

STATE OF MINNESOTA
TEACHERS' RETIREMENT ASSOCIATION

ACTUARIAL REPORT

Prepared for the
Board of Trustees

as of
July 1, 1993

W F CORROON



December 1, 1993

DEC 1993
Received
MIN State
Teachers
Retirement

Board of Trustees
State of Minnesota
Teachers Retirement Association
Suite 500, Gallery Building
17 West Exchange Street
St. Paul, Minnesota 55102

W F Corroon
50 Fremont Street
24th Floor
San Francisco, CA
Zip Code: 94105-2236
Telephone 415-979-0600
Fax 415-979-0177

Ladies and Gentlemen:

Pursuant to our agreement we have completed an actuarial valuation of the Teachers' Retirement Fund as of July 1, 1993 and are pleased to submit our report on the results of the survey.

This report describes in detail both the results and the recommendations arising from our study. We look forward to discussing this report with the Board and wish to express our appreciation for the cooperation extended to us during the course of this survey.

Respectfully submitted,

Krystyna H. Upstill, E.A., M.A.A.A.
Senior Vice President and Actuary

Drew James, F.S.A., M.A.A.A.
Executive Vice President and Actuary

KHU/DJ:abd

Enclosure

MINNESOTA TEACHERS' RETIREMENT FUND

JULY 1, 1993

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SECTION
I

OVERVIEW

REPORT HIGHLIGHTS

(Dollars in Thousands)		
	07/01/93 Valuation	07/01/92 Valuation
A. CONTRIBUTIONS		
1. Statutory Contributions - Chapter 354 Percentage of Payroll	12.68%	12.72%
2. Required Contributions - Chapter 356 Percentage of Payroll	12.53%	13.12%
3. Sufficiency (Deficiency) (A1-A2)	.15%	(.40%)
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets	\$ 7,045,937	\$ 6,324,733
b. Current Benefit Obligations	\$ 7,538,230	\$ 6,941,901
c. Funding Ratio (a/b)	93.47%	91.11%
2. Accrued Liability Funding Ratio		
a. Current Assets	\$ 7,045,937	\$ 6,324,733
b. Actuarial Accrued Liability	\$ 8,166,959	\$ 7,557,624
c. Funding Ratio (a/b)	86.27%	83.69%
3. Projected Benefit Funding Ratio		
a. Current and Expected Future Assets	\$ 10,349,627	\$ 9,450,857
b. Current and Expected Future Benefit Obligations	\$ 10,283,425	\$ 9,624,257
c. Funding Ratio (a/b)	100.64%	98.20%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number	65,268	65,520
b. Projected Annual Earnings	\$ 2,148,871	\$ 2,059,725
c. Average Annual Earnings	\$ 32,934	\$ 31,437
d. Average Age	42.9	42.9
e. Average Service	12.3	12.3
2. Others		
a. Service Retirements	19,368	17,867
b. Disability Retirements	328	297
c. Survivors	1,116	1,048
d. Deferred Retirements	4,161	3,692
e. Terminated Other Nonvested	<u>15,852</u>	<u>15,308</u>
f. Total	40,825	38,212



DISCUSSION HIGHLIGHTS

Changes in Plan Provisions Since Previous Valuation

An early retirement incentive program providing enhanced benefits was effective for members retiring between May 1993 and August 1993. Members with at least 25 years of service and who were age 55, or who had at least 1 year of service and were age 65 could elect to retire with an increase of 0.10% to the service credit accrual rate, with a maximum of 30 years of service.

Death benefit coverage was extended to active and former members younger than age 50. (See the Summaries of Plan Provisions for details.)

Contributions

Statutory and required contribution rates remained relatively stable. The fund moved from a (.40%) deficiency to a .15% sufficiency.

Funding Ratio

The Funding Ratios show the percentage of the Plan's liabilities which are covered by the Plan's assets. For this purpose the Plan's assets are valued at Actuarial Value as determined in Table 1, page 6.

Three Funding Ratios are shown:

- the Accrued Benefit Funding Ratio, which is based on the Current Benefit Obligation (a calculation in accordance with Statement No. 5 of the Governmental Accounting Standards Board which represents the liability for current retired and inactive members and for benefits earned to date for active members assuming future pay increases to retirement),
- the Accrued Liability Funding Ratio, which is based on the Actuarial Accrued Liability generated by the Actuarial Funding method used to determine the Plan's Required Contributions, and
- the Projected Benefit Funding Ratio, which is based on the Total Liabilities of the Plan for current retired, inactive, and active members.

This year, both of the plan's funding ratios which measure funding to date have increased (by approximately 3%). This was primarily due to the fund's favorable investment experience. The Projected Benefit Funding Ratio, also increased by approximately 2.5%.

Due to the contribution sufficiency, the Projected Benefit Funding Ratio is more than 100%. Thus expected Future Statutory Contributions plus Current Assets exceeds the value of total Expected Benefit Obligations.



SECTION

II

ASSETS

ASSETS

Summaries

July 1, 1993 assets at cost and market value are accounted for in Table 1 which follows. Table 2 shows the changes in these assets during the year ended June 30, 1993.

Development of Current Assets

Section F of Table 1 also shows the development of the "Current Asset" value. This value is used to determine Required Contributions. It is based on cost value plus one-third of the unrealized gains (losses) on funds not included in the Minnesota Post Retirement Investment Fund (MPRIF) at year end.



TABLE 1
July 1, 1993 Accounting Balance Sheet

	(Dollars in Thousands)	
	<u>Market Value</u>	<u>Cost Value</u>
A. ASSETS		
1. Cash, Equivalents, Short-Term Securities	\$ 61,151	\$ 61,151
2. Investments		
a. Fixed Income	1,165,767	1,132,594
b. Equity	3,004,690	2,670,295
c. Real Estate	0	0
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)*	3,031,527	3,031,527
4. Other	<u>34,140</u>	<u>34,140</u>
B. TOTAL ASSETS	<u>\$ 7,297,275</u>	<u>\$ 6,929,707</u>
C. AMOUNTS CURRENTLY PAYABLE*	\$ 6,293	\$ 6,293
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$ 921,143	\$ 921,143
2. Employer Reserves	3,338,312	2,970,744
3. MPRIF Reserves*	3,031,527	3,031,527
4. Non-MPRIF Reserves	<u>0</u>	<u>0</u>
5. Total Assets Available for Benefits	<u>\$ 7,290,982</u>	<u>\$ 6,923,414</u>
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	<u>\$ 7,297,275</u>	<u>\$ 6,929,707</u>
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$ 6,923,414
2. Market Value (D5)	\$ 7,290,982	
3. Cost Value (D5)	<u>6,923,414</u>	
4. Market Over Cost (F2-F3)	\$ 367,568	
5. 1/3 of Market Over Cost (F4)/3		<u>122,523</u>
6. Actuarial Value of Assets (F1 + F5) (Same as "Current Assets")		<u>\$ 7,045,937</u>

*Does not reflect mortality loss for 1992-93 of \$7,332.



TABLE 2
Changes in Assets Available for Benefits
YEAR ENDING JUNE 30, 1993

	(Dollars in Thousands)	
	<u>Market Value</u>	<u>Cost Value</u>
A. ASSETS AVAILABLE AT BEGINNING OF YEAR	\$ 6,493,217	\$ 6,240,491
B. OPERATING REVENUES		
1. Member Contributions	\$ 94,709	\$ 94,709
2. Employer Contributions	168,071	168,071
3. Investment Income	453,109	453,109
4. MPRIF	234,962	234,962
5. Net Realized Gain (Loss)	0	0
6. Other	2,347	2,347
7. Net Change in Unrealized Gain (Loss)	<u>114,842</u>	<u>0</u>
8. Total Revenue	<u>\$ 1,068,040</u>	<u>\$ 953,198</u>
C. OPERATING EXPENSES		
1. Service Retirements	\$ 249,123	\$ 249,123
2. Disability Benefits	3,893	3,893
3. Survivor Benefits	3,614	3,614
4. Refunds	4,750	4,750
5. Administrative Expenses	3,124	3,124
6. Investment Fees	5,579	5,579
7. Other	<u>192</u>	<u>192</u>
8. Total Disbursements	<u>\$ 270,275</u>	<u>\$ 270,275</u>
D. CHANGES IN RESERVES	0	0
E. FUND BALANCE JUNE 30, 1993	<u>\$ 7,290,982</u>	<u>\$ 6,923,414</u>



SECTION
III

MEMBERSHIP DATA

MEMBERSHIP DATA

Basis

Data upon which the valuation was based was supplied by the Teachers Retirement Association. We thank them for their excellent cooperation in this area.

Demographics

Tables 3 - 6 which follow present July 1, 1993 demographic information on active and retired members by age and service (years retired). That information is summarized below.

TABLE

3	• Total Active Members		
	Count		65,268
	Average Pay (92 - 93)	\$	30,914
	Total Payroll (thousands)	\$	2,017,719
3A	• Basic Active Members		
	Count		271
	Average Pay (92 - 93)	\$	44,381
	Total Payroll (thousands)	\$	12,027
3B	• Coordinated Active Members		
	Count		64,997
	Average Pay (92 - 93)	\$	30,858
	Total Payroll (thousands)	\$	2,005,692
4	• Total Service Retirements		
	Count		19,368
	Average Annual Benefit	\$	13,826
	Total Annual Benefit (thousands)	\$	267,782
4A	• Basic Service Retirements		
	Count		6,478
	Average Annual Benefit	\$	18,769
	Total Annual Benefit (thousands)	\$	121,586
4B	• Coordinated Service Retirements		
	Count		12,890
	Average Annual Benefit	\$	11,341
	Total Annual Benefit (thousands)	\$	146,196



Demographics - continued

TABLE

5	• Total Disabled Members under Retirement Age		
	Count		328
	Average Annual Benefit	\$	11,915
	Total Annual Benefit (thousands)	\$	3,908
5A	• Basic Disabled		
	Count		31
	Average Annual Benefit	\$	26,967
	Total Annual Benefit (thousands)	\$	836
5B	• Coordinated Disabled		
	Count		297
	Average Annual Benefit	\$	10,344
	Total Annual Benefit (thousands)	\$	3,072
6	• Total Survivors		
	Count		1,116
	Average Annual Benefit	\$	11,581
	Total Annual Benefit (thousands)	\$	12,924
6A	• Basic Survivors		
	Count		340
	Average Annual Benefit	\$	15,003
	Total Annual Benefit (thousands)	\$	5,101
6B	• Coordinated Survivors		
	Count		776
	Average Annual Benefit	\$	10,082
	Total Annual Benefit (thousands)	\$	7,823

Table 7 presents a reconciliation of July 1, 1992 and July 1, 1993 data. The number of active members decreased by 0.4% during the year. The number of service retired members increased by 8.4%.



TABLE 3
Average Annual Earnings and Membership Distribution of Active Members
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years of Service								Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<20									0
20-24	1,121	524							1,645
25-29	1,799	4,039	693						6,531
30-34	839	2,346	3,000	397	1				6,583
35-39	908	1,912	1,871	2,383	795				7,869
40-44	1,056	2,281	2,018	1,741	3,635	1,555			12,286
45-49	755	1,549	1,659	1,246	1,824	4,473	1,279		12,785
50-54	366	827	904	797	1,018	1,977	2,974	777	9,640
55-59	196	383	372	364	545	935	1,336	1,499	5,630
60-64	125	158	124	133	210	353	429	415	1,947
65-69	44	52	18	18	24	50	41	55	302
70+	14	16	7	2	6	1		4	50
Total	7,223	14,087	10,666	7,081	8,058	9,344	6,059	2,750	65,268

AVERAGE ANNUAL EARNINGS

Age	Years of Service								Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<20									
20-24	11,286	20,697							14,284
25-29	8,626	21,284	27,297						18,435
30-34	7,701	21,118	28,632	32,322	24,110				23,508
35-39	7,896	19,832	29,465	33,284	38,124				26,667
40-44	6,927	18,774	30,525	35,057	39,262	41,566			30,940
45-49	6,876	17,618	30,870	35,425	40,142	43,126	44,312		35,247
50-54	6,222	15,785	29,688	35,048	40,693	44,855	45,589	46,215	38,558
55-59	4,469	11,926	24,403	32,137	39,274	45,090	46,480	47,883	39,726
60-64	5,612	8,177	22,887	28,783	38,665	45,276	46,871	48,344	37,459
65-69	4,973	4,953	21,708	32,604	39,738	44,840	50,276	50,163	31,358
70+	5,931	2,088	17,711	18,052	32,062	54,024		48,208	14,315
Total	8,094	19,422	29,254	34,092	39,509	43,520	45,638	47,527	30,914



TABLE 3A - BASIC
Average Annual Earnings and Membership Distribution of Active Members
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years of Service								Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<20									
20-24									
25-29									
30-34									
35-39									
40-44									
45-49									
50-54						2	4	8	14
55-59						3	18	154	175
60-64						2	9	57	68
65-69						1		11	12
70+								2	2
Total						8	31	232	271

AVERAGE ANNUAL EARNINGS

Age	Years of Service								Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<20									
20-24									
25-29									
30-34									
35-39									
40-44									
45-49									
50-54						51,931	49,475	37,832	43,172
55-59						25,897	38,224	46,014	44,868
60-64						43,404	51,497	42,550	43,759
65-69						45,400		42,797	43,014
70+								39,542	39,542
Total						39,220	43,529	44,672	44,381



TABLE 3B - COORDINATED
Average Annual Earnings and Membership Distribution of Active Members
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years of Service								Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<20									
20-24	1,121	524							1,645
25-29	1,799	4,039	693						6,531
30-34	839	2,346	3,000	397	1				6,583
35-39	908	1,912	1,871	2,383	795				7,869
40-44	1,056	2,281	2,018	1,741	3,635	1,555			12,286
45-49	755	1,549	1,659	1,246	1,824	4,473	1,279		12,785
50-54	366	827	904	797	1,018	1,975	2,970	769	9,626
55-59	196	383	372	364	545	932	1,318	1,345	5,455
60-64	125	158	124	133	210	351	420	358	1,879
65-69	44	52	18	18	24	49	41	44	290
70+	14	16	7	2	6	1		2	48
Total	7,223	14,087	10,666	7,081	8,058	9,336	6,028	2,518	64,997

AVERAGE ANNUAL EARNINGS

Age	Years of Service								Total
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<20									
20-24	11,286	20,697							14,284
25-29	8,626	21,284	27,297						18,435
30-34	7,701	21,118	28,632	32,322	24,110				23,508
35-39	7,896	19,832	29,465	33,284	38,124				26,667
40-44	6,927	18,774	30,525	35,057	39,262	41,566			30,940
45-49	6,876	17,618	30,870	35,425	40,142	43,126	44,312		35,247
50-54	6,222	15,785	29,688	35,048	40,693	44,848	45,583	46,303	38,551
55-59	4,469	11,926	24,403	32,137	39,274	45,152	46,593	48,097	39,561
60-64	5,612	8,177	22,887	28,783	38,665	45,287	46,772	49,266	37,231
65-69	4,973	4,953	21,708	32,604	39,738	44,829	50,276	52,004	30,875
70+	5,931	2,088	17,711	18,052	32,062	54,024		56,874	13,264
Total	8,094	19,422	29,254	34,092	39,509	43,524	45,649	47,790	30,858



TABLE 4
Service Retirements
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years Retired							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		1	5				3	9
50-54	20	7	1	1				29
55-59	873	761	19	2	1			1,656
60-64	805	2,088	1,053	5				3,951
65-69	202	1,390	2,121	476	1			4,190
70-74	11	234	1,635	1,174	202	1	1	3,258
75-79	3	18	202	1,511	732	84	1	2,551
80-84		2	9	77	1,593	219	55	1,955
85+				2	344	1,033	390	1,769
Total	1,914	4,501	5,045	3,248	2,873	1,337	450	19,368

AVERAGE ANNUAL BENEFIT

Age	Years Retired							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		1,508	826				6,799	2,892
50-54	14,766	12,874	4,229	1,091				13,474
55-59	21,710	16,806	12,095	920	1,395			19,308
60-64	18,334	18,378	17,445	14,622				18,116
65-69	13,812	13,365	15,724	9,994	12,607			14,197
70-74	10,102	13,107	13,746	13,186	7,463	6,175	5,190	13,092
75-79	4,176	8,072	12,156	13,112	11,060	3,584	7,829	12,086
80-84		1,779	3,905	11,971	10,716	4,277	3,694	9,806
85+				2,685	10,101	5,847	5,504	6,595
Total	19,290	16,229	15,247	12,640	10,498	5,448	5,296	13,826



TABLE 4A - BASIC
Service Retirements
as of June 30, 1992

MEMBERSHIP DISTRIBUTION

Age	Years Retired							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50							3	3
50-54	15							15
55-59	677	170	11					858
60-64	560	401	398	2				1,361
65-69	112	154	652	205				1,123
70-74	2	32	379	418	110	1	1	943
75-79	1	3	41	439	347	60	1	892
80-84			1	28	516	106	50	701
85+					87	259	236	582
Total	1,367	760	1,482	1,092	1,060	426	291	6,478

AVERAGE ANNUAL BENEFIT

Age	Years Retired							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50							6,799	6,799
50-54	15,736							15,736
55-59	23,353	26,195	14,574					23,804
60-64	19,495	26,129	23,209	18,661				22,534
65-69	16,180	22,875	24,876	15,934				22,102
70-74	5,649	18,986	21,492	19,079	9,898	6,175	5,190	18,918
75-79	458	9,094	19,257	19,149	13,226	3,886	7,829	15,756
80-84			3,645	16,693	14,126	5,443	3,915	12,172
85+					13,843	8,159	7,073	8,568
Total	21,059	25,116	23,317	18,455	13,369	6,876	6,523	18,769



TABLE 4B - COORDINATED
Service Retirements
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years Retired							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		1	5					6
50-54	5	7	1	1				14
55-59	196	591	8	2	1			798
60-64	245	1,687	655	3				2,590
65-69	90	1,236	1,469	271	1			3,067
70-74	9	202	1,256	756	92			2,315
75-79	2	15	161	1,072	385	24		1,659
80-84		2	8	49	1,077	113	5	1,254
85+				2	257	774	154	1,187
Total	547	3,741	3,563	2,156	1,813	911	159	12,890

AVERAGE ANNUAL BENEFIT

Age	Years Retired							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		1,508	826					939
50-54	11,857	12,874	4,229	1,091				11,052
55-59	16,033	14,105	8,687	920	1,395			14,475
60-64	15,680	16,536	13,943	11,930				15,794
65-69	10,865	12,180	11,661	5,501	12,607			11,303
70-74	11,092	12,176	11,409	9,927	4,552			10,718
75-79	6,035	7,868	10,348	10,640	9,106	2,829		10,112
80-84		1,779	3,938	9,273	9,082	3,184	1,490	8,483
85+				2,685	8,834	5,073	3,100	5,627
Total	14,869	14,424	11,891	9,694	8,820	4,779	3,049	11,341



TABLE 5
Disability Retirements
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years Disabled							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	7	31	11	3				52
50-54	8	32	12	7	2		1	62
55-59	9	50	29	7	4	1		100
60-64	5	52	34	12	2	1		106
65-69		2	3	1	2			8
70-74								
75-79								
80-84								
85+								
Total	29	167	89	30	10	2	1	328

AVERAGE ANNUAL BENEFIT

Age	Years Disabled							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	8,198	6,138	5,782	17,000				6,966
50-54	15,153	9,380	7,924	11,253	3,116		4,828	9,779
55-59	16,982	15,736	10,012	7,271	7,595	5,635		13,169
60-64	14,686	16,026	11,889	16,414	9,138	8,592		14,480
65-69		13,046	10,221	8,794	11,097			10,968
70-74								
75-79								
80-84								
85+								
Total	13,961	12,794	9,932	12,881	7,708	7,114	4,828	11,915



TABLE 5A - BASIC
Disability Retirements
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years Disabled							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54								
55-59	1	6	2	1	1			11
60-64		7	5	5	1	1		19
65-69					1			1
70-74								
75-79								
80-84								
85+								
Total	1	13	7	6	3	1		31

AVERAGE ANNUAL BENEFIT

Age	Years Disabled							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54								
55-59	34,763	33,999	25,002	21,005	15,017			29,526
60-64		30,288	24,039	27,942	13,163	8,592		25,983
65-69					17,501			17,501
70-74								
75-79								
80-84								
85+								
Total	34,763	32,001	24,314	26,786	15,227	8,592		26,967



TABLE 5B - COORDINATED
Disability Retirements
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years Disabled							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	7	31	11	3				52
50-54	8	32	12	7	2		1	62
55-59	8	44	27	6	3	1		89
60-64	5	45	29	7	1			87
65-69		2	3	1	1			7
70-74								
75-79								
80-84								
85+								
Total	28	154	82	24	7	1	1	297

AVERAGE ANNUAL BENEFIT

Age	Years Disabled							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	8,198	6,138	5,782	17,000				6,966
50-54	15,153	9,380	7,924	11,253	3,116		4,828	9,779
55-59	14,760	13,245	8,901	4,982	5,120	5,635		11,147
60-64	14,686	13,807	9,794	8,180	5,112			11,967
65-69		13,046	10,221	8,794	4,693			10,035
70-74								
75-79								
80-84								
85+								
Total	13,218	11,173	8,704	9,405	4,485	5,635	4,828	10,344



TABLE 6
Survivors
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years Since Death							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	2	7	4	1	1		1	16
50-54	4	22	3	1		3		33
55-59	8	50	21	4	1	2		86
60-64	6	52	87	27	5	5	2	184
65-69	2	43	100	65	8	3	2	223
70-74		11	75	115	34	4	4	243
75-79			16	132	57	9	5	219
80-84			1	12	45	12	7	77
85+					6	14	15	35
Total	22	185	307	357	157	52	36	1,116

AVERAGE ANNUAL BENEFIT

Age	Years Since Death							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	5,818	4,855	7,455	3,083	3,894		2,047	5,279
50-54	5,514	10,995	8,261	11,327		3,049		9,370
55-59	11,655	11,477	13,577	9,693	7,032	1,636		11,643
60-64	9,884	9,879	13,666	11,837	11,549	2,780	2,450	11,729
65-69	12,212	12,010	12,835	13,424	11,095	3,856	2,510	12,566
70-74		8,251	11,213	13,354	10,052	3,728	2,600	11,665
75-79			11,521	14,094	13,279	5,952	2,829	13,102
80-84			17,704	8,936	9,191	7,374	3,251	8,439
85+					8,544	6,656	4,756	6,165
Total	9,575	10,652	12,557	13,302	10,962	5,539	3,628	11,581



TABLE 6A - BASIC
Survivors
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years Since Death							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50			1				1	2
50-54		1	1	1		2		5
55-59	1	7	8	3	1	1		21
60-64		6	28	16	3	4	2	59
65-69		10	26	30	3	3	2	74
70-74		2	10	38	12	3	4	69
75-79			4	42	15	4	5	70
80-84				6	9	5	5	25
85+					2	6	7	15
Total	1	26	78	136	45	28	26	340

AVERAGE ANNUAL BENEFIT

Age	Years Since Death							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50			12,354				2,047	7,201
50-54		14,435	16,530	11,327		3,524		9,868
55-59	18,681	13,867	20,379	11,678	7,032	2,518		15,398
60-64		14,299	17,986	13,961	11,561	3,055	2,450	14,654
65-69		19,702	17,481	15,421	7,670	3,856	2,510	15,591
70-74		20,545	23,221	17,643	14,018	3,367	2,600	16,413
75-79			15,303	20,173	20,682	7,445	2,829	18,038
80-84				9,977	10,964	5,463	3,103	8,055
85+					7,623	6,608	6,301	6,600
Total	18,681	16,746	18,506	16,985	14,602	5,007	3,697	15,003



TABLE 6B - COORDINATED
Survivors
as of June 30, 1993

MEMBERSHIP DISTRIBUTION

Age	Years Since Death							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	2	7	3	1	1			14
50-54	4	21	2			1		28
55-59	7	43	13	1		1		65
60-64	6	46	59	11	2	1		125
65-69	2	33	74	35	5			149
70-74		9	65	77	22	1		174
75-79			12	90	42	5		149
80-84			1	6	36	7	2	52
85+					4	8	8	20
Total	21	159	229	221	112	24	10	776

AVERAGE ANNUAL BENEFIT

Age	Years Since Death							Total
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	5,818	4,855	5,822	3,083	3,894			5,005
50-54	5,514	10,831	4,126			2,099		9,281
55-59	10,651	11,088	9,392	3,737		753		10,429
60-64	9,884	9,302	11,616	8,747	11,531	1,679		10,348
65-69	12,212	9,679	11,202	11,712	13,150			11,063
70-74		5,519	9,366	11,238	7,889	4,810		9,782
75-79			10,260	11,258	10,635	4,758		10,784
80-84			17,704	7,895	8,748	8,739	3,621	8,623
85+					9,004	6,693	3,404	5,840
Total	9,142	9,655	10,531	11,036	9,499	6,160	3,448	10,082



TABLE 7
Reconciliation of Members
YEAR ENDING JUNE 30, 1993

	<u>Actives</u>	<u>Inactives</u>
A. AS OF JUNE 30, 1992	65,520	19,000
B. ADDITIONS	6,185	4,310
C. DELETIONS		
1. Service Retirement	(1,680)	(206)
2. Death	(40)	(47)
3. Terminated - No Refund	(3,980)	0
4. Terminated - Refund	(715)	0
5. Returned to Active	0	(1,174)
6. Terminated - Inactives	0	(1,870)
7. Transfer to IRAP	(22)	0
D. DATA ADJUSTMENTS	0	0
E. TOTAL ON JUNE 30, 1993	65,268	20,013
Vested	49,793	4,161
Nonvested	15,475	15,852

	<u>RECIPIENTS</u>		
	<u>Retirement Annuitants</u>	<u>Disabled</u>	<u>Survivors</u>
A. USED IN VALUATION ON JUNE 30, 1992	17,867	297	1,048
B. ADDITIONS			
1. Service Retirement Conversions	13	0	0
2. Other Retirements	1,886	69	131
C. DELETIONS			
1. Service Retirement Conversions	0	(13)	0
2. Death	(393)	(18)	(14)
3. Annuity Expired	(5)	0	(49)
4. Returned as Active	0	(6)	0
D. DATA ADJUSTMENTS	0	(1)	0
E. TOTAL ON JUNE 30, 1993	19,368	328	1,116



SECTION
IV

FUNDING STATUS

FUNDING STATUS

Tables

The tables which follow present the funding status of the fund including the Actuarial Balance Sheet (Table 8), the development of the Required Contribution Rate (Tables 9 and 11), and the sources of actuarial gains and losses during the year (Table 10). Each table is described below in more detail.

Actuarial Balance Sheet

The actuarial balance sheet provides a comparison of the current and future obligations of the fund to the value of current assets and future expected statutory contributions.

The balance sheet also provides a comparison of Current Benefit Obligations with Current Assets. Current Benefit Obligations are calculated in accordance with Statement No. 5 of the Governmental Accounting Standards Board (GASB). For active members, this measure is based on a portion of members' projected benefits based on past service. Total benefits are valued for inactive members, including augmentation. The amount by which the Current Benefit Obligation exceeds Current Assets is shown as the Current Unfunded Actuarial Liability on line G.

The Current Benefit Obligation is presented below in GASB No. 5 disclosure format. Figures shown are in thousands of dollars.

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	\$ 3,273,124
Current Employees:	
• Accumulated employee contributions including allocated investment income	\$ 2,036,471
• Employer-financed vested	\$ 1,946,160
• Employer-financed nonvested	\$ 282,475
Total Pension Benefit Obligation	\$ 7,538,230

Unfunded Actuarial Accrued Liability

Table 9 shows the derivation of the Unfunded Actuarial Accrued Liability under the Entry Age Normal Actuarial Cost Method, which is the funding method used by the Fund. Under this method costs are spread as a level percentage of payroll starting when each member enters into the plan. The unfunded liability is amortized to July 1, 2020 as a level percentage of payroll, assuming total payroll increases at the rate of 6.5% per year.



Actuarial Gains and Losses

Changes in the Unfunded Actuarial Accrued Liability during the year due to differences in actual versus assumed experience, plan amendments, and changes in actuarial assumptions and methods are shown in Table 10.

This year the plan experienced a net actuarial gain of \$191.5 million, which reduced required contribution rates by 0.42% of payroll. The main sources for this gain were investment earnings on the TRA regular fund in excess of the assumed interest rate (8.5%) and lower than assumed salary increases. The yield on the actuarial value of the TRA regular fund was 14%. Salary increases for members active on both July 1, 1992 and July 1, 1993 averaged 5.7%, compared to 6.5%.

Determination of Contribution Sufficiency

Table 11 shows a comparison of Statutory and Required contribution rates for the fund. Required Contributions are the sum of the normal cost contribution, the contribution to amortize the Unfunded Actuarial Accrued Liability, and the contribution for expenses. Tables 11A and 11B which follow show the normal cost for Basic and Coordinated members separately.

The Required Normal Cost percent decreased by 0.01% of payroll. The UAAL decreased by \$111.9 million, thus lowering the Supplemental Contribution rate to 2.54% of payroll. The net impact was to decrease the required contribution rate to 12.53% of payroll.



TABLE 8
Actuarial Balance Sheet
JULY 1, 1993

(Dollars in Thousands)

A. CURRENT ASSETS (TABLE 1, F6)				\$ 7,045,937
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Statutory Supplemental Contributions				\$ 1,187,224
2. Present Value of Future Normal Costs				<u>2,116,466</u>
3. Total Expected Future Assets				\$ 3,303,690
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				\$ 10,349,627
D. CURRENT BENEFIT OBLIGATIONS				
	<u>Nonvested</u>	<u>Vested</u>	<u>Total</u>	
1. Benefit Recipients				
a. Retirement Annuities	\$ 0	\$ 2,950,257	\$ 2,950,257	
b. Disability Benefits	0	54,668	54,668	
c. Surviving Spouse and Child Benefits	0	113,988	113,988	
2. Deferred Retirements with Augmentation	0	126,512	126,512	
3. Former Members without Vested Rights	0	27,699	27,699	
4. Active Members				
a. Retirement Annuities	13,145	3,829,102	3,842,247	
b. Disability Benefits	188,213	0	188,213	
c. Survivors' Benefits	79,506	0	79,506	
d. Deferred Retirements	1,611	129,052	130,663	
e. Refund Liability Due to Death or Withdrawal	<u>0</u>	<u>24,477</u>	<u>24,477</u>	
5. Total Current Benefit Obligations	\$ 282,475	\$ 7,255,755	\$ 7,538,230	
E. EXPECTED FUTURE BENEFIT OBLIGATIONS				\$ 2,745,195
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				\$ 10,283,425
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)				\$ 492,293
H. EXCESS OF EXPECTED ASSETS OVER ACTUARIAL LIABILITY (F-C)				\$ 66,202



TABLE 9
Determination of Unfunded Actuarial Accrued Liability (UAAL) and
Supplemental Contribution Rate
JULY 1, 1993

(Dollars in Thousands)			
	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
	(1)	(2)	(3) = (1) - (2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$ 6,344,280	\$ 1,688,797	\$ 4,655,483
b. Disability Benefits	292,234	106,905	185,329
c. Survivors Benefits	127,539	43,872	83,667
d. Deferred Retirements	199,028	146,824	52,204
e. Refunds: Death/Withdrawal	<u>47,220</u>	<u>130,068</u>	<u>(82,848)</u>
f. Total	\$ 7,010,301	\$ 2,116,466	\$ 4,893,835
2. Deferred Retirements with Future Augmentation	\$ 126,512		\$ 126,512
3. Former Members without Vested Rights	\$ 27,699		\$ 27,699
4. Annuitants in MPRIF	\$ 3,037,923		\$ 3,037,923
5. Recipients not in MPRIF	<u>\$ 80,990</u>		<u>\$ 80,990</u>
6. Total	\$ 10,283,425	\$ 2,116,466	\$ 8,166,959
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$ 8,166,959
2. Current Assets (Table 1,F6)			\$ 7,045,937
3. UAAL (B1-B2)			\$ 1,121,022
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020			\$ 44,054,964
2. Supplemental Contribution Rate (B3/C1)			2.54%



TABLE 10
Changes in Unfunded Actuarial Accrued Liability (UAAL)
YEAR ENDING JUNE 30, 1993

	(Dollars in Thousands)
A. UAAL AT BEGINNING OF YEAR	\$ 1,232,891
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$ 211,586
2. Contribution	(262,780)
3. Interest on A, B1, and B2	<u>111,243</u>
4. Total (B1 + B2 + B3)	\$ 60,049
C. EXPECTED UAAL AT END OF YEAR (A + B4)	\$ 1,292,940
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	\$ (118,100)
2. Investment Return	(182,849)
3. MPRIF Mortality*	7,332
4. Mortality of Other Benefit Recipients	2,352
5. Other Items	<u>99,749**</u>
6. Total	\$ (191,516)
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C + D6)	\$ 1,101,424
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS***	\$ 19,598
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS AND METHODS	\$ 0
H. UAAL AT END OF YEAR (E + F + G)	\$ 1,121,022

*As calculated by Commission actuary.

**Of this amount, \$81,617 is the loss due to amortizing the UAAL as a level percentage of payroll and not as a level dollar amount as assumed in the derivation of Item C.

***This number includes approximately \$16,000 due to the benefit improvements for 1,086 members under the Early Retirement Incentives.



TABLE 11
Determination of Contribution Sufficiency
JULY 1, 1993

	(Dollars in Thousands)	
	<u>Percentage of Payroll</u>	<u>Dollar Amount</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	4.52%	\$ 97,212
2. Employer Contributions	8.16%	\$ 175,430
3. Total	12.68%	\$ 272,642
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	7.88%	\$ 169,309
b. Disability Benefits	.49%	10,559
c. Survivors	.21%	4,567
d. Deferred Retirement Benefits	.65%	14,008
e. Refunds Due to Death or Withdrawal	.61%	13,048
f. Total	9.84%	\$ 211,491
2. Supplemental Contribution: Amortization by July 1, 2020 of UAAL of \$1,121,022	2.54%	\$ 54,581
3. Allowance for Expenses	.15%	\$ 3,223
4. Total	12.53%	\$ 269,295
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) (A3-B4)	.15%	\$ 3,223

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1993 is \$2,148,871.



TABLE 11A
Determination of Contribution Sufficiency
BASIC - JULY 1, 1993

(Dollars in Thousands)		
	Percentage of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	8.50%	\$ 1,089
2. Employer Contributions	12.14%	\$ 1,555
3. Total	20.64%	\$ 2,644
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	12.71%	\$ 1,628
b. Disability Benefits	.72%	92
c. Survivors	.63%	81
d. Deferred Retirement Benefits	.97%	124
e. Refunds Due to Death or Withdrawal	1.81%	232
f. Total	16.84%	\$ 2,157

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1993 is \$12,809.

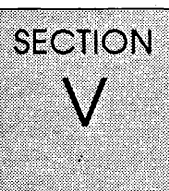


TABLE 11B
Determination of Contribution Sufficiency
COORDINATED - JULY 1, 1993

(Dollars in Thousands)		
	<u>Percentage of Payroll</u>	<u>Dollar Amount</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	4.50%	\$ 96,123
2. Employer Contributions	8.14%	\$ 173,875
3. Total	12.64%	\$ 269,998
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	7.85%	\$ 167,681
b. Disability Benefits	.49%	10,467
c. Survivors	.21%	4,486
d. Deferred Retirement Benefits	.65%	13,884
e. Refunds Due to Death or Withdrawal	.60%	12,816
f. Total	9.80%	\$ 209,334

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1993 is \$2,136,062.





ACTUARIAL ASSUMPTIONS AND METHODS

ACTUARIAL ASSUMPTIONS AND METHODS

Statutes and Standards

Actuarial methods, assumptions and techniques are governed by the Minnesota Statutes, and the Standards for Actuarial Work established by the State of Minnesota Legislative Commission on Pensions and Retirement. Currently these call for the use of a preretirement interest rate of 8.5%, a postretirement interest rate of 5.0%, and a salary increase assumption of 6.5%.

The actuarial method required to determine contributions, also governed by the Statutes and Standards, is the Entry Age Actuarial Cost Method. Under this method normal costs are determined in a manner which spreads costs as a level percentage of payroll. Unfunded liabilities are amortized to July 1, 2020 as a level percentage of total payroll assuming 6.5% payroll growth.

Summary

A summary of assumptions and methods used in the valuation follows.

TABLE 12
Summary of Actuarial Assumptions and Methods

Interest:	Pre-Retirement: 8.5% per annum Post-Retirement: 5% per annum																				
Salary Increases:	Reported salary for prior fiscal year, with new hires annualized, increased 6.5% to current fiscal year and 6.5% annually for each future year.																				
Mortality:	Pre-Retirement: Male - 1971 GAM (Male table) set back 8 years Female - 1971 GAM (Male table) set back 8 years Post-Retirement: Male - Same as above Female - Same as above Post-Disability: Male - Same as above Female - Same as above Life expectancies on this table are shown in Table 12B.																				
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:	First three (3) years of employment: <table><tr><th>Age</th><th colspan="3">Separation Rates by Year</th></tr><tr><td></td><th>1</th><th>2</th><th>3</th></tr><tr><td>Less than 35</td><td>30%</td><td>15%</td><td>10%</td></tr><tr><td>35 - 44</td><td>25%</td><td>12.5%</td><td>8%</td></tr><tr><td>45 - 60</td><td>30%</td><td>15%</td><td>10%</td></tr></table> Thereafter: Shown in Table 12A.	Age	Separation Rates by Year				1	2	3	Less than 35	30%	15%	10%	35 - 44	25%	12.5%	8%	45 - 60	30%	15%	10%
Age	Separation Rates by Year																				
	1	2	3																		
Less than 35	30%	15%	10%																		
35 - 44	25%	12.5%	8%																		
45 - 60	30%	15%	10%																		
Disability:	Shown in Table 12A.																				
Expenses:	Prior year administrative expenses expressed as percentage of prior year payroll. (0.15% of payroll) (Changed from last year when investment expenses were also included.)																				

TABLE 12
Summary of Actuarial Assumptions and Methods
(Continued)

Return of Contributions:	All employees withdrawing after becoming eligible for a deferred benefit were assumed to take the larger of their contributions accumulated with 6% interest or the value of their deferred benefits.
Family Composition:	85% of male Members and 65% of female Members are assumed to be married. Female spouses are assumed to be three years younger. Members are assumed to have no children.
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 5% accounted for by 5% post-retirement interest rate assumption.
Subsidized Joint and Survivor Elections:	<p>Married Members assumed to elect the subsidized joint and survivor form of annuity as follows:</p> <p style="margin-left: 40px;">Males – 15% elect 50% J&S option; 15% elect 75% J&S option; 35% elect 100% J&S option;</p> <p style="margin-left: 40px;">Females – 5% elect 50% J&S option; 5% elect 75% J&S option; 10% elect 100% J&S option.</p>
Actuarial Cost Method:	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.
Asset Valuation Method:	Cost Value plus one-third of Unrealized Gains or Losses.
Payment on the Unfunded Actuarial Accrued Liability:	Level percentage of payroll each year to the statutory amortization date assuming total payroll increases of 6.5% per annum.



TABLE 12A
Probabilities of Separation

<u>Age</u>	<u>Death</u>	<u>Withdrawal</u>	<u>Disability</u>	<u>Retirement</u>
20	.04%	6.00%	.04%	0%
21	.04	6.00	.04	0
22	.04	6.00	.04	0
23	.04	6.00	.05	0
24	.04	6.00	.05	0
25	.05	6.00	.05	0
26	.05	6.00	.05	0
27	.05	6.00	.05	0
28	.05	6.00	.05	0
29	.05	5.80	.05	0
30	.05	5.65	.06	0
31	.06	5.40	.06	0
32	.06	5.20	.06	0
33	.06	5.00	.06	0
34	.07	4.80	.06	0
35	.07	4.40	.06	0
36	.07	3.70	.07	0
37	.08	3.30	.07	0
38	.08	2.80	.08	0
39	.09	2.40	.08	0
40	.09	2.10	.08	0
41	.10	1.95	.09	0
42	.10	1.85	.09	0
43	.11	1.75	.10	0
44	.12	1.60	.10	0
45	.13	1.45	.11	0
46	.14	1.30	.12	0
47	.15	1.15	.13	0
48	.16	1.00	.14	0
49	.18	.85	.16	0



TABLE 12A
Probabilities of Separation
(continued)

<u>Age</u>	<u>Death</u>	<u>Withdrawal</u>	<u>Disability</u>	<u>Retirement</u>
50	.20%	.70%	.17%	0%
51	.23	.55	.19	0
52	.26	.40	.22	0
53	.29	.25	.26	0
54	.33	.10	.30	0
55	.38	.00	.36	0
56	.42	.00	.41	0
57	.47	.00	.47	0
58	.53	.00	.52	0
59	.59	.00	.58	0
60	.65	.00	.63	0
61	.71	.00	.69	0
62	.78	.00	.00	100
63	.85	.00	.00	0
64	.93	.00	.00	0
65	1.00	.00	.00	0
66	1.09	.00	.00	0
67	1.19	.00	.00	0
68	1.31	.00	.00	0
69	1.44	.00	.00	0
70	1.59	.00	.00	0



TABLE 12B
Years of Life Expectancy

<u>Age</u>	<u>Males and Females</u>	<u>Age</u>	<u>Males and Females</u>
50	34.13	80	10.79
51	33.20	81	10.26
52	32.28	82	9.74
53	31.36	83	9.24
54	30.45	84	8.76
55	29.55	85	8.28
56	28.66	86	7.83
57	27.78	87	7.41
58	26.91	88	7.00
59	26.05	89	6.63
60	25.20	90	6.27
61	24.36	91	5.94
62	23.53	92	5.63
63	22.71	93	5.34
64	21.90	94	5.06
65	21.10	95	4.80
66	20.31	96	4.55
67	19.53	97	4.31
68	18.76	98	4.08
69	18.00	99	3.87
70	17.26	100	3.66
71	16.53	101	3.46
72	15.81	102	3.26
73	15.11	103	3.07
74	14.43	104	2.89
75	13.77	105	2.71
76	13.13	106	2.54
77	12.50	107	2.37
78	11.91	108	2.20
79	11.33	109	2.04
		110	1.88

1971 GAM (Male Table) set back 8 years.



SECTION

VI

SUMMARIES OF PLAN PROVISIONS

TABLE 13A
Summary of Plan Provisions (BASIC)

Eligibility	<p>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.</p> <p>No community college teacher with more than 3 years of Allowable Service who was first employed before 7/1/89 is a Member if that person elects coverage under Sec. 354B.</p>
Contributions	<p>Member 8.50% of Salary</p> <p>Employer 12.14% of Salary</p>
Allowable Service	<p>A day of credit is earned if 5 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.</p>
Salary	<p>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.</p>
Average Salary	<p>Average of the 5 highest successive years of Salary. Average Salary must be based on all years of Allowable Service if less than 5 years.</p>

Retirement

Retirement Benefit

Normal Retirement Eligibility

First hired before July 1, 1989:

Age 65 and 3 years of Allowable Service. Age 62 with 30 years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and 1 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 3 years of Allowable Service. Proportionate Retirement Annuity is available at normal retirement age and 1 year of Allowable Service.

Early Retirement Eligibility

First hired before July 1, 1989:

Age 55 and 3 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 3 years of Allowable Service.

Amount

First hired before July 1, 1989:

The greater of:

2% of Average Salary for the first 10 years of Allowable Service and 2.5% 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

2.5% 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:

2.5% 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.

Form of Payment

Life annuity.

Actuarially equivalent options are:

- 50%, 75% or 100% joint and survivor with bounce back feature without additional reduction (option is cancelled if Member is pre-deceased by beneficiary)
- 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 1 full month but less than 12 full months as of the previous June 30 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. In each following year, the lump sum payment is adjusted by TRA to provide the same percentage increase as MPRIF.



Disability

Disability Benefit

Eligibility

Total and permanent disability before normal retirement age with 3 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 to age 65 or the five year anniversary of the effective date of the disability benefit, whichever is later. 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 upon 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 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 paid during 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 a refund of contributions may be elected in lieu of this benefit.



**Surviving Dependent
Children's Benefit**

Eligibility

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

Amount

10% of Salary paid during the last full fiscal year preceding death. Family benefit minimum (including spouse's benefit) of 50% of Salary and maximum of \$1,000 per month. Benefits paid until child marries, dies, or attains age 18 (age 22 if full time student).

**Surviving Spouse
Optional Annuity**

Eligibility

Any active Member or former Member who dies before retirement benefits commence with 3 years of Allowable Service.

Amount

Survivor's payment of the 100% joint and survivor benefit the Member could have elected if retired or an actuarially equivalent 5-, 10-, 15- or 20-year term annuity, if elected.

Upon the death of any member under age 55, the benefit is further reduced below age 55 using 50% of the otherwise applicable early retirement factors. If no surviving spouse, then an actuarially equivalent dependent child benefit is paid to age 20 or for five years, if longer.

Benefit Increases

Adjusted by TRA to provide same increase as MPRIF except joint and survivor benefit increases which are paid from MPRIF.

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

Deferred Benefit

Eligibility

3 years of Allowable Service.

Amount

Benefit computed under law in effect at termination and increased by the following annual percentage: 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.



TABLE 13B
Summary of Plan Provisions (COORDINATED)

Eligibility	<p>A public school, community college, or state university teacher who is covered under the Social Security Act, except for teachers employed by Minneapolis, St. Paul, or Duluth public schools or by the University of Minnesota.</p> <p>No community college or state university teacher first employed after June 30, 1989 is a Member except for purposes of Social Security coverage. No community college or state university teacher first employed before July 1, 1989 is a Member except for purposes of Social Security coverage if that person elects coverage under Sec. 354B.</p>
Contributions	<p>Member 4.50% of Salary</p> <p>Employer 8.14% of Salary</p>
Allowable Service	<p>A day of credit is earned if 5 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.</p>
Salary	<p>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.</p>
Average Salary	<p>Average of the 5 highest successive years of Salary. Average Salary must be based on all years of Allowable Service if less than 5 years.</p>

Retirement

Retirement Benefit

Normal Retirement Eligibility

First hired before July 1, 1989:

Age 65 and 3 years of Allowable Service. Age 62 with 30 years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and 1 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 3 years of Allowable Service. Proportionate Retirement Annuity is available at normal retirement age and 1 year of Allowable Service.

Early Retirement Eligibility

First hired before July 1, 1989:

Age 55 and 3 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 3 years of Allowable Service.

Amount

First hired before July 1, 1989:

The greater of:

1% of Average Salary for the first 10 years of Allowable Service and 1.5% 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

1.5% 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:

1.5% 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.

Form of Payment

Life annuity.

Actuarially equivalent options are:

- 50%, 75% or 100% joint and survivor with bounce back feature without additional reduction (option is cancelled if Member is pre-deceased by beneficiary)
- 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 1 full month but less than 12 months as of the previous June 30 will receive a partial pro rata increase.

Members retired under law 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 is adjusted by TRA to provide the same percentage increase as MPRIF.

Disability

Disability Benefit

Eligibility

Total and permanent disability before normal retirement age with 3 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 elected.

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 upon 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 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	Any active Member or former Member who dies before retirement benefits commence with 3 years of Allowable Service.
Amount	Survivor's payment of the 100% joint and survivor benefit the Member could have elected if retired or an actuarially equivalent 5-, 10-, 15- or 20-year term annuity, if elected. Upon the death of any member under age 55, the benefit is further reduced below age 55 using 50% of the otherwise applicable early retirement factors. If no surviving spouse, then an actuarially equivalent dependent child benefit is paid to age 20 or for five years, if longer.
Benefit Increases	From MPRIF.

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 with 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

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

3 years of Allowable Service.

Amount

Benefit computed under law in effect at termination and increased by the following annual percentage: 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.

