent increase as follows:

July 2, 1997 - July 1, 1999	50%
July 2, 1999 - July 1, 1999	40%
July 2, 1999 - July 1, 2001	30%
July 2, 2001 - July 1, 2001	20%
July 2, 2001 - July 1, 2002	10%

Refund of Contributions:

Eligibility: Member dies before receiving any retirement benefits and survivor benefits are not elected.

Amount: The excess of the Member's contributions over any disability benefits paid plus 5% interest compounded annually if death occurred before May 16, 1989 and 6% interest compounded annually if death occurred on or after May 16, 1989.

TERMINATION

Refund of Contributions:

Eligibility: Thirty days following termination of teaching service.

Amount: Member's contributions with 5% interest compounded annually if termination occurred before May 16, 1989 and 6% interest compounded annually if termination occurred on or

TABLE 13A
BASIC
(Continued)

after May 16, 1989. A deferred annuity may be elected in lieu of a refund.

Deferred Benefit:

Eligibility:

Vested at date of termination. Current requirement is three years of Allowable Service.

Amount:

Benefit computed under law in effect at termination and increased by the following percentage compounded annually: 0% before 7/1/71; 5% from 7/1/71 to 1/1/81; and 3% thereafter until January 1 of the year following attainment of age 55 and 5% thereafter until the annuity begins. Amount is payable as a normal or early retirement.

A Member who terminated service before July 1, 1997 whose benefit does not commence until after June 30, 1997 shall receive an actuarially equivalent increase to reflect the change from 5% to 6% in the post-retirement interest assumption;

OR

for eligible former Members, money purchase annuity equal to the actuarial equivalent of 220% of the former Member's accumulated deductions plus interest thereon.

Members who terminate service after June 30, 1997 and whose benefits commence during the period July 2, 1997 through July 1, 2002 shall receive a percentage of the July 1, 1997 permanent increase as follows:

July 2, 1997 - July 1, 1999	50%
July 2, 1999 - July 1, 1999	40%
July 2, 1999 - July 1, 2001	30%
July 2, 2001 - July 1, 2001	20%
July 2, 2001 - July 1, 2002	10%

SUMMARY OF SIGNIFICANT CHANGES

Effective July 1, 2002, charter school teachers previously covered by a First Class City Teachers Retirement Fund are covered by this Fund.

**TABLE 3B
COORDINATED**

**Teachers Retirement Association Fund
Active Members as of July 1, 2002***

<u>Age</u>	<u>Years of Service</u>								<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	1,208	933	1	0	0	0	0	0	2,142
25-29	1,586	6,359	951	1	0	0	0	0	8,897
30-34	778	3,283	4,672	631	0	0	0	0	9,364
35-39	744	1,852	2,347	2,683	444	0	0	0	8,070
40-44	980	1,692	1,594	1,782	2,134	443	0	0	8,625
45-49	823	1,528	1,599	1,459	1,478	2,398	791	0	10,076
50-54	597	1,233	1,407	1,579	1,398	1,826	3,818	1,584	13,442
55-59	419	658	672	795	867	930	1,395	2,684	8,420
60-64	221	296	210	209	264	290	315	328	2,133
65+	165	137	61	39	30	22	24	38	516
ALL	7,521	17,971	13,514	9,178	6,615	5,909	6,343	4,634	71,685

Average Annual Earnings

<u>Age</u>	<u>Years of Service</u>								<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	17,820	27,574	40,225	0	0	0	0	0	22,079
25-29	14,559	28,670	36,632	468	0	0	0	0	27,002
30-34	11,726	28,492	37,246	44,501	0	0	0	0	32,545
35-39	13,302	28,336	37,949	45,520	50,463	0	0	0	36,676
40-44	11,395	27,478	37,755	45,833	51,232	51,566	0	0	38,457
45-49	10,912	25,580	38,167	45,916	51,392	53,455	56,662	0	42,184
50-54	12,718	25,105	36,432	45,558	51,716	54,522	55,986	57,368	47,480
55-59	12,907	22,595	35,273	44,328	51,591	55,952	58,268	60,152	49,729
60-64	8,955	15,666	28,522	43,396	51,959	56,706	61,329	65,872	43,489
65+	7,016	8,071	17,838	34,465	52,480	58,525	58,541	66,615	22,275
ALL	13,286	27,333	37,088	45,377	51,400	54,215	56,847	59,658	39,146

Prior Fiscal Year Earnings (in millions) by Years of Service

<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>ALL</u>
All	100	491	501	417	340	320	361	277	2,806

* Includes 655 charter school teachers who transfer into the Teachers Retirement Association Fund effective July 1, 2002.

TABLE 4B
COORDINATED

Teachers Retirement Association Fund

Service Retirements as of June 30, 2002

<u>Age</u>	<u>Years Retired</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	32	14	0	0	0	0	0	46
55-59	2,095	1,839	29	0	0	0	0	3,963
60-64	1,485	3,849	1,912	15	0	0	0	7,261
65-69	357	1,535	3,516	805	6	2	1	6,222
70-74	38	173	1,802	1,803	638	2	0	4,456
75-79	7	20	201	1,073	1,233	177	1	2,712
80-84	1	2	15	165	949	495	61	1,688
85+	0	0	1	8	127	663	874	1,673
ALL	4,015	7,432	7,476	3,869	2,953	1,339	937	28,021

Average Annual Benefit

<u>Age</u>	<u>Years Retired</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	20,302	22,390	0	0	0	0	0	20,938
55-59	29,760	33,062	27,656	0	0	0	0	31,277
60-64	25,995	34,169	32,376	26,753	0	0	0	32,010
65-69	17,681	24,094	28,331	16,707	13,487	5,318	1,271	25,145
70-74	10,139	22,871	26,168	22,398	17,047	12,720	0	23,066
75-79	11,311	14,157	26,985	25,050	23,950	11,182	26,469	23,673
80-84	555	33,662	14,933	23,168	23,934	20,149	7,352	22,067
85+	0	0	2,037	18,380	21,255	21,325	15,673	18,341
ALL	26,993	31,475	28,775	21,991	22,316	19,513	15,127	26,720

Total Annual Benefit (in thousands) by Years Retired

<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
All	108,377	233,922	215,122	85,083	65,899	26,128	14,174	748,721

**TABLE 5B
COORDINATED**

**Teachers Retirement Association Fund
Survivors as of June 30, 2002**

<u>Age</u>	<u>Years Since Death</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	18	35	16	3	1	0	0	73
50-54	19	32	24	5	1	0	0	81
55-59	35	44	46	7	0	1	0	133
60-64	55	81	72	21	5	0	0	234
65-69	53	77	96	47	8	2	0	283
70-74	58	81	101	59	26	6	1	332
75-79	57	88	80	55	33	13	2	328
80-84	17	36	49	35	21	8	6	172
85+	14	20	26	21	13	16	12	122
ALL	326	494	510	253	108	46	21	1,758

Average Annual Benefit

<u>Age</u>	<u>Years Since Death</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	12,789	20,307	18,293	5,145	10,314	0	0	17,252
50-54	13,309	17,732	18,775	7,092	3,039	0	0	16,166
55-59	20,567	25,835	22,330	12,901	0	4,573	0	22,396
60-64	21,711	27,892	20,188	22,491	6,333	0	0	23,123
65-69	21,628	20,872	22,745	14,971	17,210	3,463	0	20,442
70-74	21,479	21,340	20,845	18,972	17,007	20,261	29,171	20,458
75-79	19,674	22,462	23,152	22,526	21,145	26,323	8,530	22,092
80-84	19,499	27,678	22,780	19,691	19,531	24,032	12,634	22,160
85+	20,457	18,876	17,966	21,305	19,238	16,899	18,398	19,014
ALL	20,026	22,997	21,468	19,020	18,360	20,389	16,325	20,997

Total Annual Benefit (in thousands) by Years Since Death

<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
All	6,529	11,361	10,949	4,812	1,983	938	343	36,913

TABLE 6B
COORDINATED

Teachers Retirement Association Fund

Disability Retirements as of June 30, 2002

<u>Age</u>	<u>Years Disabled</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	9	27	17	5	0	0	0	58
50-54	33	38	30	9	1	0	0	111
55-59	35	55	62	10	3	3	0	168
60-64	26	43	82	27	9	7	1	195
65-69	0	9	8	1	1	0	0	19
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	103	172	199	52	14	10	1	551

Average Annual Benefit

<u>Age</u>	<u>Years Disabled</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	10,210	10,162	9,736	6,168	0	0	0	9,700
50-54	15,759	16,350	15,469	13,795	5,177	0	0	15,628
55-59	21,415	21,436	23,222	18,246	15,562	35,930	0	22,055
60-64	21,713	25,264	28,883	18,753	15,089	14,464	4,859	24,449
65-69	0	20,101	22,416	15,207	9,205	0	0	20,245
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	18,699	19,430	23,202	16,519	14,062	20,903	4,859	20,245

Total Annual Benefit (in thousands) by Years Disabled

<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
All	1,926	3,342	4,617	859	197	209	5	11,155

COORDINATED

Teachers Retirement Association Fund
Determination of Contribution Sufficiency
(dollars in thousands)

July 1, 2002

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	5.00%	\$ 152,009
2. Employer Contributions	5.00%	152,009
3. Total	<u>10.00%</u>	<u>\$ 304,018</u>
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	6.96%	\$ 211,708
b. Disability Benefits	0.21%	6,425
c. Survivors	0.08%	2,495
d. Deferred Retirement Benefits	0.76%	23,046
e. Refunds Due to Death or Withdrawal	<u>0.67%</u>	<u>20,517</u>
f. Total	<u>8.68%</u>	<u>\$ 264,191</u>
Note: Projected Annual Payroll for Fiscal Year Beginning on the Valuation Date:		\$ 3,040,182

Teachers Retirement Association Fund Coordinated

Summary of Plan Provisions

This summary of provisions reflects the interpretation of applicable Statutes by the Commission Actuary for purposes of preparing this valuation. This interpretation is not intended to create or rescind any benefit rights in conflict with any Minnesota Statutes.

GENERAL

Eligibility:

A public school or MNSCU teacher who is covered by the Social Security Act, except for teachers employed by Minneapolis, St. Paul, or Duluth public schools or by the University of Minnesota. Effective July 1, 2002, charter school teachers employed by Minneapolis, St. Paul, or Duluth public schools are covered by this fund.

No MNSCU teacher will become a new Member unless that person elects coverage under Chapter 354.

Contributions:

Member: 5.0% of salary.

Employer: 5.0% of salary.

Allowable Service: A day of credit is earned if five hours are taught that day. A year is earned if 170 days of service are credited. Credit may also be provided for certain leaves if contributions are paid into the fund.

Salary: Compensation used for contribution purposes excluding lump-sum annual or sick leave payments, severance payments, any payments made in lieu of employer paid fringe benefits or expenses, and employer contributions to a Section 457 deferred compensation plan.

Average Salary: Average of the five highest successive years of salary. Average Salary is based on all Allowable Service if less than five years.

RETIREMENT

Normal Retirement:

Eligibility:

First hired before July 1, 1989:

Age 65 and three years of Allowable Service. Age 62 and 30 years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.

First hired after June 30, 1989:

The greater of age 65 or the age eligible for full Social Security retirement benefits (but not to exceed age 66) and three years of Allowable Service. Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.

Early Retirement:

Eligibility:

First hired before July 1, 1989:

Age 55 and three years of Allowable Service.
Any age with 30 years of Allowable Service.
Rule of 90: Age plus Allowable Service totals 90.

First hired after June 30, 1989:

Age 55 with three years of Allowable Service.

Retirement Amount: First hired before July 1, 1989:

The greater of 1.2% of Average Salary for each of the first 10 years of Allowable Service and 1.7% of Average Salary for each subsequent year with reduction of 0.25% for each month the Member is under age 65 at time of retirement (age 62 if 30 years of Allowable Service). No reduction if age plus years of Allowable Service totals 90;

OR

1.7% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3% per year and actuarial reduction for each month the Member is under age 65;

OR

for eligible Members, money purchase annuity equal to the actuarial equivalent of 220% of the Member's accumulated deductions plus interest thereon.

TABLE 13B
COORDINATED
(Continued)

First hired after June 30, 1989:

1.7% of Average Salary for each year of Allowable Service assuming augmentation to age eligible for full Social Security retirement benefits at 3% per year and actuarial reduction for each month the Member is under the full Social Security benefit retirement age but not to exceed age 66.

Form of Payment:

Life annuity.

Actuarially equivalent options are:

50%, 75% or 100% joint and survivor with bounce back feature without additional reduction.

15 year certain and life.

Guaranteed refund.

Benefit Increases:

Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF). A Member who has been receiving a benefit for at least 12 full months as of the previous June 30 will receive a full increase. Members receiving benefits for at least one full month but less than 12 full months will receive a partial pro rata increase.

Members retired under laws in effect before July 1, 1973 receive an additional lump-sum payment from TRA each year. In 1989, this lump-sum payment was \$25 times each full year of Allowable Service. In each following year, the lump-sum payment increases by the same percentage increase that is applied to regular annuities paid from MPRIF.

Members who terminate service after June 30, 1997 and whose benefits commence during the period July 2, 1997 through July 1, 2002 shall receive a percentage of the July 1, 1997 permanent increase as follows:

July 2, 1997 - July 1, 1999	50%
July 2, 1999 - July 1, 1999	40%
July 2, 1999 - July 1, 2001	30%
July 2, 2001 - July 1, 2001	20%
July 2, 2001 - July 1, 2002	10%

DISABILITY

Disability Benefit:

Eligibility: Total and permanent disability before normal retirement age with three years of Allowable Service.

Amount: Normal Retirement Benefit based on Allowable Service and Average Salary at disability without reduction for commencement before normal retirement age unless an optional annuity plan is selected.

Payments stop at normal retirement age or the five year anniversary of the effective date of the disability benefit, whichever is later. Payments stop earlier if disability ceases or death occurs. Benefits may be reduced on resumption of partial employment.

A Member who became disabled before July 1, 1997 whose benefit does not commence until after June 30, 1997 shall receive an actuarially equivalent increase to reflect the change from 5% to 6% in the post-retirement interest assumption.

Form of Payment: Same as for retirement.

Benefit Increases: Adjusted by TRA to provide same increase as MPRIF.

Members who become disabled after June 30, 1997 and whose benefits commence during the period July 1, 1997 through July 1, 2002 shall receive a percentage of the July 1, 1997 permanent increase as follows:

July 2, 1997 - July 1, 1999	50%
July 2, 1999 - July 1, 1999	40%
July 2, 1999 - July 1, 2001	30%
July 2, 2001 - July 1, 2001	20%
July 2, 2001 - July 1, 2002	10%

Retirement After Disability:

<i>Eligibility:</i>	Normal retirement age or the five year anniversary of the effective date of the disability benefit, whichever is later.
<i>Amount:</i>	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before normal retirement age or the normal retirement benefit available at normal retirement age, or an actuarially equivalent optional annuity.
<i>Benefit Increases:</i>	Same as for retirement.

DEATH

Surviving Spouse Optional Annuity:

<i>Eligibility:</i>	Member or former Member with three years of Allowable Service who dies before retirement benefits commence.
<i>Amount:</i>	<p>Survivor's payment of the 100% joint and survivor benefit or an actuarial equivalent term certain annuity. If commencement is prior to age 65 (age 62 if 30 years of service), the benefit is reduced same as early retirement with half the applicable reduction factor used from age 55 to the actual commencement age. If no surviving spouse, then an actuarial equivalent dependent child benefit is paid to age 20 or for five years if longer.</p> <p>A survivor of a Member who terminated service before July 1, 1997 whose benefit does not commence until after June 30, 1997 shall receive an actuarially equivalent increase to reflect the change from 5% to 6% in the post-retirement interest assumption.</p>

TABLE 13B
COORDINATED
(Continued)

Benefit Increases: Same as for retirement.

Survivors of Members who terminate service and die after June 30, 1997 and whose benefits commence during the period July 2, 1997 through July 1, 2002 shall receive a percentage of the July 1, 1997 permanent increase as follows:

July 2, 1997 - July 1, 1999	50%
July 2, 1999 - July 1, 1999	40%
July 2, 1999 - July 1, 2001	30%
July 2, 2001 - July 1, 2001	20%
July 2, 2001 - July 1, 2002	10%

Refund of Contributions:

Eligibility: Member dies before receiving any retirement benefits and the surviving spouse optional annuity is not elected.

Amount: The excess of the Member's contributions over any disability benefits paid plus 5% interest compounded annually if death occurred before May 16, 1989 and 6% interest compounded annually if death occurred on or after May 16, 1989.

TERMINATION

Refund of Contributions:

Eligibility: Thirty days following termination of teaching service.

Amount: Member's contributions with 5% interest compounded annually if termination occurred before May 16, 1989 and 6% interest compounded annually if termination occurred on or after May 16, 1989. A deferred annuity may be elected in lieu of a refund.

TABLE 13B
COORDINATED
(Continued)

Deferred Benefit:

Eligibility: Vested at date of termination. Current requirement is three years of Allowable Service.

Amount: The greater of benefit computed under law in effect at termination and increased by the following percentage compounded annually: 0% before 7/1/71; 5% from 7/1/71 to 1/1/81; and 3% thereafter until January 1 of the year following attainment of age 55 and 5% thereafter until the annuity begins. Amount is payable as a normal or early retirement. A Member who terminated service before July 1, 1997 whose benefit does not commence until after June 30, 1997 shall receive an actuarially equivalent increase to reflect the change from 5% to 6% in the post-retirement interest assumption;

OR

for eligible former Members, money purchase annuity equal to the actuarial equivalent of 220% of the former Member's accumulated deductions plus interest thereon.

Members who terminate service after June 30, 1997 and whose benefits commence during the period July 2, 1997 through July 1, 2002 shall receive a percentage of the July 1, 1997 permanent increase as follows:

July 2, 1997 - July 1, 1999	50%
July 2, 1999 - July 1, 1999	40%
July 2, 1999 - July 1, 2001	30%
July 2, 2001 - July 1, 2001	20%
July 2, 2001 - July 1, 2002	10%

SUMMARY OF SIGNIFICANT CHANGES

Effective July 1, 2002, charter school teachers previously covered by a First Class City Teachers Retirement Fund are covered by this Fund.

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