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MINNESOTA
TEACHERS RETIREMENT FUND
ACTUARIAL VALUATION REPORT
JULY 1, 1991

Pursuant to MS 356.215

C&B CONSULTING GROUP

November 25, 1991

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MN State
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Retirement

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

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Ladies and Gentlemen:

Pursuant to our agreement we have completed an actuarial valuation of the Teachers' Retirement Fund as of July 1, 1991 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,

Marilyn M. Oliver, F.S.A., M.A.A.A
Senior Consulting Actuary

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

MMO/DJ:abd

Enclosure

Fifty Fremont Street 24th Floor San Francisco, CA 94105
(415) 979-0600 FAX (415) 979-0177
Actuarial, Benefits & Compensation Consulting
A CORROON & BLACK COMPANY

ACTUARIAL VALUATION REPORT

JULY 1, 1991

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SECTION I

OVERVIEW

REPORT HIGHLIGHTS

	(Dollars in Thousands) 07/01/90 VALUATION	07/01/91 VALUATION
A. CONTRIBUTIONS		
1. Statutory Contributions - Chapter 354 % of Payroll	12.80%	12.76%
2. Required Contributions - Chapter 356 % of Payroll	13.21%	13.15%
3. Sufficiency (Deficiency) (A1-A2)	(.41%)	(.39%)
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets	$ 5,131,999	$ 5,614,924
b. Current Benefit Obligations	$ 5,976,072	$ 6,514,621
c. Funding Ratio (a/b)	85.88%	86.19%
2. Accrued Liability Funding Ratio		
a. Current Assets	$ 5,131,999	$ 5,614,924
b. Actuarial Accrued Liability	$ 6,609,696	$ 7,157,666
c. Funding Ratio (a/b)	77.64%	78.45%
3. Projected Benefit Funding Ratio		
a. Current and Expected Future Assets	$ 8,355,468	$ 8,983,334
b. Current and Expected Future Benefit Obligations	$ 8,528,851	$ 9,146,481
c. Funding Ratio (a/b)	97.97%	98.22%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number	64,314	65,058
b. Projected Annual Earnings	$ 1,901,131	$ 1,995,643
c. Average Annual Earnings	$ 29,560	$ 30,675
d. Average Age	42.6	42.8
e. Average Service	12.0	12.3
2. Others		
a. Service Retirements	16,133	16,995
b. Disability Retirements	257	282
c. Survivors	929	969
d. Deferred Retirements	2,827	3,310
e. Terminated Other Non-vested	14,172	14,963
f. Total	34,318	36,519

DISCUSSION

Contributions

Statutory and required contributions remained relatively stable, as did the level of deficiency. The fund moved from a (.41%) deficiency to a (.39%) deficiency.

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 Government 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.

Due to the contribution deficiency, the Projected Benefit Funding Ratio remained less than one (100%). Thus expected Future Statutory Contributions plus Current Assets is still less than the value of total Expected Benefit Obligations.

SECTION II

ASSETS

ASSETS

Summaries

July 1, 1991 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, 1991.

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 MPRIF at year end.

TABLE 1 : JULY 1, 1991 ACCOUNTING BALANCE SHEET

(Dollars in Thousands)

	MARKET VALUE	COST VALUE
A. ASSETS		
1. Cash, Equivalents, Short-Term Securities	$ 32,862	$ 32,862
2. Investments		
a. Fixed Income	871,903	872,827
b. Equity	2,611,864	2,306,011
c. Real Estate	0	0
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)*	2,301,369	2,301,369
4. Other	30,140	30,140
B. TOTAL ASSETS	$ 5,848,138	$ 5,543,209
C. AMOUNTS CURRENTLY PAYABLE*	$ 29,928	$ 29,928
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	$ 838,160	$ 838,160
2. Employer Reserves	2,678,681	2,373,752
3. MPRIF Reserves*	2,301,369	2,301,369
4. Non-MPRIF Reserves	0	0
5. Total Assets Available for Benefits	$ 5,818,210	$ 5,513,281
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	$ 5,848,138	$ 5,543,209

F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		$ 5,513,281
2. Market Value (D5)	$ 5,818,210	
3. Cost Value (D5)	5,513,281	
4. Market Over Cost (F2-F3)	$ 304,929	
5. 1/3 of Market Over Cost (F4)/3		101,643
6. Actuarial Value of Assets (F1+F5) (Same as "Current Assets")		$ 5,614,924

*Reflects mortality loss for 1990-91 of $1,048

TABLE 2 : CHANGES IN ASSETS AVAILABLE FOR BENEFITS

YEAR ENDING JUNE 30, 1991

(Dollars in Thousands)

	MARKET VALUE	COST VALUE
A. ASSETS AVAILABLE AT BEGINNING OF YEAR	$ 5,304,981	$ 5,045,508
B. OPERATING REVENUES		
1. Member Contributions	$ 89,313	$ 89,313
2. Employer Contributions	159,439	159,439
3. Investment Income	235,771	235,771
4. MPRIF	195,106	195,106
5. Net Realized Gain (Loss)	0	0
6. Other	1,965	1,965
7. Net Change in Unrealized Gain (Loss)	45,456	0
8. Total Revenue	$ 727,050	$ 681,594
C. OPERATING EXPENSES		
1. Service Retirements	$ 194,589	$ 194,589
2. Disability Benefits	2,921	2,921
3. Survivor Benefits	2,905	2,905
4. Refunds	5,554	5,554
5. Expenses	7,138	7,138
6. Other	714	714
7. Total Disbursements	$ 213,821	$ 213,821
D. CHANGES IN RESERVES	0	0
E. FUND BALANCE JUNE 30, 1991	$ 5,818,210	$ 5,513,281

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, 1991 demographic information on active and retired members by age and service (years retired). That information is summarized below.

Table

3. - Total Active Members:		
Count		65,058
Average Pay (90 - 91)	$	28,803
Total Payroll (thousands)	$	1,873,839
3A - Basic Active Members		
Count		681
Average Pay (90 - 91)	$	41,904
Total Payroll (thousands)	$	28,537
3B - Coordinated Active Members		
Count		64,377
Average Pay (90 - 91)	$	28,664
Total Payroll (thousands)	$	1,845,302
4 - Service Retirements		
Count		16,995
Average Annual Benefit	$	12,064
Total Annual Benefit (thousands)	$	205,020
4A - Basic Service Retirements		
Count		5,173
Average Annual Benefit	$	16,432
Total Annual Benefit (thousands)	$	85,003
4B - Coordinated Service Retirements		
Count		11,822
Average Annual Benefit	$	10,152
Total Annual Benefit (thousands)	$	120,017

Demographics (continued)

Table

5 - Disabled Members under Retirement Age		
Count		282
Average Annual Benefit	$	10,182
Total Annual Benefit (thousands)	$	2,872
5A - Basic Disabled		
Count		32
Average Annual Benefit	$	21,492
Total Annual Benefit (thousands)	$	688
5B - Coordinated Disabled		
Count		250
Average Annual Benefit	$	8,734
Total Annual Benefit (thousands)	$	2,184
6 - Survivors		
Count		969
Average Annual Benefit	$	10,343
Total Annual Benefit (thousands)	$	10,023
6A - Basic Survivors		
Count		325
Average Annual Benefit	$	13,104
Total Annual Benefit (thousands)	$	4,259
6B - Coordinated Survivors		
Count		644
Average Annual Benefit	$	8,950
Total Annual Benefit (thousands)	$	5,764

Table 7 presents a reconciliation of July 1, 1990 and July 1, 1991 data. The number of active members increased by 1% during the year. The number of service retired members increased by 5%.

MINNESOTA
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Average Annual Earnings and Membership Distribution of Active Members as of June 30, 1991

Membership Distribution

	Years of Service								
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	Total
<20									
20-24	450	1,106	1						1,557
25-29	1,183	4,150	760	1					6,094
30-34	757	2,662	2,430	713					6,562
35-39	737	2,672	1,662	2,904	1,074				9,049
40-44	831	2,957	1,789	2,058	4,218	1,957			13,810
45-49	488	1,777	1,220	1,214	1,678	3,889	1,151		11,417
50-54	234	899	704	770	1,013	1,973	2,262	674	8,529
55-59	115	453	299	356	588	1,032	1,225	1,568	5,636
60-64	56	223	101	135	235	429	396	499	2,074
65-69	28	58	20	18	20	57	41	51	293
70+	5	21	3	1	5	1	1		37
Total	4,884	16,978	8,989	8,170	8,831	9,338	5,076	2,792	65,058

Average Annual Earnings

	Years of Service								
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	Total
<20									
20-24	19,642	5,514	30,510						9,613
25-29	16,637	15,181	26,074	19,480					16,823
30-34	15,435	15,209	26,550	30,030					21,045
35-39	14,420	14,207	27,681	31,584	36,089				24,873
40-44	13,027	14,114	28,777	33,415	37,369	39,670			29,549
45-49	12,176	13,562	28,030	34,624	38,924	41,488	42,263		33,422
50-54	9,528	12,268	26,627	32,796	39,172	42,671	43,036	43,874	36,118
55-59	7,960	9,942	21,466	32,163	37,732	42,285	43,318	44,854	37,705
60-64	6,469	6,458	19,539	28,702	38,650	40,745	42,914	45,100	35,541
65-69	3,883	4,150	17,576	31,105	34,598	44,976	47,074	45,870	29,986
70+	11,302	3,384	7,738	12,883	45,330	42,281	41,558		12,815
Total	14,593	13,586	27,095	32,448	37,772	41,432	42,952	44,680	28,803

MINNESOTA
TEACHERS RETIREMENT FUND

Average Annual Earnings and Membership Distribution of Active Members as of June 30, 1991

Membership Distribution

	Years of Service								
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	Total
<20									
20-24									
25-29									
30-34									
35-39									
40-44									
45-49						1			1
50-54				1		8	14	85	108
55-59				1	2	7	35	395	440
60-64		2			1	7	13	92	115
65-69		1						16	17
70+									
Total		3		2	3	23	62	588	681

Average Annual Earnings

	Years of Service								
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	Total
<20									
20-24									
25-29									
30-34									
35-39									
40-44									
45-49						44,871			44,871
50-54				65		36,260	37,725	41,766	40,448
55-59				184	8,534	41,581	38,588	43,764	43,058
60-64		1,064			4,263	40,244	40,652	40,555	39,545
65-69		51						39,394	37,080
70+									
Total		726		125	7,110	39,466	38,826	42,854	41,904

MINNESOTA
TEACHERS RETIREMENT FUND

Average Annual Earnings and Membership Distribution of Active Members as of June 30, 1991

Membership Distribution

	Years of Service								
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	Total
<20									
20-24	450	1,106	1						1,557
25-29	1,183	4,150	760	1					6,094
30-34	757	2,662	2,430	713					6,562
35-39	737	2,672	1,662	2,904	1,074				9,049
40-44	831	2,957	1,789	2,058	4,218	1,957			13,810
45-49	488	1,777	1,220	1,214	1,678	3,888	1,151		11,416
50-54	234	899	704	769	1,013	1,965	2,248	589	8,421
55-59	115	453	299	355	586	1,025	1,190	1,173	5,196
60-64	56	221	101	135	234	422	383	407	1,959
65-69	28	57	20	18	20	57	41	35	276
70+	5	21	3	1	5	1	1		37
Total	4,884	16,975	8,989	8,168	8,828	9,315	5,014	2,204	64,377

Average Annual Earnings

	Years of Service								
Age	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	Total
<20									
20-24	19,642	5,514	30,510						9,613
25-29	16,637	15,181	26,074	19,480					16,823
30-34	15,435	15,209	26,550	30,030					21,045
35-39	14,420	14,207	27,681	31,584	36,089				24,873
40-44	13,027	14,114	28,777	33,415	37,369	39,670			29,549
45-49	12,176	13,562	28,030	34,624	38,924	41,487	42,263		33,421
50-54	9,528	12,268	26,627	32,838	39,172	42,697	43,069	44,179	36,062
55-59	7,960	9,942	21,466	32,253	37,832	42,290	43,457	45,222	37,252
60-64	6,469	6,507	19,539	28,702	38,797	40,754	42,991	46,128	35,306
65-69	3,883	4,222	17,576	31,105	34,598	44,976	47,074	48,830	29,549
70+	11,302	3,384	7,738	12,883	45,330	42,281	41,558		12,815
Total	14593	13,589	27,095	32,456	37,783	41,437	43,003	45,168	28,664

MINNESOTA
TEACHERS RETIREMENT FUND

Service Retirements as of June 30, 1991

Membership Distribution

	Years Retired							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50		7	3	1				11
50-54	5	21	10	3	1			40
55-59	246	815	11	7	1			1,080
60-64	526	1,731	1,050	7				3,314
65-69	264	1,225	1,870	312	4			3,675
70-74	30	211	1,654	1,004	148	1		3,048
75-79	3	9	238	1,535	622	88	2	2,497
80-84		1	6	168	1,444	168	60	1,847
+85				2	417	769	295	1,483
Total	1,074	4,020	4,842	3,039	2,637	1,026	357	16,995

Average Annual Benefit

	Years Retired							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50		871	641	935				814
50-54	12,228	8,999	1,131	1,019	245			6,618
55-59	15,598	15,088	7,952	1,896	543			15,033
60-64	15,443	16,270	16,907	4,849				16,316
65-69	12,204	12,477	14,265	7,666	9,972			12,956
70-74	12,247	11,795	12,599	11,552	6,087	11,597		11,878
75-79	1,197	8,844	11,381	11,076	9,257	4,460	9,096	10,397
80-84		3,568	2,387	8,866	8,708	4,272	5,040	8,177
+85				2,662	6,164	6,244	7,403	6,447
Total	14,539	14,555	14,062	10,706	8,284	5,773	7,015	12,064

Table 4A
Basic

MINNESOTA
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Service Retirements as of June 30, 1991

Membership Distribution

	Years Retired							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50								
50-54	1	3						4
55-59	64	225	5					294
60-64	82	392	431	3				908
65-69	27	186	607	142	3			965
70-74	6	34	434	396	88	1		959
75-79		1	55	507	283	70	2	918
80-84		1	2	52	422	83	57	617
+85					81	225	202	508
Total	180	842	1,534	1,100	877	379	261	5,173

Average Annual Benefit

	Years Retired							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50								
50-54	1,426	15,182						11,743
55-59	24,020	21,907	13,556					22,225
60-64	23,639	22,168	21,639	7,025				21,999
65-69	21,352	19,794	21,324	11,280	13,220			19,527
70-74	12,762	18,350	19,471	15,592	8,438	11,597		16,767
75-79		1,781	17,920	15,190	11,244	4,863	9,096	13,322
80-84		3,568	1,985	9,090	12,189	5,430	5,226	10,329
+85					9,278	10,160	9,314	9,683
Total	22,945	21,348	20,716	14,520	11,243	8,149	8,420	16,432

MINNESOTA
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Service Retirements as of June 30, 1991

Membership Distribution

	Years Retired							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50		7	3	1				11
50-54	4	18	10	3	1			3(
55-59	182	590	6	7	1			78(
60-64	444	1,339	619	4				2,40(
65-69	237	1,039	1,263	170	1			2,71(
70-74	24	177	1,220	608	60			2,08(
75-79	3	8	183	1,028	339	18		1,57(
80-84			4	116	1,022	85	3	1,23(
+85				2	336	544	93	97(
Total	894	3,178	3,308	1,939	1,760	647	96	11,82(

Average Annual Benefit

	Years Retired							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50		871	641	935				81(
50-54	14,928	7,969	1,131	1,019	245			6,04(
55-59	12,636	12,488	3,282	1,896	543			12,34(
60-64	13,930	14,544	13,612	3,217				14,17(
65-69	11,162	11,167	10,872	4,647	225			10,61(
70-74	12,119	10,536	10,154	8,920	2,639			9,63(
75-79	1,197	9,727	9,416	9,046	7,597	2,893		8,69(
80-84			2,588	8,765	7,271	3,141	1,503	7,09(
+85				2,662	5,413	4,624	3,252	4,76(
Total	12,846	12,755	10,977	8,543	6,809	4,381	3,197	10,15(

Table 5

MINNESOTA
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Disability Retirements As of June 30, 1991

Membership Distribution

	Years Disabled							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50	11	24	9	3				47
50-54	8	26	15	6	1			56
55-59	14	43	17	5	4			83
60-64	12	29	26	12	3	1		83
65-69	1	4	6	2				13
70-74								
75-79								
80-84								
+85								
Total	46	126	73	28	8	1		282

Average Annual Benefit

	Years Disabled							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50	5,716	5,839	11,950	3,016				6,800
50-54	10,861	9,198	6,569	5,708	1,874			8,227
55-59	12,263	11,144	10,705	7,826	8,630			10,922
60-64	13,146	12,057	14,277	10,266	11,476	8,104		12,582
65-69	5,217	11,912	12,213	7,034				10,785
70-74								
75-79								
80-84								
+85								
Total	10,531	9,966	11,405	7,846	8,853	8,104		10,182

Table 5
Bas

MINNESOTA
TEACHERS RETIREMENT FUND

Disability Retirements As of June 30, 1991

Membership Distribution

	Years Disabled							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50								
50-54								
55-59	1	6	2	2	1			12
60-64		4	8	4	2	1		19
65-69			1					1
70-74								
75-79								
80-84								
+85								
Total	1	10	11	6	3	1		32

Average Annual Benefit

	Years Disabled							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50								
50-54								
55-59	26,162	27,351	21,798	14,247	18,994			23,446
60-64		22,460	25,520	14,358	15,591	8,104		20,564
65-69			15,687					15,687
70-74								
75-79								
80-84								
+85								
Total	26,162	25,395	23,949	14,321	16,725	8,104		21,492

MINNESOTA
TEACHERS RETIREMENT FUND

Disability Retirements As of June 30, 1991

Membership Distribution

	Years Disabled							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50	11	24	9	3				47
50-54	8	26	15	6	1			56
55-59	13	37	15	3	3			71
60-64	12	25	18	8	1			64
65-69	1	4	5	2				12
70-74								
75-79								
80-84								
+85								
Total	45	116	62	22	5			250

Average Annual Benefit

	Years Disabled							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50	5,716	5,839	11,950	3,016				6,800
50-54	10,861	9,198	6,569	5,708	1,874			8,227
55-59	11,194	8,516	9,226	3,545	5,175			8,805
60-64	13,146	10,392	9,280	8,221	3,246			10,213
65-69	5,217	11,912	11,518	7,034				10,377
70-74								
75-79								
80-84								
+85								
Total	10,183	8,636	9,179	6,080	4,129			8,734

MINNESOTA
TEACHERS RETIREMENT FUND

Survivors As of June 30, 1991

Membership Distribution

	Years since Death							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50	1	5	1		1	2		1
50-54	3	11	5	1		1		2
55-59	9	35	22	7	5			7
60-64	9	43	70	19	8	2	3	15
65-69	6	38	104	46	7	1	1	20
70-74	1	10	80	83	15	7	5	20
75-79			16	141	40	6	7	21
80-84			1	22	31	5	2	6
+85			3	2	5	11	10	3
Total	29	142	302	321	112	35	28	96

Average Annual Benefit

	Years Since Death							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50	916	9,444	2,827		4,157	1,901		5,892
50-54	5,800	6,405	7,772	11,002		2,840		6,693
55-59	8,914	8,377	12,133	9,902	4,665			9,397
60-64	9,741	10,892	12,746	11,897	8,204	3,259	2,327	11,386
65-69	12,738	7,555	11,812	11,177	5,958	10,630	2,280	10,644
70-74	3,120	6,267	11,394	10,497	12,646	4,663	3,600	10,393
75-79			7,597	12,746	11,050	4,081	2,440	11,439
80-84			11,148	10,259	69,30	6,756	4,638	8,110
+85			2,035	12,887	7,723	5,538	5,885	6,137
Total	9,164	8,655	11,522	11,652	9,107	5,017	4,017	10,343

Table 6A
Basic

MINNESOTA
TEACHERS RETIREMENT FUND

Survivors As of June 30, 1991

Membership Distribution

	Years Since Death							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50		2			1	1		4
50-54		1	2	1		1		5
55-59	1	5	13	6	4			29
60-64		8	26	13	6	1	3	57
65-69	2	5	27	18	4	1	1	58
70-74			21	28	8	5	5	67
75-79			4	43	12	4	7	70
80-84			1	8	7	3	1	20
+85			3	1		5	6	15
Total	3	21	97	118	42	21	23	325

Average Annual Benefit

	Years Since Death							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50		12,406			4,157	1,877		7,711
50-54		15,086	12,773	11,002		2,840		10,895
55-59	18,395	16,831	13,462	10,585	5,659			12,542
60-64		14,095	15,715	12,330	8,491	4,647	2,327	13,056
65-69	18,841	13,841	15,865	12,800	7,738	10,630	2,280	13,957
70-74			17,543	14,997	17,016	5,121	3,600	14,449
75-79			8,338	17,390	15,120	4,046	2,440	14,226
80-84			11,148	11,556	7,611	6,911	6,817	9,221
+85			2,035	18,481		6,915	8,074	7,174
Total	18,692	14,572	15,015	14,778	11,418	5,576	4,330	13,104

Table
Coordinat

MINNESOTA
TEACHERS RETIREMENT FUND

Survivors As of June 30, 1991

Membership Distribution

	Years Since Death							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Total
<50	1	3	1			1		6
50-54	3	10	3					16
55-59	8	30	9	1	1			49
60-64	9	35	44	6	2	1		97
65-69	4	33	77	28	3			145
70-74	1	10	59	55	7	2		134
75-79			12	98	28	2		140
80-84				14	24	2	1	41
+85				1	5	6	4	16
Total	26	121	205	203	70	14	5	644

Average Annual Benefit

	Years Since Death							
Age	<1	1-4	5-9	10-14	15-19	20-24	25+	Tota
<50	916	7,470	2,827			1,925		4,680
50-54	5,800	5,537	4,438					5,380
55-59	7,729	6,968	10,212	5,805	691			7,536
60-64	9,741	10,160	10,991	10,958	7,343	1,870		10,04
65-69	9,687	6,603	10,390	10,133	3,586			9,318
70-74	3,120	6,267	9,206	8,206	7,653	3,520		8,365
75-79			7,351	10,708	9,306	4,149		10,046
80-84				9,517	6,731	6,524	2,459	7,568
+85				7,293	7,723	4,390	2,602	5,166
Total	8,065	7,628	9,869	9,835	7,720	4,180	2,573	8,950

TABLE 7 : RECONCILIATION OF MEMBERS

YEAR ENDING JUNE 30, 1991

	ACTIVES	INACTIVE
A. AS OF JUNE 30, 1990	64,314	17,493
B. ADDITIONS	6,985	3,976
C. DELETIONS:		
1. Service Retirement	(1,122)	(172)
2. Disability	(60)	(4)
3. Death	(57)	(23)
4. Terminated - No Refund	(3,944)	0
5. Terminated-Refund	(1,065)	(1,006)
6. Returned to Active	0	(1,458)
7. Write-offs	0	(782)
8. Restore Write-offs	0	107
D. DATA ADJUSTMENTS	7	142
E. TOTAL ON JUNE 30, 1991	65,058	18,273
Vested	49,160	3,310
Nonvested	15,898	14,963

	RECIPIENTS		
	RETIREMENT ANNUITANTS	DISABLED	SURVIVORS
A. ON JUNE 30, 1990	16,133	257	929
B. ADDITIONS	1,301	68	132
C. DELETIONS:			
1. Service Retirement	0	(14)	0
2. Death	(417)	(18)	(12)
3. Annuity Expired	(5)	0	(71)
4. Returned as Active	0	(11)	0
D. DATA ADJUSTMENTS	(17)	0	(9)
E. TOTAL ON JUNE 30, 1991	16,995	282	969

SECTION IV

FUNDING STATUS

FUNDING STATUS

Changes Since Previous Valuation

There have been no changes in the actuarial assumptions or plan provisions since the previous valuation.

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 in more detail below.

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. If an excess exists, it is shown as a negative unfunded liability on line H. To the extent that a deficiency exists, it is reflected as a positive unfunded liability on line H.

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	$ 2,505,166
Current Employees:	
Accumulated employee contributions including allocated investment income	$ 1,662,720
Employer-financed vested	$ 2,111,844
Employer-financed nonvested	$ 234,891
Total Pension Benefit Obligation	$ 6,514,621

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 from each member's entry 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 due to differences in actual versus assumed experience during the year are shown in Table 10.

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.

TABLE 8 : ACTUARIAL BALANCE SHEET

JULY 1, 1991

(Dollars in Thousands)

A. CURRENT ASSETS (TABLE 1, F6)			$ 5,614,924
B. EXPECTED FUTURE ASSETS			
1. Present Value of Expected Future Statutory Supplemental Contributions			$ 1,379,595
2. Present Value of Future Normal Costs			1,988,815
3. Total Expected Future Assets			$ 3,368,410
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$ 8,983,334
D. CURRENT BENEFIT OBLIGATIONS	Nonvested	Vested	Total
1. Benefit Recipients			
a. Retirement Annuities	$ 0	$ 2,260,070	$ 2,260,070
b. Disability Benefits	0	41,008	41,008
c. Surviving Spouse and Child Benefits	0	84,065	84,065
2. Deferred Retirements with Augmentation	0	97,736	97,736
3. Former Members without Vested Rights	0	22,287	22,287
4. Active Members			
a. Retirement Annuities	13,725	3,613,582	3,627,307
b. Disability Benefits	152,950	0	152,950
c. Survivors' Benefits	67,388	0	67,388
d. Deferred Retirements	828	122,378	123,206
e. Refund Liability Due to Death or Withdrawal	0	38,604	38,604
5. Total Current Benefit Obligations	$ 234,891	$ 6,279,730	$ 6,514,621
E. EXPECTED FUTURE BENEFIT OBLIGATIONS			$ 2,631,860
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$ 9,146,481
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			$ 899,697
H. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			$ 163,147

TABLE 9 : DETERMINATION OF UNFUNDED ACTUARIAL ACCRUE LIABILITY (UAAL) AND SUPPLEMENTAL CONTRIBUTION RATE

JULY 1, 1991

(Dollars in Thousands)

	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	$ 6,032,581	$ 1,594,085	$ 4,438,496
b. Disability Benefits	252,641	99,319	153,322
c. Survivors Benefits	110,460	34,855	75,605
d. Deferred Retirements	200,110	143,667	56,443
e. Refunds: Death/Withdrawal	45,523	116,889	(71,366
f. Total	$ 6,641,315	$ 1,988,815	$ 4,652,500
2. Deferred Retirements with Future Augmentation	$ 97,736		$ 97,736
3. Former Members Without Vested Rights	$ 22,287		$ 22,287
4. Annuitants in MPRIF	$ 2,315,340		$ 2,315,340
5. Recipients not in MPRIF	$ 69,803		$ 69,803
6. Total	$ 9,146,481	$ 1,988,815	$ 7,157,666
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			$ 7,157,666
2. Current Assets (Table 1,F6)			$ 5,614,924
3. UAAL (B1-B2)			$ 1,542,742
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020			$ 43,200,363
2. Supplemental Contribution Rate (B3/C1)			3.5

TABLE 10 : CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)

YEAR ENDING JUNE 30, 1991

	(Dollars in Thousands)
A. UAAL AT BEGINNING OF YEAR	$ 1,477,697
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	$ 188,702
2. Contribution	(248,752)
3. Interest on A, B1, and B2	131,072
4. Total (B1+B2+B3)	$ 71,022
C. EXPECTED UAAL AT END OF YEAR (A+B4)	$ 1,548,719
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	$ (78,906)
2. Investment Return	15,140
3. MPRIF Mortality*	15,019
4. Mortality of Other Benefit Recipients*	(3,939)
5. Other Items	46,709
6. Total	$ (5,977)
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D6)	$ 1,542,742
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)	$ 1,542,742

* Difference between liabilities calculated in this report and the expected value as of July 1, 1991 of liabilities generated as of July 1, 1990 by the Commission's actuary.

TABLE 11 : DETERMINATION OF CONTRIBUTION SUFFICIENCY

JULY 1, 1991

(Dollars in Thousands)

	% OF PAYROLL	$ AMOUNT
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	4.56%	$ 91,021
2. Employer Contributions	8.20%	$ 163,663
3. Total	12.76%	$ 254,684
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	7.43%	$ 148,233
b. Disability Benefits	.46%	9,044
c. Survivors	.17%	3,327
d. Deferred Retirement Benefits	.64%	12,670
e. Refunds Due to Death or Withdrawal	.54%	10,894
f. Total	9.24%	$ 184,168
2. Supplemental Contribution: Amortization by July 1, 2020 of UAAL of $1,542,742	3.57%	$ 71,244
3. Allowance for Expenses	.34%	$ 6,785
4. Total	13.15%	$ 262,197
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) (A3-B4)	(0.39%)	$ (7,513)

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1991 is $1,995,643.

TABLE 11A: DETERMINATION OF CONTRIBUTION SUFFICIENCY

BASIC - JULY 1, 1991

(Dollars in Thousands)

	% OF PAYROLL	$ AMOUNT
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	8.50%	$ 2,586
2. Employer Contributions	12.14%	$ 3,694
3. Total	20.64%	$ 6,280
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	11.81%	$ 3,593
b. Disability Benefits	.66%	201
c. Survivors	.60%	183
d. Deferred Retirement Benefits	.95%	289
e. Refunds Due to Death or Withdrawal	1.57%	478
f. Total	15.59%	$ 4,744

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1991 is $30,427.

TABLE 11B: DETERMINATION OF CONTRIBUTION SUFFICIENCY

COORDINATED - JULY 1, 1991

(Dollars in Thousands)

	% OF PAYROLL	$ AMOUNT
A. STATUTORY CONTRIBUTIONS - CHAPTER 354		
1. Employee Contributions	4.50%	$ 88,435
2. Employer Contributions	8.14%	$ 159,969
3. Total	12.64%	$ 248,404
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	7.36%	$ 144,640
b. Disability Benefits	.45%	8,843
c. Survivors	.16%	3,144
d. Deferred Retirement Benefits	.63%	12,381
e. Refunds Due to Death or Withdrawal	.53%	10,416
f. Total	9.13%	$ 179,424

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1991 is $1,965,216.

SECTION V

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 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:

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%

Thereafter: Shown in Table 12A.

Disability:

Shown in Table 12A.

Expenses:

Prior year expenses expressed as percentage of prior year payroll. (0.34% of payroll)

Return of Contributions:	All employees withdrawing after becoming eligible for a deferred benefit were assumed to take the larger of their contributions accumulated with 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 assumptions.
Subsidized Joint and Survivor Elections:	Married Members assumed to elect the subsidized joint and survivor form of annuity as follows: 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.
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 payroll increases of 6.5% per annum.

TABLE 12A: PROBABILITIES OF SEPARATION

Age	Death	Withdrawal	Disability	Retirement
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
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

TABLE 12A: PROBABILITIES OF SEPARATION
(CONTINUED)

Age	Death	Withdrawal	Disability	Retirement
55	.38%	0%	.36%	0%
56	.42	0	.41	0
57	.47	0	.47	0
58	.53	0	.52	0
59	.59	0	.58	0
60	.65	0	.63	0
61	.71	0	.69	0
62	.78	0	.00	100%
63	.85	0	.00	0
64	.93	0	.00	0
65	1.00	0	.00	0
66	1.09	0	.00	0
67	1.19	0	.00	0
68	1.31	0	.00	0
69	1.44	0	.00	0
70	1.59	0	.00	0

TABLE 12B: YEARS OF LIFE EXPECTANCY

Age	Males and Females	Age	Males and Females
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 (BASIC) : SUMMARY OF PLAN PROVISIONS

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 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.
Contributions	Member 8.5% of Salary. Employer 12.14% of Salary
Allowable Service	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.
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 5 highest successive years of Salary. Average Salary must be based on all years of Allowable Service if less than 5 years.

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% 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 $5 per month for each year under normal retirement age at commencement of disability (maximum of $50 per month). Payments stop at normal retirement age, or 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 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	Member or former Member who dies before retirement benefits commence, if age 50 with 3 years of Allowable Service or any age with 30 years of Allowable Service. If the Member dies before age 55 with less than 30 years of Allowable Service, benefits commence when Member would have been age 55.
Amount	Survivor's payment of the 100% joint and survivor benefit the Member could have elected if retired.
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 if death occurred before May 16, 1989, and 6% interest 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 : (COORDINATED) SUMMARY OF PLAN PROVISIONS

Eligibility	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. 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.
Contributions	Member 4.5% of Salary Employer 8.14% of Salary.
Allowable Service	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.
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 5 highest successive years of Salary. Average Salary must be based on all years of Allowable Service if less than 5 years.

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% 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 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 who dies before retirement benefits commence, if age 50 with 3 years of Allowable Service or any age with 30 years of Allowable Service. If the Member dies before age

	55 with less than 30 years of Allowable Service, benefits commence when Member would have been age 55.
Amount	Survivor's payment of the 100% joint and survivor benefit the Member could have elected if retired.
Benefit Increase	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 if death occurred before May 16, 1989, and 6% interest 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 annuall 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.