



## MILLIMAN & ROBERTSON, INC.

Actuaries and Consultants

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January 14, 1993

Karen Kilberg, CFP  
Executive Director  
Minneapolis Teachers Retirement Fund Association  
730 Second Avenue South  
815 Peavey Building  
Minneapolis, Minnesota 55402

Re: *July 1, 1992 Actuarial Valuation Report*

Dear Karen:

Enclosed please find the actuarial valuation report for the Minneapolis Teachers' Retirement Fund Association as of July 1, 1992.

Please refer to the Commentary Section of the report for a discussion of the following changes which have been reflected in this 1992 valuation of the Fund.

- ▶ Contribution rates for Coordinated Members have increased from 4.50% to 5.50% of payroll effective July 1, 1993;
- ▶ Additional supplemental contributions effective July 1, 1994 for terminating Basic Members have been reflected;
- ▶ Liability for Members on leave of absence has been recognized;
- ▶ The timing of contributions assumed in calculating the Present Value of Future Compensation for Normal Cost purposes has been changed from beginning of year to mid-year to conform with the Actuarial Standards; and
- ▶ The post-retirement assumed rate of interest was increased from 8.00% to 8.50% per annum to better conform with current plan provisions.

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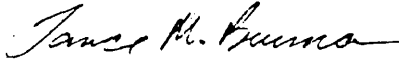
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JAN 19 1993

LCP&F

Please contact us at (612) 897-5300 with your questions/comments concerning the enclosed report.

Sincerely,



Lance M. Burma, FSA  
Actuary

Enclosure

cc: Steven J. Schugel, MTRFA  
Thomas K. Custis, M&R Milwaukee  
Lawrence A. Martin, LCPR  
Phillip Kapler, MN Department of Finance  
Terrence J. Ward, Coopers & Lybrand

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**Minneapolis Teachers' Retirement Fund**  
***ACTUARIAL VALUATION REPORT***

July 1, 1992



## MILLIMAN & ROBERTSON, INC.

Actuaries and Consultants

Suite 1850  
8500 Normandale Lake Boulevard  
Minneapolis, Minnesota 55437  
Telephone: 612/897-5300  
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January 14, 1993

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

Re: *Minneapolis Teachers' Retirement Fund*

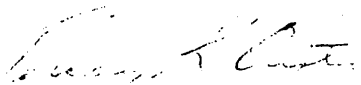
Commission Members:

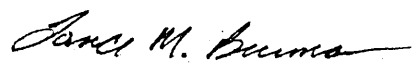
Pursuant the terms of our actuarial services contract, we have performed an actuarial valuation of the Minneapolis Teachers' Retirement Fund as of July 1, 1992.

The results of our calculations are set forth in the following report, as are the actuarial assumptions upon which our calculations have been made. We have relied on the basic employee data and asset figures as submitted by the Minneapolis Teachers' Retirement Fund.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with the requirements of Section 356.215, Minnesota Statutes, and the requirements of the Standards of Actuarial Work, adopted by the Commission on July 8, 1992.

Respectfully submitted,

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

  
Lance M. Burma, F.S.A., M.A.A.A.  
Actuary

Enclosure

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**Minneapolis Teachers' Retirement Fund**  
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**Minneapolis Teachers' Retirement Fund**

**Report Highlights**

*(dollars in thousands)*

	<u>July 1, 1991 Valuation</u>	<u>July 1, 1992 Valuation</u>
<b>A. CONTRIBUTIONS (Table 11)</b>		
1. Statutory Contributions - Chapter 354A % of Payroll	16.96%	15.86%
2. Required Contributions - Chapter 356 % of Payroll	30.55%	27.43%
3. Sufficiency (Deficiency): (A1-A2)	<u>(13.59%)</u>	<u>(11.57)%*</u>
<b>B. FUNDING RATIOS</b>		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$ 424,677	\$ 457,978
b. Current Benefit Obligations (Table 8)	\$ 779,570	\$ 795,080
c. Funding Ratio: (a/b)	<u>54.48%</u>	<u>57.60%</u>
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$ 424,667	\$ 457,978
b. Actuarial Accrued Liability (Table 9)	\$ 826,574	\$ 840,840
c. Funding Ratio: (a/b)	<u>51.38%</u>	<u>54.47%</u>
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$ 616,675	\$ 670,786*
b. Current and Expected Future Benefit Obligations	\$ 989,755	\$ 1,012,509
c. Funding Ratio: (a/b)	<u>62.30%</u>	<u>66.25%</u>

\* See "Changes in Plan Provisions" and "Changes in Actuarial Assumptions" in Commentary Section of this report.

Minneapolis Teachers' Retirement Fund

**Report Highlights**

(dollars in thousands)

	July 1, 1991 Valuation	July 1, 1992 Valuation
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	3,169	3,635
b. Projected Annual Earnings	\$ 126,805	\$ 145,767
c. Average Annual Earnings (Actual \$)	\$ 40,014	\$ 40,101
d. Average Age	45.1	43.7
e. Average Service	12.6**	11.0
f. Additional Members on Leave of Absence	255	109*
2. Others		
a. Service Retirements (Table 4)	2,337	2,356
b. Disability Retirements (Table 6)	39	44
c. Survivors (Table 5)	193	196
d. Deferred Retirements (Table 7)	492	516
e. Terminated Other Non-Vested (Table 7)	131	134
f. Total	3,192	3,246

\* Valued as Deferred Retirements.

\*\* Revised from prior report.



## Minneapolis Teachers' Retirement Fund

### **Commentary**

#### ***Purpose***

The purpose of this valuation is to determine the financial status of the Plan. To achieve this purpose, an actuarial valuation is made at the beginning of each fiscal year as required by Section 356.215 of Minnesota Statutes.

#### ***Report Highlights***

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

The *Accrued Benefit Funding Ratio* is a measure of current funding status and, when viewed over a period of years, presents a view of the funding progress. It is based upon benefits which have been earned by service to the valuation date. This year's ratio is 57.60%. The corresponding ratio for the prior year was 54.48%.

The *Accrued Liability Funding Ratio* is also a measure of funding status and funding progress. It is based on the actuarial cost method that has historically been used by the State. For 1992 the ratio is 54.47%, which is an increase from the 1991 value of 51.38%.

The *Projected Benefit Funding Ratio* is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 66.25% shows that the current statutory contributions are insufficient.

#### ***Asset Information (Tables 1 and 2)***

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

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

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

#### ***Actuarial Balance Sheet (Table 8)***

An actuarial balance sheet provides a method for evaluating current and future levels of funding. The Current Benefit Obligation used to measure current funding level is calculated in accordance with Statement No. 5 of the Governmental Accounting Standards Board (GASB). Those requirements are:

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

For Non-active Members - the discounted value of benefits, including augmentation in cases where benefits have not commenced.

#### ***GASB Disclosure***

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

The July 1, 1992 Pension Benefit Obligation reported in Table 8 is reformatted for GASB reporting purposes in the following table:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	\$ 433,790,000
Current Employees	
Accumulated employee contributions including allocated investment income	\$ 112,492,000*
Employer-financed vested	223,065,000
Employer-financed non-vested	25,733,000
Total Pension Benefit Obligation	\$ 795,080,000
Net Assets Available for Benefits at Cost	\$ 441,289,000
Total Benefit Obligation less Assets	\$ 353,791,000
Funded Ratio	55.50%

\*Estimated

#### ***Actuarial Cost Method (Table 9)***

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

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

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

The payments will increase 6.5% each year because that is the assumed rate of increase in payroll. Although the payment schedule will be adequate to amortize the existing unfunded, the lower payments in the earlier years will not be sufficient to cover the interest on the unfunded liability. After a few years, the annual payment will cover the interest and also repay a portion of the unfunded.

#### ***Sources of Actuarial Gains and Losses (Table 10)***

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

In prior valuations of the Fund, no liability was recognized for Members on leave of absence. However, we feel that at a minimum, liability for return of Member contributions, or if greater, the value of the Member's deferred vested benefit should be reflected in the valuation of the Fund. Recognition of these benefits results in an additional liability of \$2,198,000 for Deferred Retirements.

#### ***Contribution Sufficiency (Table 11)***

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

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

Normal Costs based on the Entry Age Normal Actuarial Cost Method.

A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.

An Allowance for Expenses.

Table 11 shows the Fund has a contribution deficiency since the Statutory Contribution Rate is 15.86% compared to the Required Contribution Rate of 27.43%.

#### ***Changes in Actuarial Assumptions***

Effective July 1, 1992, the post-retirement interest rate used to determine plan costs was changed from 8.00% to 8.50% per annum. Prior to 1992, an 8.00% post-retirement interest rate assumption was used to account for discretionary post-retirement adjustments which could be given by the Board if the time weighted rate of return on Fund assets over the prior 3 years exceeded 8.00%. However, effective July 1, 1989, paragraph 30.4 of the Articles of Incorporation of the Minneapolis Teachers' Retirement Fund Association states that such discretionary increases will only be granted if the time weighted rate of return on Fund assets over the prior 3 years exceeds the greater of (1) 8.00%, or (2) the post-retirement interest rate assumption specified in Minnesota Statutes Section 356.215 Subdivision 4d (currently 8.50% per annum). Since discretionary increases are only granted to the extent the rate of return on Fund assets exceeds 8.50% per annum, we feel that the most appropriate post-retirement interest rate assumption for the Fund is 8.50% per annum. This change in the post-retirement interest rate assumption results in a decrease of \$40,860,000 in the Plan's unfunded actuarial accrued liability; and a decrease of \$36,950,000 in the Plan's unfunded current benefit obligation.

Paragraph X.I.4 of the Actuarial Standards requires that the Actuarial Present Value of Future Compensation for purposes of determining the Normal Cost of the Fund be calculated assuming mid-year payments. Previously, beginning of year payments were assumed. This change in methodology results in an increase of 0.76% of payroll in the Normal Cost and Contribution Deficiency of the Fund.

All other actuarial assumptions and methods described in Table 12 are the same as those used in the prior actuarial valuation of the Fund.

***Changes in Plan Provisions***

Effective July 1, 1993, the employer contribution rate for coordinated members is 5.50% of salary (currently 4.5% of salary). Table 8, Item B.1 has been calculated taking into account the increase in employer contribution rate for coordinated members. However, in accordance with the Standards for Actuarial Work adopted July 8, 1992, all items contained in Tables 11, 11A and 11B reflect statutory contribution rates in effect on July 1, 1992. Had the new employer contribution rates been in effect on July 1, 1992, Statutory Contributions would have been 16.33% of payroll resulting in a deficiency of 11.10% of payroll.

Effective July 1, 1994, additional employer contributions will continue to be made for all Basic Members terminating service during the prior plan year. This legislation is an attempt to mitigate the effect of a shift from Basic to Coordinated payroll which was causing recurring decreases in the Fund's funded status. Since the methodology already used to determine the Present Value of Expected Future Statutory Supplemental Contributions already assumes no shift in payroll from Basic to Coordinated, no change in this calculation is required as a result of this legislation.

All other plan provisions listed in Tables 13A and 13B are the same as those reflected in the prior actuarial valuation of the Fund.

***Reconciliation of Funding Ratios and Contribution Sufficiency (Deficiency)***

The following table presents a reconciliation of the Funding Ratios and Contribution Sufficiency (Deficiency) presented in this report to those presented in the prior report. This table summarizes the effects of the various accounting changes, new benefits recognized, actuarial method changes and plan changes described throughout the Commentary Section of this report.

*Reconciliation of Funding Ratios and Contribution Sufficiency (Deficiency)*

	Contribution Sufficiency (Deficiency)	Accrued Benefit Funding Ratio	Accrued Liability Funding Ratio	Projected Benefit Funding Ratio
Value on July 1, 1991	(13.59)%	54.48%	51.38%	62.30%
Fund Experience During 1991-92	0.94%	0.71%	0.69%	0.95%
Benefits Newly Recognized				
Members on Leave of Absence	(0.07)%	(0.15)%	(0.13)%	(0.13)%
Change in Actuarial Assumptions and Methods				
Calculation of Present Value of Future Compensation	(0.76)%	0.00%	0.00%	(2.21)%
Change to 8.50% Post-Retirement Interest Rate	1.91%	2.56%	2.53%	3.98%
Plan Changes				
Increase in Coordinated Plan Contribution Rate effective July 1, 1993	0.00%	0.00%	0.00%	1.36%
Additional Employer Contributions for Terminating Basic Members effective July 1, 1994	*	0.00%	0.00%	*
Value on July 1, 1992	<u>(11.57)%</u>	<u>57.60%</u>	<u>54.47%</u>	<u>66.25%</u>

\* This statutory change would have had a positive effect on these items except that prior valuation procedures did not reflect the expected future erosion in the combined statutory contribution rate which was bound to occur as the percentage of Basic Members decreased.

**Minneapolis Teachers' Retirement Fund**  
**Accounting Balance Sheet**  
*(dollars in thousands)*

July 1, 1992

	Market Value	Cost Value
<b>A. ASSETS</b>		
1. Cash, Equivalents, Short-Term Securities	\$ 55,847	\$ 55,847
2. Investments		
a. Fixed Income	147,131	145,660
b. Equity	228,243	179,462
c. Real Estate	54,651	54,651
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	0	0
4. Other	14,758	14,599
<b>B. TOTAL ASSETS</b>	<u>\$ 500,630</u>	<u>\$ 450,219</u>
<b>C. AMOUNTS CURRENTLY PAYABLE</b>	<u>\$ 8,930</u>	<u>\$ 8,930</u>
<b>D. ASSETS AVAILABLE FOR BENEFITS</b>		
1. Member Reserves	\$ 252,999	\$ 252,999
2. Employer Reserves	164,731	114,663
3. MPRIF Reserves	0	0
4. Non-MPRIF Reserves	73,627	73,627
5. Total Assets Available for Benefits	<u>\$ 491,357</u>	<u>\$ 441,289</u>
<b>E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS</b>	<u>\$ 500,287</u>	<u>\$ 450,219</u>
<b>F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS</b>		
1. Cost Value of Assets Available for Benefits (D5)		\$ 441,289
2. Market Value (D5)	\$ 491,357	
3. Cost Value (D5)	441,289	
4. Market Over Cost: (F2-F3)	<u>\$ 50,068</u>	
5. 1/3 of Market Over Cost: (F4)/3		16,689
6. Actuarial Value of Assets (F1+F5)		<u>\$ 457,978</u>

TABLE 2

**Minneapolis Teachers' Retirement Fund**  
**Change In Assets Available For Benefits**  
*(dollars in thousands)*

Year Ending June 30, 1992

	<u>Market Value</u>	<u>Cost Value</u>
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$ 452,408	\$ 410,811
B. OPERATING REVENUES		
1. Member Contributions	\$ 10,307	\$ 10,307
2. Employer Contributions	13,638	13,638
3. Investment Income	21,532	21,532
4. MPRIF Income	0	0
5. Net Realized Gain (Loss)	28,446	28,446
6. Other	0	0
7. Net Change in Unrealized Gain (Loss)	8,471	0
8. Total Revenue	<u>\$ 82,394</u>	<u>\$ 73,923</u>
C. OPERATING EXPENSES		
1. Service Retirements	\$ 36,730	\$ 36,730
2. Disability Benefits	549	549
3. Survivor Benefits	2,205	2,205
4. Refunds	1,000	1,000
5. Administrative Expenses	885	885
6. Investment Expenses	2,076	2,076
7. Total Disbursements	<u>\$ 43,445</u>	<u>\$ 43,445</u>
D. OTHER CHANGES IN RESERVES	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	<u>\$ 491,357</u>	<u>\$ 441,289</u>

TABLE 3

**Minneapolis Teachers' Retirement Fund**  
**Active Members as of June 30, 1992**

<u>AGE</u>	<u>YEARS OF SERVICE</u>								<u>TOTAL</u>
	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	59	2	-	-	-	-	-	-	61
25-29	157	82	21	-	-	-	-	-	260
30-34	162	144	139	8	-	-	-	-	453
35-39	101	122	133	38	11	-	-	-	405
40-44	80	162	128	83	84	72	-	-	609
45-49	53	98	116	72	88	288	84	-	799
50-54	23	63	72	57	43	122	165	23	568
55-59	11	34	28	16	34	81	71	43	318
60-64	2	15	5	15	15	31	26	23	132
65+	1	6	2	3	3	5	4	6	30
ALL	649	728	644	292	278	599	350	95	3,635

**AVERAGE ANNUAL EARNINGS**

<u>AGE</u>	<u>YEARS OF SERVICE</u>								<u>ALL</u>
	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	14,407	23,933	-	-	-	-	-	-	14,719
25-29	17,690	26,333	28,685	-	-	-	-	-	21,304
30-34	20,699	29,631	31,984	34,978	-	-	-	-	27,253
35-39	20,744	32,492	36,907	39,741	42,613	-	-	-	31,967
40-44	21,692	33,129	40,900	42,588	45,804	48,412	-	-	38,104
45-49	22,291	33,700	41,398	45,832	46,122	48,205	49,797	-	43,443
50-54	25,349	33,553	41,390	45,122	47,556	48,800	50,868	51,635	45,472
55-59	17,376	35,722	41,273	44,220	43,726	47,007	50,656	50,902	45,121
60-64	23,912	30,524	43,495	40,952	41,121	50,303	49,347	48,027	44,707
65+	4,935	19,712	24,694	34,468	37,971	49,275	48,372	52,797	38,219
ALL	19,753	31,610	37,883	43,226	45,458	48,306	50,427	50,503	37,653

**PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE**

<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>TOTAL</u>
12,819	23,012	24,397	12,622	12,637	28,936	17,649	4,798	136,870



TABLE 4

Minneapolis Teachers' Retirement Fund  
*Service Retirements as of June 30, 1992*

<u>AGE</u>	<u>YEARS RETIRED</u>							<u>TOTAL</u>
	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	1	-	-	-	-	-	-	1
50-54	11	29	-	-	-	-	-	40
55-59	28	97	22	-	-	-	-	147
60-64	43	205	106	31	-	-	-	385
65-69	9	119	184	107	13	2	-	434
70-74	1	24	108	196	37	2	-	368
75-79	-	2	26	138	122	11	3	302
80-84	-	-	-	3	162	79	16	260
85+	-	-	-	-	53	170	196	419
ALL	93	476	446	475	387	264	215	2,356

AVERAGE ANNUAL BENEFIT  
YEARS RETIRED

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
<50	10,581	-	-	-	-	-	-	10,581
50-54	27,400	12,195	-	-	-	-	-	16,377
55-59	30,550	24,887	9,718	-	-	-	-	23,696
60-64	22,787	22,474	22,099	14,328	-	-	-	21,750
65-69	23,547	20,310	17,819	21,830	6,105	7,414	-	19,211
70-74	35,248	20,232	17,252	17,025	12,455	13,987	-	16,874
75-79	-	10,121	19,598	14,199	13,408	9,968	5,060	14,072
80-84	-	-	-	7,500	10,843	10,286	11,126	10,653
85+	-	-	-	-	13,541	11,829	10,116	11,245
ALL	25,747	21,634	18,403	17,050	12,016	11,273	10,121	16,469

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS RETIRED

<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
2,394	10,298	8,208	8,099	4,650	2,976	2,176	38,801

TABLE 5

**Minneapolis Teachers' Retirement Fund**  
***Survivors as of June 30, 1992***

**YEARS SINCE MEMBER'S RETIREMENT\***

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
<50	-	6	8	20	5	-	-	39
50-54	-	1	1	-	-	-	-	2
55-59	-	4	3	3	1	-	-	11
60-64	-	3	10	14	2	-	-	29
65-69	-	2	8	16	-	2	-	28
70-74	-	1	6	10	2	-	-	19
75-79	-	-	1	8	10	2	2	23
80-84	-	-	-	-	9	9	4	22
85+	-	-	1	-	-	8	14	23
ALL	0	17	38	71	29	21	20	196

**AVERAGE ANNUAL BENEFIT**

**YEARS SINCE MEMBER'S RETIREMENT**

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
<50	-	10,690	3,770	6,181	4,308	-	-	6,140
50-54	-	50,372	9,222	-	-	-	-	29,797
55-59	-	23,603	13,557	12,578	10,158	-	-	16,634
60-64	-	4,390	20,578	16,421	8,807	-	-	16,085
65-69	-	11,630	17,345	14,769	-	6,531	-	14,692
70-74	-	20,414	11,898	14,355	14,175	-	-	13,879
75-79	-	-	13,687	7,555	10,955	8,551	7,591	9,389
80-84	-	-	-	-	10,829	14,323	8,208	11,782
85+	-	-	6,416	-	-	10,439	11,071	10,649
ALL	0	15,634	13,581	11,712	9,816	11,551	10,151	11,957

**TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS SINCE MEMBER'S  
RETIREMENT**

<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
0	266	516	831	285	243	203	2,344

\* Due to insufficient data, this table is based upon the Member's date of retirement rather than the Member's date of death.

TABLE 6

Minneapolis Teachers' Retirement Fund  
*Disability Retirements as of June 30, 1992*

YEARS DISABLED

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
<50	-	1	2	-	-	-	-	3
50-54	-	1	-	-	-	-	-	1
55-59	-	2	3	-	1	-	-	6
60-64	-	2	-	1	-	1	-	4
65-69	-	-	1	4	1	-	-	6
70-74	-	-	-	1	6	3	-	10
75-79	-	-	-	-	5	-	4	9
80-84	-	-	-	-	1	2	1	4
85+	-	-	-	-	-	-	1	1
ALL	0	6	6	6	14	6	6	44

AVERAGE ANNUAL BENEFIT

YEARS DISABLED

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
<50	-	28,869	16,599	-	-	-	-	20,689
50-54	-	18,697	-	-	-	-	-	18,697
55-59	-	8,925	22,028	-	8,429	-	-	15,394
60-64	-	18,442	-	19,590	-	8,981	-	16,364
64-69	-	-	16,142	18,750	14,406	-	-	17,592
70-74	-	-	-	10,486	11,849	12,422	-	11,885
75-79	-	-	-	-	9,230	-	8,544	8,925
80-84	-	-	-	-	9,160	10,774	4,943	8,913
85+	-	-	-	-	-	-	4,236	4,236
ALL	0	17,050	19,237	17,513	10,660	11,300	7,226	13,254

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS DISABLED

<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
0	102	115	105	149	68	43	583

TABLE 7

Minneapolis Teachers' Retirement Fund  
**Reconciliation of Members**

	Actives*	Terminated	
		Deferred Retirement	Other Non-Vested
A. ON JUNE 30, 1991	3,424	492	131
B. ADDITIONS	468	66	33
C. DELETIONS			
1. Service Retirement	(80)	(5)	-
2. Disability	-	-	-
3. Death - Survivor	-	-	-
4. Death - Other	-	-	-
5. Terminated - Deferred	(66)	-	-
6. Terminated - Refund	(42)	(4)	(30)
7. Terminated - Other Non-Vested	(33)	-	-
8. Returned as Active	7	(7)	-
D. DATA ADJUSTMENTS	66	(26)	-
1. Vested	2,737		
2. Non-Vested	1,007		
E. TOTAL ON June 30, 1992	3,744	516	134

	Retirement Annuitants	Recipients	
		Disabled	Survivors
A. ON JUNE 30, 1991	2,337	39	193
B. ADDITIONS	85	-	16
C. DELETIONS			
1. Service Retirement	-	-	-
2. Death	(90)	-	(7)
3. Annuity Expired	-	-	(6)
4. Returned as Active	-	-	-
D. DATA ADJUSTMENTS	24	5	-
E. TOTAL ON June 30, 1992	2,356	44	196

\* Includes members on leave of absence.

TABLE 8

**Minneapolis Teachers' Retirement Fund**  
**Actuarial Balance Sheet**  
*(dollars in thousands)*

July 1, 1992

A.	CURRENT ASSETS (TABLE 1, F6)			\$ 457,978
B.	EXPECTED FUTURE ASSETS			
1.	Present Value of Expected Future Statutory Supplemental Contributions			41,139*
2.	Present Value of Future Normal Costs			171,669
3.	Total Expected Future Assets			212,808
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			\$ 670,786
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
1.	Benefit Recipients			
a.	Retirement Annuities	\$	\$ 392,775	\$ 392,775
b.	Disability Benefits		6,356	6,356
c.	Surviving Spouse and Child Benefits		15,859	15,859
2.	Deferred Retirements With Future Augmentation		18,543	18,543
3.	Former Members Without Vested Rights		257	257
4.	Active Members			
a.	Retirement Annuities	1,574	317,559	319,133
b.	Disability Benefits	17,109	0	17,109
c.	Survivors' Benefits	6,947	0	6,947
d.	Deferred Retirements	103	16,395	16,498
e.	Refund Liability Due to Death or Withdrawal	0	1,603	1,603
5.	Total Current Benefit Obligations	\$ 25,733	\$ 769,347	\$ 795,080
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			\$ 217,429
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			\$ 1,012,509
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY: (D5-A)			\$ 337,102
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY: (F-C)			\$ 341,723

\* See "Changes in Plan Provisions" in the Commentary Section of this report.

TABLE 9

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

July 1, 1992			
	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
	(1)	(2)	(3)
<b>A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)</b>			
1. Active Members			
a. Retirement Annuities	\$ 511,781	\$ 133,354	\$ 378,427
b. Disability Benefits	28,915	13,323	15,592
c. Survivors' Benefits	10,686	3,796	6,890
d. Deferred Retirements	23,786	15,321	8,465
e. Refunds Due to Death or Withdrawal	3,551	5,875	(2,324)
f. Total	<u>\$ 578,719</u>	<u>\$ 171,669</u>	<u>\$ 407,050</u>
2. Deferred Retirements With Future Augmentation	18,543		18,543
3. Former Members Without Vested Rights	257		257
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	414,990		414,990
6. Total	<u><u>\$ 1,012,509</u></u>	<u><u>\$ 171,669</u></u>	<u><u>\$ 840,840</u></u>
<b>B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)</b>			
1. AAL: (A6)			\$ 840,840
2. Current Assets (Table 1, F6)			457,978
3. UAAL: (B1-B2)			<u><u>\$ 382,862</u></u>
<b>C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE</b>			
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020			\$ 3,071,759
2. Supplemental Contribution Rate: (B3/C1)			12.46%

**Minneapolis Teachers' Retirement Fund**  
**Changes in Unfunded Actuarial Accrued Liability (UAAL)**  
*(dollars in thousands)*

Year Ending June 30, 1992

A.	UAAL AT BEGINNING OF YEAR	\$ 401,897
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1.	Normal Cost and Expenses	\$ 20,179
2.	Contribution	(23,945)
3.	Interest on A, B1 and B2	34,859
4.	Total: (B1+B2+B3)	\$ 31,093
C.	EXPECTED UAAL AT END OF YEAR: (A+B4)	\$ 432,990
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1.	Salary Increases	\$ (1,013)
2.	Investment Return	(17,542)
3.	MPRIF Mortality	0
4.	Mortality of Other Benefit Recipients	(13,959)
5.	Other Items	23,246
6.	Total	\$ (9,268)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS: (C+D5)	\$ 423,722
F.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	0
G.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	(40,860)*
H.	UAAL AT END OF YEAR: (E+F+G)	\$ 382,862

\* See "Changes in Actuarial Assumptions" in Commentary Section of this report.

**Minneapolis Teachers' Retirement Fund**  
**Determination of Contribution Sufficiency**  
*(dollars in thousands)*

July 1, 1992

	Percent of Payroll	Dollar Amount
<b>A. STATUTORY CONTRIBUTIONS - CHAPTER 354A</b>		
1. Employee Contributions	6.64%	\$ 9.671
2. Employer Contributions	9.22%	13.443*
3. Total	<u>15.86%</u>	<u>\$ 23.114</u>
<b>B. REQUIRED CONTRIBUTIONS - CHAPTER 356</b>		
1. Normal Cost**		
a. Retirement Benefits	10.05%	\$ 14.646
b. Disability Benefits	0.96%	1.396
c. Survivors' Benefits	0.30%	433
d. Deferred Retirement Benefits	1.10%	1,611
e. Refunds Due to Death or Withdrawal	0.40%	583
f. Total	<u>12.81%</u>	<u>\$ 18.669</u>
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	12.46%	\$ 18.163
3. Allowance for Expenses	2.16%	\$ 3.153
4. Total	<u>27.43%</u>	<u>\$ 39.985</u>
<b>C. CONTRIBUTION SUFFICIENCY (DEFICIENCY): (A3-B4)</b>	<u>(11.57)%</u>	<u>\$ (16.871)</u>

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1992 is \$145,767.

\* See "Changes in Plan Provisions" in Commentary Section of this report.

\*\* See "Changes in Actuarial Assumptions" in Commentary Section of this report.



**Minneapolis Teachers' Retirement Fund**  
**Summary of Actuarial Assumptions and Methods**

<i>Interest:</i>	Pre-Retirement:	8.50% per annum
	Post-Retirement:	8.50% per annum
<i>Salary Increases:</i>	Total reported pay for prior fiscal year increased 6.50% to current fiscal year and 6.50% annually for each future year.	
<i>Mortality:</i>	Pre-Retirement:	
	Male -	1971 Group Annuity Mortality Table male rates set back 8 years.
	Female -	1971 Group Annuity Mortality Table male rates set back 8 years.
	Post-Retirement:	
	Male -	same as above.
	Female -	same as above.
	Post Disability:	
	Male -	same as above.
	Female -	same as above.
<i>Retirement Age:</i>	Basic Members are assumed to retire at age 60. Coordinated Members are assumed to retire at age 63. If over the assumed retirement age, one year from valuation date. In addition, 30% of Coordinated Members are assumed to retire each year that they are eligible for the Rule of 90.	
<i>Separation:</i>	Graded rates shown in the rate table.	
<i>Disability:</i>	Graded rates shown in the rate table.	
<i>Administrative and Investment Expenses:</i>	Prior year expenses expressed as a percentage of prior year payroll.	
<i>Return of Contributions:</i>	All employees withdrawing after becoming eligible for a deferred benefit were assumed to take the larger of their contributions accumulated with interest or the value of their deferred benefit.	
<i>Family Composition:</i>	80% of male Members and 60% of female Members are assumed to be married. Female is three years younger than male.	
<i>Social Security:</i>	N/A	
<i>Benefit Increases After Retirement:</i>	2.0% per annum	

TABLE 12  
(cont)

*Special Consideration:*

Discretionary post retirement benefit increase is accounted for by increasing the reserve value for all service retirements, disability retirements and survivors eligible for the increase by an amount that equals the excess of the three year time weighted total rate of return over the assumed interest rate of 8.50%.

Married Coordinated Members are assumed to elect subsidized joint and survivor forms 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:*

A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 6.50% per annum.

TABLE 12

(cont)

Minneapolis Teachers' Retirement Fund  
**Summary of Actuarial Assumptions and Methods**

*Separations Expressed as the Number of Occurrences per 10,000:*

<u>Age</u>	<u>Death</u>		<u>Withdrawal</u>		<u>Disability</u>		<u>Retirement</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
20	4	4	1,200	1,200	3	4	0	0
21	4	4	1,150	1,150	3	4	0	0
22	4	4	1,100	1,100	3	4	0	0
23	4	4	1,050	1,050	3	5	0	0
24	4	4	1,000	1,000	3	5	0	0
25	5	5	950	950	3	5	0	0
26	5	5	900	900	4	5	0	0
27	5	5	850	850	4	5	0	0
28	5	5	800	800	4	6	0	0
29	5	5	750	750	4	6	0	0
30	5	5	700	700	4	6	0	0
31	6	6	650	650	4	6	0	0
32	6	6	600	600	4	7	0	0
33	6	6	550	550	5	7	0	0
34	7	7	500	500	5	8	0	0
35	7	7	450	450	5	8	0	0
36	7	7	400	400	6	8	0	0
37	8	8	350	350	6	9	0	0
38	8	8	300	300	6	9	0	0
39	9	9	250	250	6	10	0	0
40	9	9	200	200	7	10	0	0
41	10	10	190	190	7	11	0	0
42	10	10	180	180	8	12	0	0
43	11	11	170	170	8	13	0	0
44	12	12	160	160	9	14	0	0
45	13	13	150	150	10	15	0	0
46	14	14	140	140	11	16	0	0
47	15	15	130	130	12	18	0	0
48	16	16	120	120	14	20	0	0
49	18	18	110	110	16	23	0	0
50	20	20	100	100	18	26	0	0
51	23	23	90	90	20	29	0	0
52	26	26	80	80	23	33	0	0
53	29	29	70	70	26	37	0	0
54	33	33	60	60	30	42	0	0

TABLE 12  
(cont)

Minneapolis Teachers' Retirement Fund  
**Summary of Actuarial Assumptions and Methods**

*Separations Expressed as the Number of Occurrences per 10,000:*

<u>Age</u>	<u>Death</u>		<u>Withdrawal</u>		<u>Disability</u>		<u>Retirement</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
55	38	38	50	50	36	49	0	0
56	42	42	40	40	42	58	0	0
57	47	47	30	30	50	68	0	0
58	53	53	20	20	59	80	0	0
59	59	59	10	10	69	94	0	0
60	65	65	0	0	90	121	0	0
61	71	71	0	0	116	154	0	0
62	78	78	0	0	146	193	0	0
63	85	85	0	0	0	0	10,000	10,000
64	93	93	0	0	0	0	0	0
65	100	100	0	0	0	0	0	0
66	109	109	0	0	0	0	0	0
67	119	119	0	0	0	0	0	0
68	131	131	0	0	0	0	0	0
69	144	144	0	0	0	0	0	0
70	159	159	0	0	0	0	0	0

TABLE 3A

BASIC

**Minneapolis Teachers' Retirement Fund**  
**Active Members as of June 30, 1992**

<u>AGE</u>	<u>YEARS OF SERVICE</u>								<u>TOTAL</u>
	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	-	-	-	-	-	-	-	-	0
25-29	-	-	-	-	-	-	-	-	0
30-34	-	-	-	-	-	-	-	-	0
35-39	2	2	2	5	11	-	-	-	22
40-44	1	6	16	33	83	72	-	-	211
45-49	1	7	22	45	87	288	84	-	534
50-54	2	11	12	26	43	120	165	23	402
55-59	1	11	5	10	34	81	71	43	256
60-64	-	2	1	8	15	31	26	23	106
65+	1	-	1	1	3	5	4	6	21
ALL	8	39	59	128	276	597	350	95	1,552

**AVERAGE ANNUAL EARNINGS**

<u>AGE</u>	<u>YEARS OF SERVICE</u>								<u>ALL</u>
	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	-	-	-	-	-	-	-	-	0
25-29	-	-	-	-	-	-	-	-	0
30-34	-	-	-	-	-	-	-	-	0
35-39	28,116	25,833	38,882	40,815	42,613	-	-	-	39,022
40-44	30,997	33,859	37,625	41,116	45,935	48,412	-	-	44,959
45-49	11,725	35,636	40,542	44,819	45,922	48,205	49,797	-	47,249
50-54	30,235	30,561	43,506	43,808	47,556	48,810	50,868	51,635	48,608
55-59	4,555	34,294	37,743	43,687	43,726	47,007	50,656	50,902	47,215
60-64	-	1,517	33,808	38,613	41,121	50,303	49,347	48,027	46,317
65+	4,935	-	1,781	35,360	37,971	49,275	48,372	52,797	43,459
ALL	21,114	31,300	39,208	42,952	45,431	48,307	50,427	50,503	47,053

**PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE**

<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>TOTAL</u>
169	1,221	2,313	5,498	12,539	28,839	17,649	4,798	73,026

TABLE 4A

BASIC

**Minneapolis Teachers' Retirement Fund**  
***Service Retirements as of June 30, 1992***

<u>AGE</u>	<u>YEARS RETIRED</u>							<u>TOTAL</u>
	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	1	-	-	-	-	-	-	1
50-54	11	29	-	-	-	-	-	40
55-59	28	96	22	-	-	-	-	146
60-64	41	201	106	31	-	-	-	379
65-69	8	117	184	107	13	2	-	431
70-74	1	24	108	196	37	2	-	368
75-79	-	2	26	138	122	11	3	302
80-84	-	-	-	3	162	79	16	260
85+	-	-	-	-	53	170	196	419
ALL	90	469	446	475	387	264	215	2,346

**AVERAGE ANNUAL BENEFIT**

<u>AGE</u>	<u>YEARS RETIRED</u>							<u>ALL</u>
	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	10,581	-	-	-	-	-	-	10,581
50-54	27,400	12,195	-	-	-	-	-	16,377
55-59	30,550	25,116	9,718	-	-	-	-	23,838
60-64	23,809	22,891	22,099	14,328	-	-	-	22,068
65-69	25,414	20,593	17,819	21,830	6,105	7,414	-	19,307
70-74	35,248	20,232	17,252	17,025	12,455	13,987	-	16,874
75-79	-	10,121	19,598	14,199	13,408	9,968	5,060	14,072
80-84	-	-	-	7,500	10,843	10,286	11,126	10,653
85+	-	-	-	-	13,541	11,829	10,116	11,245
ALL	26,468	21,921	18,403	17,050	12,016	11,273	10,121	16,527

**TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS RETIRED**

<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
2,382	10,281	8,208	8,099	4,650	2,976	2,176	38,772

TABLE 5A

BASIC

**Minneapolis Teachers' Retirement Fund**  
***Survivors as of June 30, 1992***

**YEARS SINCE MEMBER'S RETIREMENT\***

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
<50	-	6	8	20	5	-	-	39
50-54	-	1	1	-	-	-	-	2
55-59	-	4	3	3	1	-	-	11
60-64	-	3	10	14	2	-	-	29
65-69	-	2	8	16	-	2	-	28
70-74	-	1	6	10	2	-	-	19
75-79	-	-	1	8	10	2	2	23
80-84	-	-	-	-	9	9	4	22
85+	-	-	1	-	-	8	14	23
ALL	0	17	38	71	29	21	20	196

**AVERAGE ANNUAL BENEFIT**

**YEARS SINCE MEMBER'S RETIREMENT**

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
<50	-	10,690	3,770	6,181	4,308	-	-	6,140
50-54	-	50,372	9,222	-	-	-	-	29,797
55-59	-	23,603	13,557	12,578	10,158	-	-	16,634
60-64	-	4,390	20,578	16,421	8,807	-	-	16,085
65-69	-	11,630	17,345	14,769	-	6,531	-	14,692
70-74	-	20,414	11,898	14,355	14,175	-	-	13,879
75-79	-	-	13,687	7,555	10,955	8,551	7,591	9,389
80-84	-	-	-	-	10,829	14,323	8,208	11,782
85+	-	-	6,416	-	-	10,439	11,071	10,649
ALL	0	15,634	13,581	11,712	9,816	11,551	10,151	11,957

**TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS SINCE MEMBER'S  
RETIREMENT**

<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
0	266	516	831	285	243	203	2,344

\* Due to insufficient data, this table is based upon the Member's date of retirement rather than the Member's date of death.

TABLE 6A

BASIC

Minneapolis Teachers' Retirement Fund  
*Disability Retirements as of June 30, 1992*

## YEARS DISABLED

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
<50	-	1	2	-	-	-	-	3
50-54	-	1	-	-	-	-	-	1
55-59	-	2	3	-	1	-	-	6
60-64	-	2	-	1	-	1	-	4
65-69	-	-	1	4	1	-	-	6
70-74	-	-	-	1	6	3	-	10
75-79	-	-	-	-	5	-	4	9
80-84	-	-	-	-	1	2	1	4
85+	-	-	-	-	-	-	1	1
ALL	0	6	6	6	14	6	6	44

## AVERAGE ANNUAL BENEFIT

## YEARS DISABLED

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
<50	-	28,869	16,599	-	-	-	-	20,689
50-54	-	18,697	-	-	-	-	-	18,697
55-59	-	8,925	22,028	-	8,429	-	-	15,394
60-64	-	18,442	-	19,590	-	8,981	-	16,364
64-69	-	-	16,142	18,750	14,406	-	-	17,592
70-74	-	-	-	10,486	11,849	12,422	-	11,885
75-79	-	-	-	-	9,230	-	8,544	8,925
80-84	-	-	-	-	9,160	10,774	4,943	8,913
85+	-	-	-	-	-	-	4,236	4,236
ALL	0	17,050	19,237	17,513	10,660	11,300	7,226	13,254

## TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS DISABLED

<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
0	102	115	105	149	68	43	583



Minneapolis Teachers' Retirement Fund  
**Determination of Contribution Sufficiency**  
*(dollars in thousands)*

July 1, 1992

	Percent of Payroll	Dollar Amount
<b>A. STATUTORY CONTRIBUTIONS - CHAPTER 354A</b>		
1. Employee Contributions	8.50%	\$ 6,611
2. Employer Contributions	13.35%	10,383
3. Total	<u>21.85%</u>	<u>\$ 16,994</u>
<b>B. REQUIRED CONTRIBUTIONS - CHAPTER 356</b>		
1. Normal Cost**		
a. Retirement Benefits	12.38%	\$ 9,625
b. Disability Benefits	1.11%	862
c. Survivors' Benefits	0.40%	311
d. Deferred Retirement Benefits	1.63%	1,272
e. Refunds Due to Death or Withdrawal	0.53%	413
f. Total	<u>16.05%</u>	<u>\$ 12,483</u>

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1992 is \$77,773.

\*\* See "Changes in Actuarial Assumptions" in Commentary Section of this report.

**Minneapolis Teachers' Retirement Fund**  
***Summary of Plan Provisions***

**GENERAL**

<i>Eligibility:</i>	A teacher who is employed by the Board of Education of Special School District No. 1 and who is not covered by the Social Security Act. Certain part-time licensed employees are covered as well as employees of the Minneapolis Teachers' Retirement Fund (unless they belong to the Minneapolis Employees Retirement Fund).
<i>Contributions:</i>	Member: 8.50% of Salary. Employer: 6.50% of Salary to the Retirement Deposit Fund (city contributions). 6.85% of Salary to the Contingent Fund.
<i>Teaching Service:</i>	A year is earned during a calendar year if the Member is employed in a covered position and employee contributions are deducted. Certain part-time service and military service is also included.
<i>Salary:</i>	Total compensation. Excludes lump sum payments for unused vacation leave or unused sick leave at separation.
<i>Average Salary:</i>	Average of the 5 highest consecutive years of salary.

**RETIREMENT*****Normal Retirement Benefit:***

<i>Eligibility:</i>	Age 60. Any age with 30 years of Teaching Service.
<i>Amount:</i>	2.50% of Average Salary for each year of Teaching Service.

***Early Retirement Benefit:***

<i>Eligibility:</i>	Age 55 with less than 30 years of Teaching Service.
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TABLE 13A  
(cont)  
BASIC

*Amount:*

The greater of:

2.25% of Average Salary for each year of Teaching Service with reduction of 0.25% for each month the Member is under age first eligible for a normal retirement benefit.

or

2.50% of Average Salary for each year of Teaching Service assuming augmentation to the age first eligible for a normal retirement benefit at 3.00% per year and actuarial reduction for each month the Member is under the age first eligible for a normal retirement benefit.

An alternative benefit is available to Members who are at least age 50 and have 7 years of Teaching Service. The benefit is based on the accumulation of the 6.5% "city deposits" to the Retirement Fund. Other benefits are also provided under this alternative depending on the Member's age and Teaching Service.

*Form of Payment:*

Life annuity.

Actuarially equivalent options are:

3 or 15 year certain and life  
50%, 75% or 100% joint and survivor with bounce back feature without additional reduction (option is canceled Member is pre-deceased by beneficiary).

*Benefit Increases:*

Benefits are increased 2.0% annually beginning on the January 1 or July 1 if the Member has been receiving benefits for at least 12 months. Beneficiaries are entitled to the same increase the Member would have received.

In addition, if the time weighted rate of return over the last 3 years exceeds 8%, the Board of Trustees may increase benefits on January 1 by all or a portion of the excess.

Members retired under laws in effect before May 1, 1974 and before any adjustment under Laws 1987, Chapter 372, receive an additional lump sum payment each year. In 1989, this lump sum payment is the greater of \$25 times each full year of Teaching Service and the sum of the benefits paid from any Minnesota public pension plan plus cash payments from the Social Security Administration for the preceding fiscal year July 1, 1988 through June 30, 1989. In each following year

the lump sum will increase by the same increase that is applied to regular annuities.

## **DISABILITY**

### **Disability Benefit:**

#### *Eligibility:*

Total and permanent disability with 3 years of Teaching Service.

#### *Amount:*

An annuity based on the continued accumulation of Member and city contributions at the current rate for a period of 15 years (but not beyond age 65) plus an additional benefit equal to the smaller of 100% of the annuity provided by city contributions only or \$150 per month. A Member with 20 years of Teaching Service also receives an additional \$7.50 per month.

Payments stop if disability ceases or death occurs. Benefits may be reduced on resumption of partial employment.

#### *Form of Payment:*

Same as for retirement.

#### *Benefit Increases:*

Same as for retirement.

## **DEATH**

A choice of Benefit A, Benefit B, or Benefit C.

### **Benefit A:**

#### *Eligibility:*

Death before retirement.

#### *Amount:*

The accumulation of Member and city contributions plus 5% interest if death occurred before May 16, 1989, or 6% interest if death occurred on or after May 16, 1989. Paid as a life annuity, 15 year certain and life, or lump sum. If an annuity is chosen the beneficiary also receives additional benefits.

### **Benefit B:**

#### *Eligibility:*

An active Member with 7 years of Teaching Service. A former Member age 60 with 7 years of Teaching Service who dies before retirement or disability benefits begin.

#### *Amount:*

The actuarial equivalent of any benefits the Member could have received if he had resigned on the date of death. Paid to the beneficiary in the form of a life annuity or a 15 year certain and life annuity.

**Benefit C:**

*Eligibility:*

An active Member who dies and leaves surviving children.

*Amount:*

A monthly benefit of \$248.30 to the surviving widow while caring for a child and an additional \$248.30 per month for each surviving dependent child. The maximum family benefit is \$579.30 per month. These benefits may be increased by the Board of Trustees.

*Benefit Increases:*

Same as retirement.

**TERMINATION**

**Deferred Annuity:**

- *Eligibility:*

7 years of Teaching Service.

*Amount:*

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

3.00% until January 1 of the year following the attainment of 55, and

5.00% thereafter until the annuity begins.

In addition, the interest earned on the Member and city contributions between termination and age 60 can be applied to provide an additional annuity.

**Refund of Contributions:**

*Eligibility:*

Termination of teaching service.

Benefits to the widow cease upon death or when no longer caring for an eligible child. Benefits for dependent children cease upon marriage or age 18 (age 22 if a full time student).

*Amount:*

Member's contributions with 5.00% interest if termination occurred before May 16, 1989 and 6.00% interest if termination occurred after May 16, 1989. A deferred annuity may be elected in lieu of a refund.

TABLE 3B

COORDINATED

Minneapolis Teachers' Retirement Fund  
**Active Members as of June 30, 1992**

<u>AGE</u>	<u>YEARS OF SERVICE</u>								<u>TOTAL</u>
	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	59	2	-	-	-	-	-	-	61
25-29	157	82	21	-	-	-	-	-	260
30-34	162	144	139	8	-	-	-	-	453
35-39	99	120	131	33	-	-	-	-	383
40-44	79	156	112	50	1	-	-	-	398
45-49	52	91	94	27	1	-	-	-	265
50-54	21	52	60	31	-	2	-	-	166
55-59	10	23	23	6	-	-	-	-	62
60-64	2	13	4	7	-	-	-	-	26
65+	-	6	1	2	-	-	-	-	9
ALL	641	689	585	164	2	2	0	0	2,083

## AVERAGE ANNUAL EARNINGS

<u>AGE</u>	<u>YEARS OF SERVICE</u>								<u>ALL</u>
	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	14,407	23,933	-	-	-	-	-	-	14,719
25-29	17,690	26,333	28,685	-	-	-	-	-	21,304
30-34	20,699	29,631	31,984	34,978	-	-	-	-	27,253
35-39	20,595	32,603	36,877	39,578	-	-	-	-	31,562
40-44	21,575	33,101	41,410	43,560	34,924	-	-	-	34,470
45-49	22,495	33,551	41,598	47,520	63,515	-	-	-	35,772
50-54	24,884	34,186	40,967	46,224	-	48,200	-	-	37,877
55-59	18,658	36,406	42,040	45,108	-	-	-	-	36,476
60-64	23,912	34,987	45,917	43,627	-	-	-	-	38,143
65+	-	19,712	47,608	34,022	-	-	-	-	25,991
ALL	19,736	31,628	37,750	43,439	49,219	48,200	0	0	30,650

## PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE

<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>TOTAL</u>
12,650	21,791	22,084	7,124	98	96	0	0	63,844

## COORDINATED

Minneapolis Teachers' Retirement Fund  
*Service Retirements as of June 30, 1992*

## YEARS RETIRED

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
<50	-	-	-	-	-	-	-	0
50-54	-	-	-	-	-	-	-	0
55-59	-	1	-	-	-	-	-	1
60-64	2	4	-	-	-	-	-	6
65-69	1	2	-	-	-	-	-	3
70-74	-	-	-	-	-	-	-	0
75-79	-	-	-	-	-	-	-	0
80-84	-	-	-	-	-	-	-	0
85+	-	-	-	-	-	-	-	0
ALL	3	7	0	0	0	0	0	10

## AVERAGE ANNUAL BENEFIT

## YEARS RETIRED

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
<50	-	-	-	-	-	-	-	0
50-54	-	-	-	-	-	-	-	0
55-59	-	2,830	-	-	-	-	-	2,830
60-64	1,848	1,518	-	-	-	-	-	1,628
65-69	8,616	3,766	-	-	-	-	-	5,383
70-74	-	-	-	-	-	-	-	0
75-79	-	-	-	-	-	-	-	0
80-84	-	-	-	-	-	-	-	0
85+	-	-	-	-	-	-	-	0
ALL	4,104	2,348	0	0	0	0	0	2,875

## TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS RETIRED

<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
12	16	0	0	0	0	0	29

TABLE 11B  
COORDINATED

**Minneapolis Teachers' Retirement Fund**  
***Determination of Contribution Sufficiency***  
*(dollars in thousands)*

July 1, 1992

	Percent of Payroll	Dollar Amount
<b>A. STATUTORY CONTRIBUTIONS - CHAPTER 354A</b>		
1. Employee Contributions	4.50%	\$ 3,060
2. Employer Contributions	4.50%	3,060*
3. Total	<u>9.00%</u>	<u>\$ 6,120</u>
<b>B. REQUIRED CONTRIBUTIONS - CHAPTER 356</b>		
1. Normal Cost**		
a. Retirement Benefits	7.38%	\$ 5,021
b. Disability Benefits	0.79%	534
c. Survivors' Benefits	0.18%	122
d. Deferred Retirement Benefits	0.50%	339
e. Refunds Due to Death or Withdrawal	0.25%	170
f. Total	<u>9.10%</u>	<u>\$ 6,186</u>

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1992 is \$67,994.

\* See "Changes in Plan Provisions" in Commentary Section of this report.

\*\* See "Changes in Actuarial Assumptions" in Commentary Section of this report.



## COORDINATED

**Minneapolis Teachers' Retirement Fund  
Summary of Plan Provisions**

**GENERAL**

<i>Eligibility:</i>	A teacher who is employed by the Board of Education of Special School District No. 1 and who is covered by the Social Security Act. Certain part-time licensed employees are covered as well as employees of the Minneapolis Teachers Retirement Fund (unless they belong to the Minneapolis Employees Retirement Fund).
<i>Contributions:</i>	<p>Member: 4.50% of Salary.</p> <p>Employer: <b>4.50% of Salary prior to July 1, 1993.</b> <b>5.50% of Salary after July 1, 1993.</b></p>
<i>Allowable Service:</i>	A year is earned during a school year if the Member is employed in a covered position and employee contributions are deducted. May also include certain part-time service, extended leaves of absence, sabbatical leaves, and military service.
<i>Salary:</i>	Total compensation. Excludes lump sum payments for unused vacation leave or unused sick leave at separation.
<i>Average Salary:</i>	Average of the 5 highest consecutive years of Salary. Average Salary is based on all Allowable Service is less than 5 years.

**RETIREMENT***Normal Retirement Benefit:*

<i>Eligibility:</i>	
<b>First hired before July 1, 1989:</b>	Age 65 and 3 years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and 1 year of Allowable Service.
<b>First hired after July 1, 1989:</b>	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.
<i>Amount:</i>	1.50% of Average Salary for each year of Allowable Service.

**TABLE 13B**  
**(cont)**  
**COORDINATED**

**Early Retirement Benefit:**

*Eligibility:*

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.

*Amount:*

**First hired before  
July 1, 1989:**

The greater of:

1.00% of Average Salary for each of the first 10 years of Allowable Service plus 1.50% of Average Salary for each subsequent year of Allowable Service with reduction of 0.25% for each month the Member is under age 65 (age 62 if 30 years of Allowable Service). No reduction if age plus years of Allowable Service totals 90.

or

1.50% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3.00% per year and actuarial reduction for each month the Member is under age 65.

**First hired after  
July 1, 1989:**

1.50% of Average Salary for each year of Allowable Service assuming augmentation to the age eligible for full Social Security retirement benefits at 3.00% per year and actuarial reduction for each month the Member is under the Social Security retirement age.

*Form of Payment:*

Life annuity. Actuarial equivalent options are:  
Guaranteed refund

3 or 15 year certain and life

50%, 75%, or 100% joint and survivor with bounce back feature without additional reduction (option is canceled if Member is pre-deceased by beneficiary).

*Benefit Increases:*

Benefits are increased 2.0% annually beginning on the January 1 or July 1 if the Member has been receiving benefits for at least 12 months. Beneficiaries are entitled to the increase the Member would have received.

In addition, if the time weighted rate of return over the last 3 years exceeds 8.50%, the Board of Trustees may increase benefits on January 1 by all or a portion of the excess.

Members retired under law in effect before May 1, 1974 and before any adjustment under Laws 1987, Chapter 372, receive an additional lump sum payment each year. In 1989, this lump sum payment is \$25 times each full year of Allowable Service. In each following year, the lump sum payment will increase by the same percentage increase that is applied to regular annuities.

## **DISABILITY**

### ***Disability Benefit:***

#### *Eligibility:*

Total and permanent disability before the normal retirement age with 3 years of Allowable Service. Also, at least 2 of the years of Allowable Service must have been uninterrupted.

#### *Amount:*

Normal Retirement Benefit based on Allowable Service and Average Salary at disability without reduction for commencement before the normal retirement age. Benefit is reduced by Workers' Compensation.

Payments are recomputed as a retirement at the normal retirement age. Payments stop if disability ceases or death occurs. Benefits may be reduced on resumption of partial employment.

#### *Form of Payment:*

Same as for retirement.

#### *Benefit Increases:*

Same as for retirement.

### ***Retirement After Disability:***

#### *Eligibility:*

Normal retirement age with continued disability.

#### *Amount:*

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

#### *Benefit Increases:*

Same as for retirement.

## DEATH

### *Surviving Spouse Annuity:*

*Eligibility:* Member who dies before retirement benefits commence, if age 50 with 3 years of Allowable Service. Benefits may commence when the Member would have been qualified for a retirement benefit (earlier of age 55 or age when Member would have had 30 years of Allowable Service).

*Amount:* Survivor's payment of the 100% joint and survivor benefit the Member could have elected if terminated.

*Benefit Increases:* Same as for retirement.

### *Refund of Contributions:*

*Eligibility:* Member or former Member dies before receiving any retirement benefits and survivor's benefits are not payable.

*Amount:* Member's contributions with 5.00% interest if death occurred before May 16, 1989 and 6.00% interest if death occurred after May 16, 1989.

## TERMINATION

### *Deferred Annuity:*

*Eligibility:* 3 years of Allowable Service.

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

3.00% until January 1 of the year following the attainment of 55, and

5.00% thereafter until the annuity begins.

Amount is payable as a normal or early retirement benefit.

### *Refund of Contributions:*

*Eligibility:* Termination of teaching service.

*Amount:* Member's contributions with 5.00% interest if termination occurred before May 16, 1989 and 6.00% interest if termination occurred after May 16, 1989. A deferred annuity may be elected in lieu of a refund.