

Teachers Retirement Association Fund
ACTUARIAL VALUATION REPORT

July 1, 1995



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December 15, 1995

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

RE: Teachers Retirement Association Fund


Commission Members:

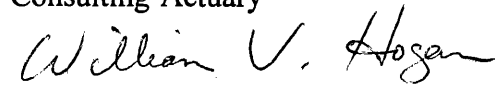
Pursuant to the terms of our Actuarial Services Contract, we have performed an actuarial valuation of the Fund as of July 1, 1995.

The results of our calculations are set forth in the following report, as are the actuarial assumptions upon which our calculations have been made. 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 on July 8, 1992.

Respectfully submitted,


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Consulting Actuary


William V. Hogan, F.S.A., M.A.A.A.
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Teachers Retirement Association Fund

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Teachers Retirement Association Fund

Report Highlights (dollars in thousands)

	07/01/94 Valuation	07/01/95 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 354 % of Payroll	14.66%	14.66%
2. Required Contributions - Chapter 356 % of Payroll	14.73%	14.30%
3. Sufficiency (Deficiency): (A.1. - A.2.)	-0.07%	0.36%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$7,611,935	\$8,348,124
b. Current Benefit Obligations (Table 8)	\$8,463,676	\$9,049,649
c. Funding Ratio: (a/b)	89.94%	92.25%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$7,611,935	\$8,348,124
b. Actuarial Accrued Liability (Table 9)	\$9,115,266	\$9,717,623
c. Funding Ratio: (a/b)	83.51%	85.91%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$11,407,437	\$12,234,567
b. Current and Expected Future Benefit Obligations	\$11,434,495	\$12,095,200
c. Funding Ratio: (a/b)	99.76%	101.15%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	66,514	67,558
b. Projected Annual Earnings	\$2,235,636	\$2,325,059
c. Average Annual Earnings (Actual \$)	\$33,612	\$34,416
d. Average Age	42.8	42.9
e. Average Service	12.5	12.5
2. Others		
a. Service Retirements (Table 4)	20,563	21,458
b. Survivors (Table 5)	1,229	1,331
c. Disability Retirements (Table 6)	345	379
d. Deferred Retirements (Table 7)	4,499	5,103
e. Terminated Other Non-vested (Table 7)	16,147	16,411
f. Total	42,783	44,682

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 92.25%. The corresponding ratio for the prior year was 89.94%.
- ° 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 1995 the ratio is 85.91%, which is an increase from the 1994 value of 83.51%.
- ° The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 101.15% verifies that the current statutory contributions are sufficient.

Asset Information (Tables 1 and 2)

Minnesota Statutes require that the asset value used for actuarial purposes recognize only a third of the unrealized gains and losses. This requirement exists because market values (which include all unrealized gain and losses) are typically volatile and can produce erratic changes in the contribution requirements from year to year.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines F1 to F6. It combines the cost value of the Assets Available for Benefits and one-third of the difference between the market value and cost value of those assets.

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 in accordance with Statement No. 5 of the Governmental Accounting Standards Board (GASB). Those requirements are:

- ° 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

The Current Benefit Obligation amounts in Table 8 are required to be disclosed by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 uses the terms "Actuarial Present Value of Credited Projected Benefits" and "Pension Benefit Obligation" rather than "Current Benefit Obligation".

The JULY 1, 1995 Pension Benefit Obligation reported in Table 8 is reformatted for GASB reporting purposes in the following table:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	\$4,069,675,000
Current Employees	
Accumulated employee contributions including allocated investment income	\$2,397,859,000
Employer-financed vested	2,306,963,000
Employer-financed nonvested	<u>275,152,000</u>
Total Pension Benefit Obligation	\$9,049,649,000
Net Assets Available for Benefits at Cost	\$8,226,082,000
Total Benefit Obligation less Assets	\$823,567,000
Funded Ratio	90.90%

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 the 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.

The payments will increase 5.00% each year because that is the assumed rate of increase in payroll. Although the payment schedule will be adequate to amortize the existing unfunded, the lower payments in the earlier years will not be sufficient to cover the interest on the unfunded liability. After a few years, the annual payment will cover the interest and also repay a portion of the unfunded.

Sources 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 expectation. 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 14.66% compared to the Required Contribution Rate of 14.30%.

Changes in Actuarial Assumptions

There were no changes in Actuarial Assumptions for the current valuation.

Changes in Plan Provisions

There were no change in Plan Provisions which affected plan costs for the current valuation.

TABLE 1

Teachers Retirement Association Fund

Accounting Balance Sheet*(dollars in thousands)*

JULY 1, 1995

	Market Value	Cost Value
A. ASSETS		
1. Cash, Equivalents, Short-term Securities	\$59,914	\$59,914
2. Investments		
a. Fixed Income	1,312,024	1,286,035
b. Equity	3,409,373	3,069,236
c. Real Estate	0	0
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	3,790,813	3,790,813
4. Other	42,991	42,991
B. TOTAL ASSETS	<u>\$8,615,115</u>	<u>\$8,248,989</u>
C. AMOUNTS CURRENTLY PAYABLE	\$22,907	\$22,907
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$1,070,347	\$1,070,347
2. Employer Reserves	3,731,048	3,364,922
3. MPRIF Reserves	3,790,813	3,790,813
4. Non-MPRIF Reserves	0	0
5. Total Assets Available for Benefits	<u>\$8,592,208</u>	<u>\$8,226,082</u>
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	<u>\$8,615,115</u>	<u>\$8,248,989</u>
<hr/>		
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$8,226,082
2. Market Value (D5)	\$8,592,208	
3. Cost Value (D5)	8,226,082	
4. Market Over Cost: (F2-F3)	<u>\$366,126</u>	
5. 1/3 of Market Over Cost: (F4)/3		122,042
6. Actuarial Value of Assets (F1+F5) (Same as "Current Assets")		<u>\$8,348,124</u>

TABLE 2

Teachers Retirement Association Fund

Change In Assets Available For Benefits
(dollars in thousands)

YEAR ENDING JUNE 30, 1995

	<u>Market Value</u>	<u>Cost Value</u>
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$7,651,376	\$7,592,216
B. OPERATING REVENUES		
1. Member Contributions	\$143,536	\$143,536
2. Employer Contributions	179,672	179,672
3. Investment Income	368,949	368,949
4. MPRIF Income	297,153	297,153
5. Net Realized Gain (Loss)	0	0
6. Other	553	553
7. Net Change in Unrealized Gain (Loss)	306,966	0
8. Total Revenue	<u>\$1,296,829</u>	<u>\$989,863</u>
C. OPERATING EXPENSES		
1. Service Retirements	\$328,765	\$328,765
2. Disability Benefits	4,967	4,967
3. Survivor Benefits	5,125	5,125
4. Refunds	4,619	4,619
5. Investment Fees	6,847	6,847
6. Administrative Expenses	3,666	3,666
7. Other	2,008	2,008
8. Total Disbursements	<u>\$355,997</u>	<u>\$355,997</u>
D. OTHER CHANGES IN RESERVES	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	<u>\$8,592,208</u>	<u>\$8,226,082</u>

TABLE 3

Teachers Retirement Association Fund

ACTIVE MEMBERS AS OF JUNE 30, 1995

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	1,490	183							1,673
25-29	2,946	4,102	604						7,652
30-34	954	2,490	3,142	430	1				7,017
35-39	1,096	1,643	2,030	2,157	533	1			7,460
40-44	1,168	1,858	1,953	1,590	3,269	937	1		10,776
45-49	908	1,564	1,821	1,425	2,216	4,520	1,601		14,055
50-54	508	688	895	938	1,168	2,070	3,593	531	10,391
55-59	220	332	412	415	617	907	1,640	1,730	6,273
60-64	146	164	116	110	192	329	477	371	1,905
65+	85	64	31	26	24	36	44	46	356
ALL	9,521	13,088	11,004	7,091	8,020	8,800	7,356	2,678	67,558

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	15,565	24,079							16,496
25-29	13,821	24,270	28,454						20,577
30-34	12,248	22,484	30,330	34,355	27,524				25,334
35-39	12,111	22,374	30,602	35,684	39,558	28,911			28,182
40-44	11,472	20,433	31,007	36,668	41,238	43,239	33,241		32,069
45-49	11,674	18,947	31,204	36,208	41,511	44,415	45,654		36,605
50-54	10,086	18,038	28,736	34,939	41,841	46,247	47,170	47,875	39,989
55-59	8,614	14,251	25,094	31,887	40,141	45,876	48,185	49,396	41,615
60-64	9,021	9,313	22,821	29,938	39,316	47,074	48,787	49,789	38,616
65+	4,796	4,419	22,399	29,054	41,449	45,117	53,020	52,788	26,743
ALL	12,773	21,643	30,115	35,495	41,158	44,972	47,204	49,207	32,457

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	122	283	331	252	330	396	347	132	2,193

TABLE 4

Teachers Retirement Association Fund
SERVICE RETIREMENTS AS OF JUNE 30, 1995

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		1						1
50-54	13	10						23
55-59	597	1,156	22	1				1,776
60-64	550	3,126	898	5				4,579
65-69	190	1,651	2,102	823	4			4,770
70-74	15	220	1,493	1,572	260	3		3,563
75-79	1	20	187	1,461	861	112	1	2,643
80-84			13	189	1,326	449	69	2,046
85+		1	1	4	159	1,323	569	2,057
ALL	1,366	6,185	4,716	4,055	2,610	1,887	639	21,458

AVERAGE ANNUAL BENEFIT

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		11,507						11,508
50-54	18,060	15,015						16,736
55-59	22,514	19,798	15,897	3,005				20,654
60-64	19,580	21,889	17,605	13,561				20,763
65-69	14,348	15,821	16,806	16,080	5,098			16,232
70-74	8,536	16,819	14,216	16,212	8,973	13,582		14,851
75-79	3,475	9,973	13,326	14,847	13,697	6,205	14,044	13,958
80-84			8,006	13,295	13,217	10,169	5,289	12,255
85+		698	4,293	2,321	10,225	8,742	7,770	8,569
ALL	19,988	19,644	15,969	15,538	12,758	8,939	7,512	15,942

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED								
AGE	<1	1-4	5-9	10-14	15-19	20-24	25+	ALL
ALL	27,304	121,498	75,310	63,007	33,298	16,868	4,800	342,083

TABLE 5

Teachers Retirement Association Fund
SURVIVORS AS OF JUNE 30, 1995

AGE	YEARS SINCE DEATH							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+</u>	
<50	10	34	9		1			54
50-54	11	26	4	1	1		1	44
55-59	14	49	19	7	2	1		92
60-64	15	96	54	21	5	3	2	196
65-69	22	93	87	43	7	6	4	262
70-74	17	125	91	47	23	3	4	310
75-79	15	68	72	39	7	9	6	216
80-84	3	31	27	18	20	7	7	113
85+	1	11	7	4	8	6	7	44
ALL	108	533	370	180	74	35	31	1,331

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							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+</u>	
<50	9,422	9,476	3,393		2,256			8,319
50-54	13,211	11,035	7,522	2,314	4,997		3,423	10,752
55-59	15,561	12,957	8,113	7,960	7,381	8,696		11,806
60-64	20,310	15,466	12,180	14,075	12,855	6,212	3,715	14,455
65-69	14,445	15,767	13,238	13,694	13,089	9,295	3,494	14,070
70-74	17,888	13,439	13,543	12,812	13,344	9,291	5,719	13,472
75-79	12,917	14,622	14,337	12,580	16,828	14,995	4,296	13,841
80-84	21,622	9,856	12,353	10,371	13,518	8,292	3,857	11,027
85+	9,486	10,029	6,915	8,136	5,902	9,758	6,074	7,933
ALL	15,297	13,669	12,624	12,525	12,435	10,358	4,613	12,990

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH								
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+</u>	ALL
ALL	1,652	7,286	4,671	2,255	920	363	143	17,290

TABLE 6

Teachers Retirement Association Fund
DISABILITY RETIREMENTS AS OF JUNE 30, 1995

<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	6	39	13	3				61
50-54	9	35	14	7				65
55-59	9	55	26	11	4	1		106
60-64	6	60	49	15	7	1		138
65-69		5	2	2				9
70-74								
75-79								
80-84								
85+								
ALL	30	194	104	38	11	2		379

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	9,399	7,684	5,430	3,953				7,189
50-54	11,660	12,067	8,983	16,791				11,855
55-59	18,610	14,291	10,998	7,880	6,029	2,547		12,762
60-64	21,837	17,265	13,670	17,155	8,030	6,548		15,630
65-69		10,108	17,103	12,921				12,288
70-74								
75-79								
80-84								
85+								
ALL	15,329	13,374	11,408	13,138	7,303	4,548		12,743

<u>TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS DISABLED</u>								
<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	460	2,595	1,186	499	80	9		4,830

TABLE 7

Teachers Retirement Association Fund

Reconciliation Of Members

	Actives	Terminated	
		Deferred Retirement	Other Non-Vested
A. ON JUNE 30, 1994	66,514	4,499	16,147
B. ADDITIONS	6,772	881	3,392
C. DELETIONS			
1. Service Retirement	(1,151)	(227)	0
2. Disability	(44)	0	0
3. Death	(59)	(50)	0
4. Terminated - Deferred	(3,948)	0	0
5. Terminated - Refund	(526)	0	(912)
6. Terminated - Other Non-Vested	0	0	(1,169)
7. Returned as Active	0	0	(1,301)
8. Transferred to Other Fund	0	0	0
D. DATA ADJUSTMENTS	0	0	254
Vested	50,211		
Non-Vested	17,347		
E. TOTAL ON JUNE 30, 1995	67,558	5,103	16,411

	Recipients		
	Retirement Annuitants	Disabled	Survivors
A. ON JUNE 30, 1994	20,563	345	1,229
B. ADDITIONS	1,373	85	174
C. DELETIONS			
1. Service Retirement	0	(18)	0
2. Death	(480)	(21)	(19)
3. Annuity Expired	(3)	0	(50)
4. Returned as Active	0	(12)	0
D. DATA ADJUSTMENTS	5	0	(3)
E. TOTAL ON JUNE 30, 1995	21,458	379	1,331

TABLE 8

Teachers Retirement Association Fund

Actuarial Balance Sheet*(dollars in thousands)*

JULY 1, 1995

A. CURRENT ASSETS (TABLE 1, F6)				\$8,348,124
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)				\$1,508,866
2. Present Value of Future Normal Costs				2,377,577
3. Total Expected Future Assets				<u>\$3,886,443</u>
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				<u>\$12,234,567</u>
D. CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>		<u>Total</u>
1. Benefit Recipients				
a. Retirement Annuities		\$3,674,555		\$3,674,555
b. Disability Benefits		46,792		46,792
c. Surviving Spouse and Child Benefits		145,347		145,347
2. Deferred Retirements with Future Augmentation		187,866		187,866
3. Former Members without Vested Rights		15,115		15,115
4. Active Members				
a. Retirement Annuities	12,675	4,540,724		4,553,399
b. Disability Benefits	218,659	0		218,659
c. Survivor's Benefits	42,900	0		42,900
d. Deferred Retirements	918	114,830		115,748
e. Refund Liability Due to Death or Withdrawal	0	49,268		49,268
5. Total Current Benefit Obligations	<u>\$275,152</u>	<u>\$8,774,497</u>		<u>\$9,049,649</u>
E. EXPECTED FUTURE BENEFIT OBLIGATIONS				<u>\$3,045,551</u>
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				<u>\$12,095,200</u>
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)				\$701,525
H. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)				(\$139,367)

TABLE 9

Teachers Retirement Association Fund

**Determination Of Unfunded Actuarial Accrued Liability (UAAL)
And Supplemental Contribution Rate**
(dollars in thousands)

JULY 1, 1995

	Actuarial Present Value of Projected Benefits (1)	Actuarial Present Value of Future Normal Costs (2)	Actuarial Accrued Liability (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$7,326,546	\$1,854,809	\$5,471,737
b. Disability Benefits	355,712	141,125	214,587
c. Survivor's Benefit	66,601	24,942	41,659
d. Deferred Retirements	176,951	96,015	80,936
e. Refunds Due to Death or Withdrawal	99,715	260,686	(160,971)
f. Total	<u>\$8,025,525</u>	<u>\$2,377,577</u>	<u>\$5,647,948</u>
2. Deferred Retirements With Future Augmentation	187,866		187,866
3. Former Members Without Vested Rights	15,115		15,115
4. Annuitants in MPRIF	3,790,813		3,790,813
5. Recipients Not in MPRIF	<u>75,881</u>		<u>75,881</u>
6. Total	<u>\$12,095,200</u>	<u>\$2,377,577</u>	<u>\$9,717,623</u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$9,717,623
2. Current Assets (Table 1, F6)			<u>8,348,124</u>
3. UAAL (B1-B2)			<u>\$1,369,499</u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020			\$38,589,912
2. Supplemental Contribution Rate (B3/C1)			3.55%

TABLE 10

Teachers Retirement Association Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)
(dollars in thousands)

YEAR ENDING JUNE 30, 1995

A. UAAL AT BEGINNING OF YEAR	\$1,503,331
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$241,086
2. Contribution	(323,208)
3. Interest on A, B1 and B2	124,293
4. Total (B1+B2+B3)	\$42,171
C. EXPECTED UAAL AT END OF YEAR (A+B4)	\$1,545,502
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	(\$155,334)
2. Investment Return	(113,139)
3. MPRIF Mortality	3,922
4. Mortality of Other Benefit Recipients	3
5. Other Items	88,545
6. Total	(\$176,003)
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	\$1,369,499
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	0
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	0
H. UAAL AT END OF YEAR (E+F+G)	\$1,369,499

TABLE 11

Teachers Retirement Association Fund

Determination Of Contribution Sufficiency*(dollars in thousands)*

JULY 1, 1995

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	6.51%	\$151,332
2. Employer Contributions	8.15%	189,462
3. Total	14.66%	\$340,794
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	8.32%	\$193,350
b. Disability benefits	0.62%	14,325
c. Survivors	0.11%	2,641
d. Deferred Retirement Benefits	0.39%	9,126
e. Refunds Due to Death or Withdrawal	1.15%	26,841
f. Total	10.59%	\$246,283
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	3.55%	82,540
3. Allowance for Expenses	0.16%	3,720
4. Total	14.30%	\$332,543
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	0.36%	\$8,251

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1995 is \$2,325,059.

Teachers Retirement Association Fund

Summary of Actuarial Assumptions and Methods

Interest:	Pre-Retirement: 8.5% per annum Post-Retirement: 5.0% per annum																
Salary Increases:	Reported salary for prior fiscal year, with new hires annualized, increased according to the table below to current fiscal year and annually for each future year.																
Mortality:	Pre-Retirement: Male - 1983 Group Annuity Mortality Table for males set back eight years. Female - 1983 Group Annuity Mortality Table for females set back four years. Post-Retirement: Male - Same as above except set back four years. Female - Same as above except set back two years. Post-Disability: Male - 1977 Railroad Retirement Board Mortality for Disabled Annuitants. Female - 1977 Railroad Retirement Board Mortality for Disabled Annuitants.																
Retirement Age:	Age 62 or if over age 62, one year from valuation date. In addition, 45% of Basic Members and 30% of Coordinated Members are assumed to retire each year that they are eligible for the Rule of 90.																
Separation:	Select and ultimate rates were based on plan experience as of June 30, 1989. Ultimate rates after the third year are shown in rate table. Select rates are as follows:																
	<table><tr><td></td><td><u>First Year</u></td><td><u>Second Year</u></td><td><u>Third Year</u></td></tr><tr><td>Less than 35</td><td>.3</td><td>.15</td><td>.1</td></tr><tr><td>35-44</td><td>.25</td><td>.125</td><td>.08</td></tr><tr><td>45-60</td><td>.3</td><td>.15</td><td>.1</td></tr></table>		<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>	Less than 35	.3	.15	.1	35-44	.25	.125	.08	45-60	.3	.15	.1
	<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>														
Less than 35	.3	.15	.1														
35-44	.25	.125	.08														
45-60	.3	.15	.1														
Disability:	Rates as shown in table.																

TABLE 12
(Continued)

<i>Expenses:</i>	Prior year expenses expressed as percentage of prior year payroll.				
<i>Return of Contributions:</i>	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.				
<i>Family Composition:</i>	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.				
<i>Social Security:</i>	N/A				
<i>Benefit Increases After Retirement:</i>	Payment of earnings on retired reserves in excess of 5% accounted for by 5% post-retirement assumptions.				
<i>Special Consideration:</i>	Married Members assumed to elect subsidized joint and survivor form of annuity as follows: <table> <tr> <td>Males -</td><td>15% elect 50% J&S option 50% elect 100% J&S option</td></tr> <tr> <td>Females -</td><td>10% elect 50% J&S option 10% elect 100% J&S option</td></tr> </table>	Males -	15% elect 50% J&S option 50% elect 100% J&S option	Females -	10% elect 50% J&S option 10% elect 100% J&S option
Males -	15% elect 50% J&S option 50% elect 100% J&S option				
Females -	10% elect 50% J&S option 10% 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>	Cost Value plus one-third Unrealized Gains or Losses.				
<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.				

TABLE 12
(Continued)

Teachers Retirement Association Fund

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Separations Expressed as the Number of Occurrences Per 10,000:

<u>Age</u>	<u>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>Male</u>	<u>Female</u>	
20	3	1	600	600	4	4	0	0	7.25%
21	3	2	600	600	4	4	0	0	7.25
22	3	2	600	600	4	4	0	0	7.25
23	3	2	600	600	5	5	0	0	7.20
24	3	2	600	600	5	5	0	0	7.15
25	3	2	600	600	5	5	0	0	7.10
26	4	2	600	600	5	5	0	0	7.05
27	4	2	600	600	5	5	0	0	7.00
28	4	2	600	600	5	5	0	0	7.00
29	4	3	580	580	5	5	0	0	7.00
30	4	3	565	565	6	6	0	0	7.00
31	4	3	540	540	6	6	0	0	7.00
32	4	3	520	520	6	6	0	0	7.00
33	5	3	500	500	6	6	0	0	7.00
34	5	3	480	480	6	6	0	0	7.00
35	5	4	440	440	6	6	0	0	7.00
36	5	4	370	370	7	7	0	0	7.00
37	6	4	330	330	7	7	0	0	7.00
38	6	4	280	280	8	8	0	0	6.90
39	6	5	240	240	8	8	0	0	6.80
40	7	5	210	210	8	8	0	0	6.70
41	7	5	195	195	9	9	0	0	6.60
42	8	6	185	185	9	9	0	0	6.50
43	9	6	175	175	10	10	0	0	6.35
44	9	7	160	160	10	10	0	0	6.20
45	10	7	145	145	11	11	0	0	6.05
46	10	8	130	130	12	12	0	0	5.90
47	11	8	115	115	13	13	0	0	5.75
48	12	9	100	100	14	14	0	0	5.70
49	14	10	85	85	16	16	0	0	5.65

TABLE 12
(Continued)

Teachers Retirement Association Fund

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Separations Expressed as the Number of Occurrences Per 10,000:

<u>Age</u>	<u>Preretirement 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>Male</u>	<u>Female</u>	
50	15	11	70	70	17	17	0	0	5.60%
51	17	12	55	55	19	19	0	0	5.55
52	19	14	40	40	22	22	0	0	5.50
53	22	15	25	25	26	26	0	0	5.45
54	25	16	10	10	30	30	0	0	5.40
55	28	18	0	0	36	36	0	0	5.35
56	31	19	0	0	41	41	0	0	5.30
57	35	21	0	0	47	47	0	0	5.25
58	39	23	0	0	52	52	0	0	5.25
59	43	25	0	0	58	58	0	0	5.25
60	48	28	0	0	63	63	0	0	5.25
61	52	31	0	0	69	69	0	0	5.25
62	57	34	0	0	0	0	10,000	10,000	5.25
63	61	38	0	0	0	0	0	0	5.25
64	66	42	0	0	0	0	0	0	5.25
65	71	47	0	0	0	0	0	0	5.25
66	77	52	0	0	0	0	0	0	5.25
67	84	58	0	0	0	0	0	0	5.25
68	92	64	0	0	0	0	0	0	5.25
69	101	71	0	0	0	0	0	0	5.25

TABLE 3A
BASIC

Teachers Retirement Association Fund

ACTIVE MEMBERS AS OF JUNE 30, 1995

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									
25-29									
30-34									
35-39									
40-44									
45-49									
50-54							1		1
55-59						1	10	40	51
60-64						1	6	37	44
65+	1						3	7	11
ALL	1					2	20	84	107

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									
25-29									
30-34									
35-39									
40-44									
45-49									
50-54							45,570		45,570
55-59						7,829	48,895	46,531	46,236
60-64						34,301	41,310	46,865	45,822
65+	12,969						48,062	41,702	40,825
ALL	12,969					21,065	46,328	46,276	45,503

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>	ALL
ALL	13					42	927	3,887	4,869

TABLE 4A
BASIC

Teachers Retirement Association Fund
SERVICE RETIREMENTS AS OF JUNE 30, 1995

<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								
50-54								
55-59	29	164	9					202
60-64	29	456	282	4				771
65-69	15	166	515	347	1			1,044
70-74	3	28	246	541	115	3		936
75-79		2	38	390	353	66	1	850
80-84			2	43	474	205	58	782
85+			1		50	332	298	681
ALL	76	816	1,093	1,325	993	606	357	5,266

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								
50-54								
55-59	31,798	32,632	16,576					31,798
60-64	29,968	30,857	24,217	14,714				28,312
65-69	25,126	23,686	26,633	24,949	4,543			25,562
70-74	13,810	32,530	22,415	23,923	12,870	13,582		22,361
75-79		3,215	18,645	22,639	18,314	8,145	14,044	19,484
80-84			14,967	22,015	16,831	12,926	5,632	15,258
85+			4,293		11,923	12,578	10,285	11,515
ALL	29,073	29,745	24,658	23,724	16,641	12,219	9,540	21,307

<u>TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED</u>								
<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	2,210	24,272	26,951	31,434	16,525	7,405	3,406	112,203

**TABLE 5A
BASIC**

Teachers Retirement Association Fund

SURVIVORS AS OF JUNE 30, 1995

<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			1		1			2
50-54	1	1			1		1	4
55-59		5	2	3	1	1		12
60-64	6	20	13	11	5	3	2	60
65-69	3	19	21	17	5	5	4	74
70-74	6	28	22	12	7	2	4	81
75-79	4	21	16	17	5	7	6	76
80-84	1	7	9	3	6	2	6	34
85+		4	1	1	1	1	5	13
ALL	21	105	85	64	32	21	28	356

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			13,619		2,256			7,938
50-54	34,548	15,913			4,997		3,423	14,720
55-59		16,069	18,179	13,174	13,225	8,696		14,846
60-64	25,675	21,566	17,616	20,227	12,855	6,212	3,715	18,787
65-69	25,147	22,378	19,618	17,706	12,756	8,107	3,494	17,999
70-74	22,724	23,248	20,651	17,279	15,388	12,226	5,719	19,803
75-79	21,812	18,699	22,804	18,322	14,823	15,955	4,296	17,998
80-84	46,305	15,370	15,446	12,898	17,788	5,480	3,704	13,869
85+		12,064	7,656	13,401	3,466	22,452	5,262	9,350
ALL	25,426	20,498	19,493	17,718	13,768	11,306	4,358	17,632

<u>TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH</u>								
<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	534	2,152	1,657	1,134	441	237	122	6,277

TABLE 6A
BASIC

Teachers Retirement Association Fund
DISABILITY RETIREMENTS AS OF JUNE 30, 1995

<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								
50-54								
55-59		1						1
60-64		7	3	2	1			13
65-69				1				1
70-74								
75-79								
80-84								
85+								
ALL		8	3	3	1			15

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								
50-54								
55-59		37,779						37,780
60-64		33,675	51,753	68,588	28,792			42,843
65-69				22,457				22,457
70-74								
75-79								
80-84								
85+								
ALL		34,189	51,753	53,211	28,792			41,146

<u>TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS DISABLED</u>								
<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		274	155	160	29			617

TABLE 11A
BASIC

Teachers Retirement Association Fund

Determination Of Contribution Sufficiency
(dollars in thousands)

JULY 1, 1995

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	10.50%	\$538
2. Employer Contributions	12.14%	622
3. Total	22.64%	\$1,160
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	14.04%	\$720
b. Disability benefits	0.96%	49
c. Survivors	0.29%	15
d. Deferred Retirement Benefits	0.35%	18
e. Refunds Due to Death or Withdrawal	2.52%	129
f. Total	18.16%	\$931

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1995 is \$5,128.

Teachers Retirement Association Fund

Summary of Plan Provisions

GENERAL

Eligibility:

A public school or community college 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.

No community college teacher is a Member if that person elects coverage under Sec. 354B.

Contributions:

Member: 10.5% of salary.

Employer: 12.14% 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, and any payments made in lieu of employer paid fringe benefits or expenses.

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

TABLE 13A
BASIC
(Continued)

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 and three years of Allowable Service. Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.

Early Retirement Eligibility:

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 2.13% of Average Salary for each of the first 10 years of Allowable Service and 2.63% 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

2.63% 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.

First hired after June 30, 1989:

2.63% of Average Salary for each year of Allowable Service assuming augmentation to the 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.

TABLE 13A
BASIC
(Continued)

<i>Form of Payment:</i>	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.
<i>Benefit Increases:</i>	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 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.

DISABILITY

Disability Benefit:

<i>Eligibility:</i>	Total and permanent disability before normal retirement age with three years of Allowable Service.
<i>Amount:</i>	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)

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.

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:

Eligibility: Active Member with 18 months of Allowable Service or Member receiving a disability benefit.

Amount: 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.

TABLE 13A
BASIC
(Continued)

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

Refund of Contributions:

<i>Eligibility:</i>	Member dies before receiving any retirement benefits and survivor benefits are not elected.
<i>Amount:</i>	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:

<i>Eligibility:</i>	Thirty days following termination of teaching service.
<i>Amount:</i>	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.

Deferred Benefit:

<i>Eligibility:</i>	Three years of Allowable Service.
<i>Amount:</i>	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.

SUMMARY OF SIGNIFICANT CHANGES

No significant changes were made for the current valuation.

**TABLE 3B
COORDINATED**

**Teachers Retirement Association Fund
ACTIVE MEMBERS AS OF JUNE 30, 1995**

<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	1,490	183							1,673
25-29	2,946	4,102	604						7,652
30-34	954	2,490	3,142	430	1				7,017
35-39	1,096	1,643	2,030	2,157	533	1			7,460
40-44	1,168	1,858	1,953	1,590	3,269	937	1		10,776
45-49	908	1,564	1,821	1,425	2,216	4,520	1,601		14,055
50-54	508	688	895	938	1,168	2,070	3,592	531	10,390
55-59	220	332	412	415	617	906	1,630	1,690	6,222
60-64	146	164	116	110	192	328	471	334	1,861
65+	84	64	31	26	24	36	41	39	345
ALL	9,520	13,088	11,004	7,091	8,020	8,798	7,336	2,594	67,451

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	15,565	24,079							16,496
25-29	13,821	24,270	28,454						20,577
30-34	12,248	22,484	30,330	34,355	27,524				25,334
35-39	12,111	22,374	30,602	35,684	39,558	28,911			28,182
40-44	11,472	20,433	31,007	36,668	41,238	43,239	33,241		32,069
45-49	11,674	18,947	31,204	36,208	41,511	44,415	45,654		36,605
50-54	10,086	18,038	28,736	34,939	41,841	46,247	47,172	47,875	39,989
55-59	8,614	14,251	25,094	31,887	40,141	45,920	48,181	49,474	41,581
60-64	9,021	9,313	22,821	29,938	39,316	47,114	48,883	50,120	38,448
65+	4,698	4,419	22,399	29,054	41,449	45,117	53,384	54,782	26,294
ALL	12,773	21,643	30,115	35,495	41,158	44,978	47,208	49,310	32,437

<u>AGE</u>	<u>PRIOR FISCAL YEAR EARNINGS (IN MILLIONS) BY 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>	
ALL	122	283	331	252	330	396	346	128	2,188

**TABLE 4B
COORDINATED**

**Teachers Retirement Association Fund
SERVICE RETIREMENTS AS OF JUNE 30, 1995**

<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		1						1
50-54	13	10						23
55-59	568	992	13	1				1,574
60-64	521	2,670	616	1				3,808
65-69	175	1,485	1,587	476	3			3,726
70-74	12	192	1,247	1,031	145			2,627
75-79	1	18	149	1,071	508	46		1,793
80-84			11	146	852	244	11	1,264
85+		1		4	109	991	271	1,376
ALL	1,290	5,369	3,623	2,730	1,617	1,281	282	16,192

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		11,507						11,508
50-54	18,060	15,015						16,736
55-59	22,040	17,676	15,428	3,005				19,223
60-64	19,002	20,358	14,578	8,952				19,235
65-69	13,424	14,941	13,617	9,615	5,283			13,618
70-74	7,218	14,528	12,598	12,166	5,882			12,175
75-79	3,475	10,724	11,969	12,010	10,488	3,421		11,338
80-84			6,741	10,727	11,206	7,852	3,481	10,398
85+		698		2,321	9,446	7,456	5,004	7,112
ALL	19,453	18,109	13,348	11,565	10,374	7,387	4,946	14,197

<u>TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED</u>								
<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	25,094	97,227	48,360	31,573	16,775	9,463	1,395	229,878

**TABLE 5B
COORDINATED**

**Teachers Retirement Association Fund
SURVIVORS AS OF JUNE 30, 1995**

AGE	YEARS SINCE DEATH							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+</u>	
<50	10	34	8					52
50-54	10	25	4	1				40
55-59	14	44	17	4	1			80
60-64	9	76	41	10				136
65-69	19	74	66	26	2	1		188
70-74	11	97	69	35	16	1		229
75-79	11	47	56	22	2	2		140
80-84	2	24	18	15	14	5	1	79
85+	1	7	6	3	7	5	2	31
ALL	87	428	285	116	42	14	3	975

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							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+</u>	
<50	9,422	9,476	2,115					8,334
50-54	11,077	10,840	7,522	2,314				10,355
55-59	15,561	12,603	6,929	4,050	1,537			11,350
60-64	16,734	13,861	10,456	7,308				12,543
65-69	12,756	14,070	11,208	11,072	13,923	15,231		12,523
70-74	15,251	10,607	11,277	11,280	12,449	3,422		11,233
75-79	9,682	12,801	11,918	8,143	21,841	11,632		11,583
80-84	9,280	8,248	10,807	9,865	11,688	9,417	4,777	9,804
85+	9,486	8,867	6,792	6,381	6,250	7,219	8,103	7,339
ALL	12,852	11,993	10,576	9,660	11,420	8,936	6,995	11,294

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH								
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+</u>	ALL
ALL	1,118	5,133	3,014	1,121	480	125	21	11,012

**TABLE 6B
COORDINATED**

**Teachers Retirement Association Fund
DISABILITY RETIREMENTS AS OF JUNE 30, 1995**

<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	6	39	13	3				61
50-54	9	35	14	7				65
55-59	9	54	26	11	4	1		105
60-64	6	53	46	13	6	1		125
65-69		5	2	1				8
70-74								
75-79								
80-84								
85+								
ALL	30	186	101	35	10	2		364

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	9,399	7,684	5,430	3,953				7,189
50-54	11,660	12,067	8,983	16,791				11,855
55-59	18,610	13,856	10,998	7,880	6,029	2,547		12,524
60-64	21,837	15,098	11,187	9,242	4,569	6,548		12,800
65-69		10,108	17,103	3,386				11,017
70-74								
75-79								
80-84								
85+								
ALL	15,329	12,479	10,209	9,704	5,154	4,548		11,572

<u>TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS DISABLED</u>								
<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	460	2,321	1,031	340	52	9		4,212

Teachers Retirement Association Fund

Determination Of Contribution Sufficiency
(dollars in thousands)

JULY 1, 1995

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	6.50%	\$150,793
2. Employer Contributions	8.14%	188,840
3. Total	14.64%	\$339,633
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	8.30%	\$192,630
b. Disability benefits	0.62%	14,275
c. Survivors	0.11%	2,627
d. Deferred Retirement Benefits	0.39%	9,108
e. Refunds Due to Death or Withdrawal	1.15%	26,712
f. Total	10.57%	\$245,352

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1995 is \$2,319,898.

Teachers Retirement Association Fund Coordinated

Summary of Plan Provisions

GENERAL

Eligibility:

A public school, community college or state university 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.

No community college or state university teacher is a Member except for purposes of Social Security coverage if that person elects coverage under Sec. 354B.

Contributions:

Member: 6.5% of salary.

Employer: 8.14% 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 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 1.13% of Average Salary for each of the first 10 years of Allowable Service and 1.63% 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

1.63% 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.

TABLE 13B
COORDINATED
(Continued)

First hired after June 30, 1989:

1.63% 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.

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 the greater of \$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.

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 com-

TABLE 13B
COORDINATED
(Continued)

mencement 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.

Form of Payment: Same as for retirement.

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

Retirement After Disability:

Eligibility: Normal retirement age.

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 Optional Annuity:

Eligibility: Member or former Member with three years of Allowable Service who dies before retirement benefits commence.

Amount: 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 13B
COORDINATED
(Continued)

Benefit Increases: Same as for retirement.

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.

Deferred Benefit:

Eligibility: 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.

SUMMARY OF SIGNIFICANT CHANGES

No significant changes were made for the current valuation.