### Minneapolis Teachers' Retirement Fund ACTUARIAL VALUATION REPORT

July 1, 1997



Actuaries & Consultants

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Legislative Commission on Pensions and Retirement 55 State Office Building

St. Paul, Minnesota 55155

November 7, 1997

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, 1997.

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 as adopted by the Commission on Pensions and Retirement.

Respectfully submitted;

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**Consulting Actuary** 

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

Consulting Actuary

Enclosure

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### Minneapolis Teachers' Retirement Fund Report Highlights

(dollars in thousands)

	uly 1, 1996 Valuation	_	July 1, 1997 Valuation
A. CONTRIBUTIONS % OF PAYROLL (Table 11)			
1. Statutory Contributions - Chapter 422A	19.18%		28.61%
2. Required Contributions - Chapter 356	25.15%		28.23%
3. Sufficiency / (Deficiency)	 (5.97%)		0.38%
B. FUNDING RATIOS			
1. Accrued Benefit Funding Ratio			
a. Current Assets (Table 1)	\$ 612,852	\$	673,209
b. Current Benefit Obligations (Table 8)	1,008,933		1,124,008
c. Funding Ratio	60.74%		59.89%
2. Accrued Liability Funding Ratio			
a. Current Assets (Table 1)	\$ 612,852	\$	673,209
b. Actuarial Accrued Liability (Table 9)	 1,055,063		1,173,412
c. Funding Ratio	58.09%		57.37%
3. Projected Benefit Funding Ratio (Table 8)			
a. Current and Expected Future Assets	\$ 1,030,664	\$	1,210,232
b. Current and Expected Future Benefit Obligations	 1,248,989		1,358,287
c. Funding Ratio	82.52%		89.10%
C. PLAN PARTICIPANTS			
1. Active Members			
a. Number (Table 3)	4,690		4,653
b. Projected Annual Earnings	\$ 182,179	\$	194,183
c. Average Annual Earnings (Actual dollars)	\$ 38,844	\$	41,733
d. Average Age	43.2		43.7
e. Average Service	9.7		10.1
f. Additional Members on Leave of Absence *	88		77
2. Others			
a. Service Retirements (Table 4)	2,590		2,614
b. Disability Retirements (Table 5)	22		21
c. Survivors (Table 6)	232		232
d. Deferred Retirements (Table 7)	640		669
e. Terminated Other Non-Vested (Table 7)	 1,106		1,311
f. Total	4,590		4,847

<sup>\*</sup> Valued as deferred retirements, liability included with actives.

# 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 59.89%. The corresponding ratio for the prior year was 60.74%.

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 1997 the ratio is 57.37%, which is a decrease from the 1996 value of 58.09%.

The *Projected Benefit Funding Ratio* is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 89.10% shows that the current statutory contributions are insufficient in the long run.

#### 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 F.1 to F.6. 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 as follows:

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

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

#### 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 A.6, 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 B.3, is funded over the remaining years to the amortization date by a series of payments that remain a constant percentage of payroll each year.

The payments will increase 5.0% each year because that is the assumed rate of increase in payroll (Note: this was 6.5% for the prior plan year. See Actuarial Assumptions below.). 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.

#### 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 current year contribution sufficiency since the Statutory Contribution Rate is 28.61% compared to the Required Contribution Rate of 28.23%. In the absence of the extra \$5,000,000 State Supplementary contribution appropriated for this year as part of the Pension Uniformity Package, the Fund would have a current year contribution <u>deficiency</u> of 2.19% of payroll.

#### Changes in Actuarial Assumption

This valuation incorporates new actuarial assumptions for: salary growth, payroll growth, rates of retirement, rates of mortality, and elected form of payment, as recommended in Milliman & Robertson's February 4, 1997 Proposed Asset Valuation Method and Assumption Changes report. The new assumptions are based on the fund's actual experience and are designed to more realistically reflect current participant trends.

The effect of these assumption changes was to increase the Fund's unfunded accrued liability by \$12,780,000. The following table provides general explanation:

Actuarial Assumption Changed	Effect on Unfunded Actuarial Accrued Liability	Significance
Mortality	Increase	Moderate
Rate of Retirement	Increase	Moderate
Salary Increases	Increase	Moderate
Payroll Growth	None	*

<sup>\*</sup> Payroll Growth Assumption did not affect unfunded actuarial accrued liability but did increase the required amortization of unfunded actuarial accrued liability and decreased the present value of future statutory supplemental contributions.

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

#### Changes in Plan Provisions

Various plan provisions became effective July 1, 1997 under the Pension Uniformity Act of 1997. Basic Plan benefits did not change. Coordinated Plan provisions which changed include:

- 1. an increase in the Employee Contribution Rate from 4.50% of pay to 5.50% of pay,
- 2. an increase in the benefit multipliers of .20%, and
- 3. age 66 normal retirement age for all participants hired after 1989 and were born during 1938 or later.

Effective October 1, 1997 the State of Minnesota will provide direct state aid to the fund.

Effective with the Pension Uniformity Act, indexing of the additional contribution amounts (required to be made by the city of Minneapolis and Minneapolis Public Schools) has been eliminated.

The effect of these benefit improvements was to increase the Fund's unfunded accrued liability by \$11,482,000.

Tables 13A and 13B contain summaries of current plan benefits.

### Minneapolis Teachers' Retirement Fund Accounting Balance Sheet

(dollars in thousands)

July 1, 1997

		Market Value		Cost Value
A. ASSETS				
1. Cash, Equivalents, Short-Term Securities	\$	104,745	\$	104,745
Investments     a. Fixed Income		203,279		200,222
b. Equity		487,325		305,943
c. Real Estate		47,650		47,650
3. Equity in Minnesota Post-Retirement Investment Fund		_		-
4. Other Assets	-	13,179		13,179
B. TOTAL ASSETS	\$	856,178	\$	671,739
C. AMOUNTS CURRENTLY PAYABLE	\$	59,902	\$	59,902
D. ASSETS AVAILABLE FOR BENEFITS				
1. Member Reserves	\$	293,087	\$	293,087
2. Employer Reserves		503,189		318,588
3. MPRIF Reserves		-		-
<ul><li>4. Non-MPRIF Reserves</li><li>5. Total Assets Available for Benefits</li></ul>		796,276	\$	- (11 (75
J. Total Assets Available for Belieffts	Φ	190,210	Ф	611,675
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND				
ASSETS AVAILABLE FOR BENEFITS	\$	856,178		671,577
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS				
1. Cost Value of Assets Available for Benefits (D.5)			\$	611,675
2. Market Value of Assets Available for Benefits (D.5)	\$	796,276		
3. Cost Value of Assets Available for Benefits (D.5)		611,675		•
4. Market over Cost (F.2 - F.3)	\$	184,601		(1.50.4
5. 1/3 of Market over Cost (F.4 / 3)			<u>,</u>	61,534
6. Actuarial Value of Assets (F.1 + F.5)			\$	673,209

# Minneapolis Teachers' Retirement Fund Change In Assets Available for Benefits

(dollars in thousands)

June 30, 1997

	Market Value		Cost Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$ 698,386	\$	570,085
B. OPERATING REVENUES			
1. Member Contributions	\$ 11,697	\$	11,697
2. Employer Contributions	17,967	·	17,967
3. Supplemental Contributions *	6,054		6,054
4. Investment Income	26,559		26,559
5. MPRIF Income	_		· -
6. Net Realized Gain / (Loss)	32,559		32,559
7. Other	-		· <del>-</del>
8. Net Change in Unrealized Gain / (Loss)	 67,868		
9. Total Operating Revenue	\$ 162,704	\$	94,836
C. OPERATING EXPENSES			
1. Service Retirements	\$ 54,109	\$	54,109
2. Disability Benefits	883		883
3. Survivor Benefits	3,634		3,634
4. Refunds	471		471
5. Administrative Expenses	520		520
6. Investment Expenses	 5,197		5,197
7. Total Operating Expenses	\$ 64,814	\$	64,814
D. CHANGE IN ACCOUNTING METHOD	\$ -	\$	11,568
E. ASSETS AVAILABLE AT END OF PERIOD	\$ 796,276	\$	611,675

<sup>\*</sup> Includes contributions from School District #1, the City of Minneapolis, and matching State contributions.

# Minneapolis Teachers' Retirement Fund Active Members as of June 30, 1997 \*

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V H	Λ	~~	I IH.	SER	· V I	1 'H'

<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>25-29</u>	<u>30+</u>	TOTAL
<25	27	50	-	-	-	-	-	-	77
25-29	40	409	28	-	-	-	-	-	477
30-34	35	307	168	17	-	-	-	-	527
35-39	19	231	198	128	8	-	-	-	584
40-44	26	264	184	126	37	12	-	-	649
45-49	6	212	212	128	78	88	72	-	796
50-54	8	131	124	121	71	92	293	66	906
55-59	1	57	64	69	55	40	105	83	474
60-64	1	28	28	23	12	22	44	20	178
65+	-	12	15	2	6	5	11	11	62
ALL	163	1,701	1,021	614	267	259	525	180	4,730

# AVERAGE ANNUAL EARNINGS YEARS OF SERVICE

<u>AGE</u>	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>ALL</u>
<25	5,291	14,059	-	-	-	-	-	-	10,984
25-29	9,774	21,590	30,760	-	-	-	-	-	21,138
30-34	8,278	27,122	35,469	44,514	_	-	_	-	29,092
35-39	11,067	26,883	40,339	45,405	52,311	_	_	-	35,339
40-44	9,340	27,517	42,809	48,337	47,855	50,690	-	-	36,754
45-49	4,496	29,553	41,969	50,538	51,485	57,048	57,563	-	43,768
50-54	9,994	32,012	44,466	49,466	53,414	52,918	58,110	57,661	49,962
55-59	2,613	26,994	42,959	47,853	53,022	49,851	59,419	58,977	49,867
60-64	1,373	21,577	46,915	46,947	50,457	52,652	53,774	54,757	46,202
65+	-	7,404	31,890	49,435	53,026	51,828	58,622	56,657	40,507
ALL	8,513	25,882	40,780	48,198	51,825	53,701	57,944	57,884	39,160

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

<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>TOTAL</u>
1,388	44,025	41,637	29,594	13,837	13,908	30,421	10,419	185,229

<sup>\*</sup> Includes members on leave of absence.

# Minneapolis Teachers' Retirement Fund Service Retirements as of June 30, 1997 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>	TOTAL
<50	-	-	-	-	-	-	-	-
50-54	6	39	1	-	-	-	-	46
55-59	11	181	46	-		-	-	238
60-64	2	241	123	20	-	-	-	386
65-69	3	130	250	102	32	-	1	518
70-74	-	20	129	171	104	11	2	437
75-79	-	3	24	99	180	34	5	345
80-84	-	-	2	24	117	105	15	263
85+	-	-	-	-	2	155	224	381
ALL	22	614	575	416	435	305	247	2,614

## 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	-	-	-	-	· -	-	-	-
50-54	20,222	17,675	12,717	-	-	-	-	17,900
55-59	27,050	27,936	18,730	-	-	-	-	26,116
60-64	36,800	24,249	30,042	11,860	_	-	-	25,518
65-69	20,771	19,151	26,220	26,019	17,462	-	10,80	23,804
70-74	-	24,813	24,240	21,029	26,587	8,510	8,933	23,102
75-79	-	10,554	24,823	21,202	20,401	13,945	15,721	20,149
80-84	-	-	12,194	24,000	17,219	15,774	11,184	16,878
85+	-	-	-	-	2,775	13,783	13,230	13,400
ALL	25,218	23,790	25,863	22,024	20,727	14,296	13,112	21,351

### 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>	TOTAL
555	14.607	14.871	9.162	9.016	4.360	3.239	55.811

# Minneapolis Teachers' Retirement Fund Disability Retirements as of June 30, 1997

#### 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>	TOTAL	
<50	-	-	1	1	-	-	-	2	
50-54	-	5	2	1	_	-	-	8	
55-59	-	2	1	_	_	-	-	3	
60-64	-	1	3	3	-	1	-	8	
65+	-	-	-	. <del>.</del>	-	-	-	-	
ALL	-	8	7	5	-	1	_	21	

#### **AVERAGE ANNUAL BENEFIT**

#### YEARS DISABLED

<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	10-14	<u>15-19</u>	20-24	<u>25+</u>	ALL	
<50	-	-	28,452	14,528	_	-	-	21,490	
50-54	-	36,470	30,815	25,472	-	-	-	33,682	
55-59	-	17,559	22,527	-	-	-	-	19,215	
60-64	-	15,585	21,312	26,541	_	10,156	· _	21,163	
65+	-	_	_	-	-	-	-	-	
ALL	_	29,132	25,221	23,924	_	10,156	_	25,685	

### 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>	<b>TOTAL</b>
_	233	177	120	_	10	_	540

### Minneapolis Teachers' Retirement Fund Survivors as of June 30, 1997 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>	TOTAL
<50	-	13	16	18	6	-	-	53
50-54	-	1	1	2	-	-	-	4
55-59	-	2	1	2	1	-	1	7
60-64	-	5	10	6	2	1	-	24
65-69	-	3	10	17	6	2	1	39
70-74	-	-	3	13	13	1	2	32
75-79	-	-	1	4	6	5	-	16
80-84	-	1	2	-	4	12	4	23
85+	-	1	1	2	1	8	21	. 34
ALL	_	26	45	64	39	29	29	232

### AVERAGE ANNUAL BENEFIT

## YEARS SINCE MEMBER'S RETIREMENT 1-4 5-9 10-14 15-19 20-24

<u>AGE</u>	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
<50	-	10,510	16,440	6,129	7,717	-	-	10,496
50-54	-	18,848	35,280	7,612	-	-	-	7,338
55-59	-	15,697	7,247	10,182	12,807	-	8,650	11,495
60-64	-	28,287	27,709	14,254	14,288	12,239	-	22,703
65-69	· -	24,305	31,173	22,918	19,886	9,798	11,060	23,698
70-74	-	-	35,559	20,104	15,751	15,316	7,869	18,870
75-79	-	-	24,596	8,878	19,724	16,176	-	16,208
80-84	-	41,768	11,588	-	18,411	13,742	10,615	15,041
85+	-	41,484	18,640	4,928	15,740	12,069	12,521	13,095
ALL	-	18,634	23,722	14,496	15,884	13,431	11,753	16,507

## 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>	15-19	<u>20-24</u>	<u>25+</u>	TOTAL
_	484	1,067	928	61	389	341	3,830

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

### Minneapolis Teachers' Retirement Fund Reconciliation of Members

			Terminated			
		Actives*	Deferred Retirement	Other Non-Vested		
A.	ON JUNE 30, 1996	4,729	640	1,106		
В.	ADDITIONS	469	95	364		
C.	DELETIONS					
	1. Service Retirement	(86)	(36)	(14)		
	2. Disability	-	<del>-</del>	-		
	3. Death – Survivor	-	(1)	-		
	4. Death – Other	(1)	(1)	-		
	5. Terminated – Deferred	(91)	· -	. <u>-</u>		
	6. Terminated – Refund	-	<u>-</u>	(101)		
	7. Terminated - Other Non-Vested	(349)	(7)	-		
	8. Returned as Active	62	(21)	(41)		
D.	DATA ADJUSTMENTS	(3)	-	(3)		
	1. Vested	3,628				
	2. Non-Vested	1,102				
E.	TOTAL ON June 30, 1997	4,730	669	1,311		
			Recipients			
		Retirement Annuitants	Disabled	Survivors		
A.	ON JUNE 30, 1996	2,590	22	232		
В.	ADDITIONS	141	-	26		
C.	DELETIONS					
	1. Service Retirement	-	-	-		
	2. Death	(132)	(1)	(14)		
	3. Annuity Expired	-	-	(12)		
	4. Returned as Active	-	-	-		
D.	DATA ADJUSTMENTS	21	_	-		
E.	TOTAL ON June 30, 1997	2,620	21	232		

<sup>\*</sup> Includes 77 members on leave of absence.

### Minneapolis Teachers' Retirement Fund Actuarial Balance Sheet

(dollars in thousands)

July 1, 1997

A. CURRENT ASSETS (Table 1; Line F.6)	\$	673,209
<ul> <li>B. EXPECTED FUTURE ASSETS</li> <li>1. Present Value of Expected Future Statutory Supplemental Contributions</li> <li>2. Present Value of Future Normal Costs</li> <li>3. Total Expected Future Assets</li> </ul>	\$	352,148 184,875 537,023
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS	<u>\$</u>	1,210,232
D. CURRENT BENEFIT OBLIGATIONS  1. Benefit Recipients  Non-Vested Vested		Total
a. Retirement Annuities \$ 604,069 b. Disability Benefits 5,798 c. Surviving Spouse and Child Benefits 30,774 2. Deferred Retirements 23,373 3. Former Members Without Vested Rights 1,698 4. Active Members a. Retirement Annuities * \$ 1,317 421,315 b. Disability Benefits 18,913 - c. Surviving Spouse and Child Benefits 4,422 - d. Deferred Retirements 150 10,420 e. Refund Liability Due to Death or Withdrawal 5. Total Current Benefit Obligations \$ 24,802 \$ 1,099,206	\$	604,069 5,798 30,774 23,373 1,698 422,632 18,913 4,422 10,570 1,759 1,124,008
E. EXPECTED FUTURE BENEFIT OBLIGATIONS	\$	234,279
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS	\$	1,358,287
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D.5 - A)	\$	450,799
H. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F - C)	\$	148,055

\* Includes members on leave of absence.

# Minneapolis Teachers' Retirement Fund Determination of Unfunded Actuarial Accrued Liability (UAAL) and Supplemental Contribution Rate

(dollars in thousands)

July 1, 1997

		Actuarial	1	Actuarial		
	Pre	esent Value	Pre	esent Value		Actuarial
	of	f Projected	(	of Future		Accrued
		Benefits	No	rmal Costs		Liability
A. DETERMINATION OF ACTUARIAL						
ACCRUED LIABILITY (AAL)						
1. Active Members	4	<	4			101100
a. Retirement Benefits	\$ -	630,794	\$	146,674	\$	484,120
b. Disability Benefits		33,056		15,401		17,655
c. Surviving Spouse and Child Benefits		7,619		3,235		4,384
d. Deferred Retirements		16,964		14,282		2,682
e. Refund Liability Due to Death or Withdrawal		4,142		5,283		(1,141)
f. Total	\$ \$	692,575	\$	184,875	\$	507,700
2. Deferred Retirements	\$	23,373			\$	23,373
3. Former Members Without Vested Rights		1,698				1,698
4. Annuitants in MPRIF		-				-
5. Annuitants Not in MPRIF		640,641				640,641
6. Total	\$	1,358,287	\$	184,875	\$	1,173,412
B. DETERMINATION OF UNFUNDED ACTUARIAL	,					
ACCRUED LIABILITY (UAAL)		•				
1. Actuarial Accrued Liability (A.6)					\$	1,173,412
2. Current Assets (Table 1; Line F.6)						673,209
3. Unfunded Actuarial Accrued Liability (B.1 - B.2)					<u>\$</u>	500,203
C. DETERMINATION OF SUPPLEMENTAL CONTR	TRI	TION DATE	7			
1. Present Value of Future Payrolls Through the	ш	TION KAIL	ز			
Amortization Date of June 30, 2020						3,037,593
2. Supplemental Contribution Rate (B.3 / C.1)						3,037,393 16.47%
2. Supplemental Controllion Rate (D.5 / C.1)						10.4/%

# Minneapolis Teachers' Retirement Fund Changes in Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

June 30, 1997

A. UAAL AT BEGINNING OF YEAR	\$	442,211
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING		
Normal Cost and Expenses	\$	22,156
2. Contributions	Ψ	(35,718)
3. Interest		37,953
4. Total	\$	24,391
	<u> </u>	
C. EXPECTED UAAL AT END OF YEAR (A + B.4)	\$	466,602
D. INCREASE / (DECREASE) DUE TO ACTUARIAL LOSSES / (GAINS)		
BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED		
1. Age and Service Retirements (a)	\$	-
2. Disability Retirements (a)		-
3. Death-in-Service Benefits (a)		-
4. Withdrawal (b)		-
5. Salary Increases		9,263
6. Contribution Income (b)		-
7. Investment Income (c)		(3,227)
8. Mortality of Annuitants		6,620
9. Other Items		(3,317)
10. Total	\$	9,339
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C + D.5)	\$	475,941
F. CHANGE IN UAAL DUE TO PLAN AMENDMENTS		11,482
G. CHANGE IN UAAL DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS		12,780
H. UAAL AT END OF YEAR (E + F + G)	\$	500,203
<ul><li>(a) Included in Item D.8.</li><li>(b) Included in Item D.9.</li></ul>		

(c) Includes a gross investment gain of \$33,179 offset by \$29,952 used to provide next year's cost of living adjustment to annuitants.

# Minneapolis Teachers' Retirement Fund Determination of Contribution Sufficiency

(dollars in thousands)

July 1, 1997

	Percent of Payroll	Dollar Amount	
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A			
1. Employee Contributions	6.54%	\$ 12,70	8
2. Employer Contributions	9.53%	18,51	
3. Supplemental Contribution *	7.55 70	10,51	•
a. 1993 Legislation	2.57%	5,00	O
b. 1996 Legislation	0.63%	1,21	
c. 1997 Legislation	9.25%	17,95	
4. Administrative Expense Assessment	0.09%	17,55	
5. Total	28.61%		
<ol> <li>Normal Cost         <ul> <li>a. Retirement Benefits</li> <li>b. Disability Benefits</li> <li>c. Surviving Spouse and Child Benefits</li> <li>d. Deferred Retirements</li> <li>e. Refund Liability Due to Death or Withdrawal</li> <li>f. Total</li> </ul> </li> </ol>	9.12% 0.91% 0.19% 0.93% 0.33%	1,777 36: 1,810 64:	3 2 0 8_
2. Supplemental Contribution Amortization	16.47%	31,97	
3. Allowance for Administrative Expenses	0.28%	54	
5. Total	28.23%		_
C. CONTRIBUTION SUFFICIENCY / (DEFICIENCY) (A.3 - B.5)	0.38%	74	6
Projected Annual Payroll for Fiscal Year Beginning on the Valuation Da	ate:	\$ 194,183	3

<sup>\*</sup> Includes contributions from School District #1, the City of Minneapolis, and matching State contributions.

Interest:

Pre-Retirement:

8.50% per annum

Post-Retirement:

8.50% per annum

Salary Increases:

Total reported pay for prior fiscal year increased through the salary increase assumption to current fiscal year. Graded rates are shown in

the rate table.

Mortality:

**Pre-Retirement:** 

Male:

1983 Group Annuity Mortality Table male rates

set back 6 years.

Female:

1983 Group Annuity Mortality Table female

rates set back 4 years.

Post-Retirement:

Male:

1983 Group Annuity Mortality Table male rates

set back 4 years.

Female:

1983 Group Annuity Mortality Table female

rates set back 2 years.

Post-Disability:

Male:

1977 Railroad Retirement Board Mortality for

**Disabled Annuitants** 

Female:

1977 Railroad Retirement Board Mortality for

**Disabled Annuitants** 

Retirement Age:

**Active Members:** 

Active Members are assumed to retire according to the graded rates shown in the rate table. Rates are applied beginning at the participant's

first early retirement age.

**Deferred Members:** 

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.

Other Non-Vested Members:

Return of contributions is assumed to occur immediately.

Separation:

Graded rates shown in the rate table.

Disability:

Graded rates shown in the rate table.

Administrative Expenses:

Prior year administrative expenses (excluding investment expenses)

expressed as a percentage of prior year payroll.

Return of

Contributions:

All employees withdrawing after becoming eligible for a deferred benefit were assumed to take the larger of their contributions accumulated with interest or the value of their deferred benefit.

Family Composition:

80% of male Members and 60% of female Members are assumed to be married. Female is assumed to be three years younger than male.

Social Security:

N/A

Benefit Increases

After Retirement:

2.0% per annum

Special Consideration:

Additional 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 five year time weighted total rate of return over the assumed interest rate of 8.50% multiplied by the quantity of one minus the rate of contribution deficiency.

Optional Benefit Forms:

Married Members are assumed to elect the following forms of benefit:

Males:

25% elect life annuity option 15% elect 50% J&S option 20% elect 75% J&S option 40% elect 100% J&S option

Females:

70% elect life annuity option 15% elect 50% J&S option 5% elect 75% 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:

The Unfunded Actuarial Accrued Liability is amortized as level percentage of payroll each year to the statutory amortization date

assuming payroll increases of 5.00% per annum.

Missing Data:

The submitted participant data has been reviewed for reasonableness and constancy with data submitted for prior valuations. We have not audited this data, and the results of this valuation may change based on the

accuracy of the underlying data. In cases where submitted data was missing or incomplete, the following assumptions were applied:

Date of Birth:

Average age of participant group based

on prior years valuation report.

Date of Hire:

Current valuation date minus years of

service.

Years of Service:

Years of service on last year's valuation

plus one year.

Sex:

Male.

Deferred Benefit:

Calculated. Service at termination is calculated assuming termination on the valuation date in which the participant is first reported in vested status. Salary at termination is estimated based on assumed termination date. Estimated salary begins at \$15,000 for 1993 termination date and increases according to the salary assumption thereafter. Current level is \$19,297.

Supplemental Contributions:

The City of Minneapolis, the Minneapolis School District, and the State of Minnesota are scheduled to make the following supplemental contributions to the plan:

#### 1993 Legislation:

Supplemental contributions of \$5,000,000 annually are assumed to be made until the amortization date of June 30, 2020.

#### 1996 Legislation:

Supplemental contributions of \$1,090,000 annually are assumed to be made until the amortization date of June 30, 2020 plus additional supplemental contributions according to the following schedule:

<u>Year</u>	<u>Amount</u>
1997	\$ 125,000
1998	325,000
1999	475,000
2000	625,000
2001	775,000
2002	925,000
2003-2020	1,000,000

#### 1997 Legislation:

Supplemental contribution of \$17,954,000 is assumed to be made for the 1997-98 fiscal year. Supplemental contributions of

TABLE 12 (cont)

\$12,954,000 annually are assumed to be made beginning July 1, 1998 and continuing until the amortization date of June 30, 2020.

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

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

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

	Withd	rawal	Disability		
<u>Age</u>	<u>Male</u>	Female	<u>Male</u>	<u>Female</u>	
55	50	50	36	49	
56	40	40	42	58	
57	30	30	50	68	
58	20	20	59	80	
59	10	10	69	94	
60	0	0	90	121	
61	0	0	116	154	
62	0	0	146	193	
63	0	0	0	0	
64	0	0	0	0	
65	0	0	0	0	
66	0	0	0	0	
67	0	0	0	0	
68	0	0	0	0	
69	0	0	0	0	
70	0	0 -	0	0	

Deaths Expressed as the Number of Occurrences per 10,000:

		Pre-Retirement Mortality		tirement tality		Post-Disability Mortality	
<u>Age</u>	<u>Male</u>	Female	Male	Female .	Male	<u>Female</u>	
-							
20	3	1	3	2	271	271	
21	3	2	3	2	271	271	
22	3	2	4	2	271	271	
23	3	2	4	2	272	272	
24	4	2	4	2	272	272	
25	4	2	4	2	272	272	
26	4	2	4	2	. 272	272	
27	4	2	4	3	272	272	
28	4	2	4	3	272	272	
29	4	3	5	3	272	272	
30	4	3	5	3	272	272	
31	. 5	3	5	3	272	272	
32	5	3	5	3	272	272	
33	5	3	6	4	272	272	
34	5	3	6	4	273	273	
35	6	4	6	4	273	273	
36	6	4	7	4	273	273	
37	6	4	7	5	273	273	
38	7	4	8	, 5	273	273	
39	7	5	9	5	273	273	
40	8	5	9	6	273	273	
41	9	5	10	6	273	273	
42	9	6	10	7	273	273	
43	10	6	11	7	274	274	
44	10	7	12	8	274	274	
45	11	7	14	8	274	274	
46	12	8	15	9	275	275	
47	14	8	17	10	276	276	
48	15	9	19	11	279	279	
49	17	10	22	12	283	283	
50	19	11	25	14	289	289	
51	22	12	28	15	297	297	
52	25	14	31	16	310	310	
53	28	15	35	18	327	327	
54	31	16	39	19	348	348	

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

	Pre-Ret	<b>Pre-Retirement</b>		tirement	Post-Disability		
	Mort	tality	Mort	tality	Mort	Mortality	
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	Female	
55	35	18	43	21	371	371	
56	39	19	48	23	395	395	
57	43	21	52	25	417	417	
58	48	23	57	28	437	437	
59	52	25	61	31	455	455	
60	57	28	66	34	473	473	
61	61	31	71	38	494	494	
62	66	34	77	42	516	516	
63	71	38	84	47	541	541	
64	77	42	92	52	569	569	
65	84	47	101	58	598	598	
66	92	52	111	64	628	628	
67	101	58	124	71	658	658	
68	111	64	139	78	687	687	
69	124	71	156	87	716	716	
70	139	78	176	97	746	746	

Retirements Expressed as the Number of Occurrences per 10,000:

Age	Basic Members Eligible for 30 and out Provision	Basic Members Not Eligible for 30 and out Provision	Coordinated Members Eligible for Rule of 90 Provision	Coordinated Members Not Eligible for Rule of 90 Provision
55 or less	3,000	300	3,000	200
56	3,000	300	3,000	200
57	3,000	300	3,000	200
58	3,000	300	3,000	200
59	3,000	300	3,000	200
60	5,000	5,000	3,000	800
61	5,000	5,000	3,000	800
62	5,000	5,000	3,000	800
63	5,000	5,000	3,000	2,000
64	5,000	5,000	3,000	2,000
65	7,500	7,500	5,000	5,000
66	7,500	7,500	5,000	5,000
67	7,500	7,500	5,000	5,000
68	7,500	7,500	5,000	5,000
69	7,500	7,500	5,000	5,000
.70	7,500	7,500	7,500	7,500
71	7,500	7,500	7,500	7,500
72	7,500	7,500	7,500	7,500
73	7,500	7,500	7,500	7,500
74	7,500	7,500	7,500	7,500
75	7,500	7,500	7,500	7,500
76	7,500	7,500	7,500	7,500
77	7,500	7,500	7,500	7,500
78	7,500	7,500	7,500	7,500
79	7,500	7,500	7,500	7,500
80 or more	10,000	10,000	10,000	10,000

### Annual Salary Increases

<u>Age</u>	Male	<u>Female</u>
<22	7.50%	7.50%
23	7.40%	7.40%
24	7.30%	7.30%
25	7.20%	7.20%
26	7.10%	7.10%
27	7.00%	7.00%
28	6.90%	6.90%
29	6.80%	6.80%
30	6.70%	6.70%
31	6.60%	6.60%
32	6.50%	6.50%
33	6.40%	6.40%
34	6.30%	6.30%
35	6.20%	6.20%
36	6.10%	6.10%
37	6.00%	6.00%
38	5.90%	5.90%
39	5.80%	5.80%
40	5.70%	5.70%
41	5.60%	5.60%
42	5.50%	5.50%
43	5.45%	5.45%
44	5.40%	5.40%
45	5.35%	5.35%
46	5.30%	5.30%
47 .	5.25%	5.25%
48	5.20%	5.20%
49	5.15%	5.15%
50	5.10%	5.10%
51	5.05%	5.05%
52	5.00%	5.00%
53	5.00%	5.00%
54	5.00%	5.00%
55	5.00%	5.00%
		2.2370

# Minneapolis Teachers' Retirement Fund Active Members as of June 30, 1997 YEARS OF SERVICE

<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>25-29</u>	<u>30+</u>	TOTAL
<25	-	-	-	-	-	_	-	-	-
25-29	-	_	-	-	-	-	-	-	-
30-34	-	-	· <u>-</u>	-	-	-	-	-	-
35-39	-	-	-	-	-	-	-	-	-
40-44	-	1	3	3	6	12	-	-	25
45-49	-	-	4	25	30	87	72	-	218
50-54	-	-	5	26	49	91	293	66	530
55-59	-	-	6	17	26	40	103	83	275
60-64	-	-	3	2	4	22	44	20	95
65+	-	-	1	_	4	5	11	11	32
ALL	-	1	22	73	119	257	523	180	1,175

# AVERAGE ANNUAL EARNINGS YEARS OF SERVICE

_									
<u>AGE</u>	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	ALL
<25	-	-	-	-	-	-	_	-	-
25-29	-	-	-	-	-	-	-	-	-
30-34	-	-	-	-	-	-	-	-	
35-39	-	-	-	-	-	-	-	-	-
40-44	-	41,003	38,922	48,450	43,945	50,690	-	_	47,003
45-49	-	-	46,758	45,492	50,622	57,156	57,563	-	54,863
50-54	-	-	26,717	43,508	52,451	52,624	58,110	57,661	55,577
55-59	-	-	47,934	44,166	52,250	49,851	59,342	58,977	55,994
60-64	-	_	38,460	51,012	53,313	52,652	53,774	54,757	53,160
65+	-	-	2,244	-	52,205	51,828	58,622	56,657	54,321
ALL	-	41,003	38,300	44,749	51,538	53,623	57,923	57,884	55,130

### 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>	TOTAL
_	41	843	3,267	6,133	13,781	30,294	10,419	64,778

# Minneapolis Teachers' Retirement Fund Service Retirements as of June 30, 1997 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>	TOTAL
<50	-	-	-	-	-	-	-	-
50-54	6	33.	1	-	-	-	-	40
55-59	9	173	46	-	-	-	-	228
60-64	1	227	122	20	-	-	-	370
65-69	2	118	245	102	32	-	1	500
70-74	_	18	126	171	104	11	2	432
75-79	-	2	24	99	180	34	5	344
80-84	-	_	2	24	117	105	15	263
85+	-	-	-	-	2	155	224	381
ALL	18	571	566	416	435	305	247	2,558

# 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>	ALL
<50	-	-	-		-	-	-	-
50-54	20,222	19,908	12,717	-	_	-	-	19,775
55-59	31,922	28,876	18,730	-	-	-	-	26,949
60-64	51,862	25,266	30,261	11,860	· -	-	-	26,260
65-69	26,877	20,405	26,712	26,019	17,462	-	10,820	24,459
70-74	· -	27,012	24,663	21,029	26,587	8,510	8,933	23,301
75-79	_	14,818	24,823	21,202	20,401	13,945	15,721	20,201
80-84	-	-	12,194	24,000	17,219	15,774	11,184	16,878
85+	-	-	-	-	2,775	13,783	13,230	13,400
ALL	28,569	25,064	26,216	22,024	20,727	14,296	13,112	21,674

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

<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
514	14,312	14,838	9,161	9,016	4,360	3,239	55,441

# Minneapolis Teachers' Retirement Fund Disability Retirements as of June 30, 1997

### 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>	TOTAL	
<50	-	-	1	1	-	-	-	2	
50-54	-	5	2	1	-	-	-	8	
55-59	-	1	1	-	-	-	-	2	
60-64	-	1	3	3	-	1	-	8	
65+	-	-	-		-	-	-	-	
ALL	_	7	7	5	-	1	-	20	

#### **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	-	-	28,452	14,528	-	-	-	21,490	
50-54	-	36,470	30,815	25,472	· -	-	-	33,682	
55-59	-	28,667	22,527	-	-	-	-	25,597	
60-64	-	15,585	21,312	26,541	-	10,156	-	21,163	
65+	-	-	-	-	-	· _	-	-	
ALL	-	32,372	25,221	23,924	_	10,156	-	26,646	

### 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>	TOTAL
_	227	177	120	_	10	_	533

### Minneapolis Teachers' Retirement Fund Survivors as of June 30, 1997 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>	TOTAL
<50	-	13	16	18	6	-	-	53
50-54	-	1	1	2	-	-	•	4
55-59	-	2	1	2	1	-	1	7
60-64	-	5	10	6	2	1	-	24
65-69	-	3	10	17	6	2	1	39
70-74	-	-	3	13	13	1	2	32
75-79	-	-	1	4	6	5	-	16
80-84	-	1	2	-	4	12	4	23
85+	-	1	1	2	1	8	21	34
ALL	-	26	45	64	39	29	29	232

# AVERAGE ANNUAL BENEFIT YEARS SINCE MEMBER'S RETIREMENT

<u>AGE</u>	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL
<50	-	10,510	16,440	6,129	7,717	-	_	10,496
50-54	· -	18,848	35,280	7,612	-	-	-	7,338
55-59	-	15,697	7,247	10,182	12,807	-	8,650	11,495
60-64	_	28,287	27,709	14,254	14,288	12,239	-	22,703
65-69	-	24,305	31,173	22,918	19,886	9,798	11,060	23,698
70-74	-	-	35,559	20,104	15,751	15,316	7,869	18,870
75-79	-	-	24,596	8,878	19,724	16,176	-	16,208
80-84	-	41,768	11,588	-	18,411	13,742	10,615	15,041
85+	-	41,484	18,640	4,928	15,740	12,069	12,521	13,095
ALL	<b>-</b> ,	18,634	23,722	14,496	15,884	13,431	11,753	16,507

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

<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	TOTAL
_	484	1,067	928	61	389	341	3,830

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

**BASIC** 

# Minneapolis Teachers' Retirement Fund Determination of Contribution Sufficiency

(dollars in thousands)

July 1, 1997

	Percent of	ercent of	
<u> </u>	Payroll	Dolla	r Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A			
1. Employee Contributions	8.50%	\$	5,746
2. Employer Contributions	12.14%		8,207
3. Supplemental Contribution *			,
a. 1993 Legislation	2.57%		1,737
b. 1996 Legislation	0.63%		426
c. 1997 Legislation	9.25%		6,253
4. Administrative Expense Assessment	0.09%		61
5. Total	33.18%	\$	22,430
B. REQUIRED CONTRIBUTIONS - CHAPTER 356 1. Normal Cost			
a. Retirement Benefits	11.44%	\$	7,732
b. Disability Benefits	1.14%		769
c. Surviving Spouse and Child Benefits	0.21%		140
d. Deferred Retirements	1.61%		1,090
e. Refund Liability Due to Death or Withdrawal	0.56%		376
f. Total	14.96%	\$	10,107
Projected Annual Payroll for Fiscal Year Beginning on the Valuation Da	ite:	\$	67,601

<sup>\*</sup> Includes contributions from School District #1, the City of Minneapolis, and matching State contributions.

# Minneapolis Teachers' Retirement Fund Summary of Plan Provisions

#### **GENERAL**

Eligibility: 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.

Contributions:

Member:

8.50% of Salary.

Employer:

12.14% of Salary.

Teaching Service:

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.

Salary:

Total compensation. Excludes lump sum payments for unused

vacation leave or unused sick leave at separation.

Average Salary:

Average of the 5 highest consecutive years of Salary.

#### RETIREMENT

#### Normal Retirement Benefit:

*Eligibility:* 

Age 60. Any age with 30 years of Teaching Service.

Amount:

2.50% of Average Salary for each year of Teaching Service.

#### Early Retirement Benefit:

Eligibility: Amount:

Age 55 with less than 30 years of Teaching Service.

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 elicible for a normal retirement benefit

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:

- 10 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 predeceased 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 5 years exceeds 8.5%, the Board of Trustees will increase benefits by the excess rate of return multiplied by the quantity of one minus the rate of contribution deficiency.

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.

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).

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.

Amount:

Member's contributions with 6.00% interest. A deferred annuity may be elected in lieu of a refund.

# Minneapolis Teachers' Retirement Fund Active Members as of June 30, 1997 YEARS OF SERVICE

<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>25-29</u>	<u>30+</u>	TOTAL
<25	27	50	-	-	-	-	-	-	77
25-29	40	409	28	-	-	-	-	-	477
30-34	35	307	168	17	-	-	-	-	527
35-39	19	231	198	128	8	-	-	-	584
40-44	26	263	181	123	31	-	-	-	624
45-49	6	212	208	103	48	1	-	-	578
50-54	8	131	119	95	22	1	-	-	376
55-59	1	57	58	52	29	-	2	_	199
60-64	1	28	25	21	8	-	-	-	83
65+	-	12	14	2	2	-	-	-	30
ALL	163	1,700	999	541	148	2	2	_	3,555

### AVERAGE ANNUAL EARNINGS YEARS OF SERVICE

<u>AGE</u>	<u>&lt;1</u>	1-4	<u>5-9</u>	<u>10-14</u>	15-19	20-24	25-29	<u>30+</u>	ALL
<25	5,291	14,059	-	-	-	-	-	-	10,984
25-29	9,774	21,590	30,760	_	-	-	-	-	21,138
30-34	8,278	27,122	35,469	44,514	-	-	-	-	29,092
35-39	11,067	26,883	40,339	45,405	52,311	-	_	-	35,339
40-44	9,340	27,466	42,873	48,334	48,611	_	-	-	36,344
45-49	4,496	29,553	41,877	51,762	52,025	47,625	-	-	39,583
50-54	9,994	32,012	45,212	51,096	55,560	79,719	-	-	42,048
55-59	2,613	26,994	42,444	49,058	53,715	-	63,385	-	41,400
60-64	1,373	2,157	47,930	46,559	49,029	_	-	-	38,238
65+	-	7,404	34,008	49,435	54,668	-	-	-	25,772
ALL	8,513	25,873	40,835	48,664	52,056	63,672	63,385	-	33,882

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

<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	TOTAL
1,388	43,984	40,794	26,327	7,704	127	127	<del>-</del>	120,451

### Minneapolis Teachers' Retirement Fund Service Retirements as of June 30, 1997

VEA	IRS	RE	LIB	ED
1 1/2/	<b>717</b> .7	1112	1 1 1 1 1	

<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	-	-	-	-	-	-	-	-
50-54	-	6	-	-	-	-	-	6
55-59	2	8	-	-	-	-	-	10
60-64	1	14	1	-	-	-	-	16
65-69	-	12	5	-	-	-	1	18
70-74	-	2	3	-	-	-	-	5
75-79	-	1	-	. <del>-</del>	-	-	-	1
80-84	-	-	-	-	-	-	-	-
85+	-	-	-	-	-	-	-	-
ALL	3	43	9	-	-	_	1	56

#### **AVERAGE ANNUAL BENEFIT**

#### YEARS RETIRED

	<u>AGE</u>	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
<:	50	-	-	-	-	-	-	-	-
50	-54	-	5,396	-	-	· -	-	-	5,396
55	-59	5,127	7,614	-	-	-	-	-	7,117
60	-64	21,738	7,748	3,410	-	-	-	-	8,351
65	-69	-	6,818	2,092	-	. <u>-</u>	-	8,561	5,602
70	-74	-	5,019	6,477	-	-	-	-	5,894
75	-79	-	2,028	-	-	-	-	-	2,028
80	-84	-	-	-	-	-	-	-	-
8.5	5+	-	-	-	-	-	-	-	-
A]	LL	10,664	6,876	3,700	-	_	-	8,561	6,598

#### 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>
32	296	33	-	-	-	9	370

#### **COORDINATED**

### Minneapolis Teachers' Retirement Fund Disability Retirements as of June 30, 1997

#### 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	-	-	-	-	-	-	-	-	
50-54	-	-	-	-	-	-	-	-	
55-59	-	1	-	-	-	-	-	1	
60-64	-	-	-	_	_	-	_	-	
65+	-	-	-	-	-	-	-	_	
ALL	-	1	-	-	_	-	_	1	

#### 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>	ALL	
<50	-	-	-	-	-	-	-	-	
50-54	-	-	_	-	· _	-	-	-	
55-59	-	6,450	-	-	-	-	-	6,450	
60-64	-	-	-	-	-	_	-	-	
65+	-	-	-	_	-	· _	_	-	
ALL	-	6,450	-	_	_	_	-	6,450	

#### 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>
_	6	_	_	_	_	_	6

#### COORDINATED

### Minneapolis Teachers' Retirement Fund Determination of Contribution Sufficiency

(dollars in thousands)

July 1, 1997

	Percent of		
	Payroll	Dol	lar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A			
1. Employee Contributions	5.50%	\$	6,962
2. Employer Contributions	8.14%		10,304
3. Supplemental Contribution *			•
a. 1993 Legislation	2.57%		3,263
b. 1996 Legislation	0.63%		789
c. 1997 Legislation	9.25%		11,701
4. Administrative Expense Assessment	0.09%		114
5. Total	26.18%	\$	33,133
B. REQUIRED CONTRIBUTIONS - CHAPTER 356 1. Normal Cost			
a. Retirement Benefits	7 000	φ	0.070
b. Disability Benefits	7.88%	Ф	9,970
c. Surviving Spouse and Child Benefits	0.79% 0.18%		1,004 222
d. Deferred Retirements	0.18%		720
e. Refund Liability Due to Death or Withdrawal	0.37%		
f. Total		Φ	272
1. 10tai	9.63%	Ф	12,188
Projected Annual Payroll for Fiscal Year Beginning on the Valuation Da	ate:	\$	126,582

<sup>\*</sup> Includes contributions from School District #1, the City of Minneapolis, and matching State contributions.

#### **COORDINATED**

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

#### **GENERAL**

Eligibility: 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).

Contributions: Member:

Employer: 8.14% of Salary.

Allowable Service: 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.

5.50% of Salary.

Salary: Total compensation. Excludes lump sum payments for unused

vacation leave or unused sick leave at separation.

Average Salary: Average of the 5 highest consecutive years of Salary. Average

Salary is based on all Allowable Service if less than 5 years.

#### RETIREMENT

Normal Retirement Benefit:

Eligibility:

First hired before

July 1, 1989:

Age 65 and 3 years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and 1 year of

Allowable Service.

First hired after July 1, 1989:

The greater of age 65 or the age eligible for full Social Security retirement benefits (but not later than age 66) and 3 years of

Allowable Service. Proportionate Retirement Annuity is available at normal retirement age and 1 year of Allowable

Service.

Amount:

1.70% of Average Salary for each year of Allowable Service.

#### 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:

1.20% of Average Salary for each of the first 10 years of Allowable Service plus 1.70% 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

1.70% 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:

1.70% of Average Salary for each year of Allowable Service assuming augmentation to the age eligible for Normal Retirement benefits at 3.00% per year and actuarial reduction for each month the Member is under the Normal Retirement Age.

Form of Payment:

Life annuity. Actuarial equivalent options are:

- · Guaranteed refund
- 10 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 predeceased 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 5 years exceeds 8.5%, the Board of Trustees will increase benefits by the excess rate of return multiplied by the quantity of one minus the rate of contribution deficiency.

#### 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:

Any active Member who dies with 3 years of Allowable Service prior to retirement or disability benefits commence.

Any former Member who dies before retirement or disability benefits commence, if age 50 with 3 years of Allowable Service or any age with 30 years of Allowable Service. If the former Member dies prior to age 55 benefits are deferred to age 55.

Amount:

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

Upon the death of any vested active member, the benefit is calculated using 50% of otherwise applicable early retirement reduction from the Member's age 55 to the Member's benefit commencement age.

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 6.00% interest.

#### 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.

TABLE 13B (cont) COORDINATED

Amount:

Member's contributions with 6.00% interest. A deferred annuity may be elected in lieu of a refund.

## Minneapolis Teachers' Retirement Fund Schedule of Funding Progress

(dollars in thousands)

July 1, 1997

					Actual	
					Covered	
Actuarial					Payroll	
Valuation	Actuarial Value	Actuarial Accrued	Unfunded	Funded	(Previous	UAAL as % of
Date	of Assets	Liability	AAL (UAAL)	Ratio	FY)	Covered Payroll
	(A)	(B)	(B)-(A)	(A)/(B)	(C)	((B)-(A))/(C)
07/01/91	\$ 424,677	\$ 826,574	\$ 401,897	51.38%	\$ 119,065	337.54%
07/01/92	457,978	840,840	382,862	54.47%	136,870	279.73%
07/01/93	501,741	878,693	376,952	57.10%	135,505	278.18%
07/01/94	514,138	920,470	406,332	55.86%	155,671	261.02%
07/01/95	554,960	983,249	428,289	56.44%	163,824	261.43%
07/01/96	612,852	1,055,063	442,211	58.09%	171,060	258.51%
07/01/97	673,209	1,173,412	500,203	57.37%	185,229	270.05%

### Minneapolis Teachers' Retirement Fund Schedule of Employer Contributions

(dollars in thousands)

July 1, 1997

	Actuarially	7				
Year	Required	Actual		Annual		
Ended	Contribution	Covered	Actual Member	Required	Actual Employer	Percentage
June 30	Rate	Payroll	Contributions	Contributions	Contributions*	Contributed
	(A)	(B)	(C)	[(A)*(B)]-(C)		
1991	30.40%	\$ 119,065	\$ 9,337	\$ 26,859	\$ 12,358	46.01%
1992	30.55%	136,870	10,307	31,507	13,638	43.29%
1993	27.43%	135,505	10,713	26,456	13,711	51.83%
1994	25.83%	155,671	11,507	28,703	16,355	56.98%
1995	25.03%	163,824	10,470	30,535	21,194	69.41%
1996	25.18%	171,060	11,294	31,779	23,085	72.64%
1997	25.15%	185,229	11,697	34,888	24,021	68.85%

<sup>\*</sup>Includes contributions from other sources (if applicable)