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

**July 1, 1997**



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Actuaries & Consultants

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November 7, 1997

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

**RE: Duluth Teachers' Retirement Fund**

Commission Members:

Pursuant to the terms of our Actuarial Services Contract, we have performed an actuarial valuation of the Fund as of July 1, 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 Duluth Teachers' Retirement Fund Association.

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

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.

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## **Duluth Teachers' Retirement Fund**

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# Duluth Teachers' Retirement Fund

## Report Highlights

(dollars in thousands)

	07/01/96 Valuation	07/01/97 Valuation
<b>A. CONTRIBUTIONS (Table 11)</b>		
1. Statutory Contributions - Chapter 354A % of Payroll	11.29%	12.30%
2. Required Contributions - Chapter 356 % of Payroll	13.60%	12.87%
3. Sufficiency (Deficiency): (A.1. - A.2.)	-2.31%	-0.57%
<b>B. FUNDING RATIOS</b>		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$157,007	\$170,059
b. Current Benefit Obligations (Table 8)	\$177,291	\$186,992
c. Funding Ratio: (a/b)	88.56%	90.94%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$157,007	\$170,059
b. Actuarial Accrued Liability (Table 9)	\$189,518	\$197,820
c. Funding Ratio: (a/b)	82.85%	85.97%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$207,788	\$223,676
b. Current and Expected Future Benefit Obligations	\$227,968	\$231,551
c. Funding Ratio: (a/b)	91.15%	96.60%
<b>C. PLAN PARTICIPANTS</b>		
1. Active Members		
a. Number (Table 3)	1,415	1,416
b. Projected Annual Earnings	\$46,770	\$47,923
c. Average Annual Earnings (Actual \$)	\$33,053	\$33,844
d. Average Age	44.3	44.0
e. Average Service	11.2	11.2
2. Others		
a. Service Retirements (Table 4)	805	823
b. Survivors (Table 5)	47	49
c. Disability Retirements (Table 6)	8	7
d. Deferred Retirements (Table 7)	150	151
e. Terminated Other Non-vested (Table 7)	609	588
f. Total	1,619	1,618

## **Duluth Teachers' Retirement Fund**

### ***Commentary***

#### ***Purpose***

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

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

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

- ° The Accrued Benefit Funding Ratio is a measure of current funding status and, when viewed over a period of years, presents a view of the funding progress. It is based upon benefits which have been earned by service to the valuation date. This year's ratio is 90.94%. The corresponding ratio for the prior year was 88.56%.
- ° 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 85.97%, which is an increase from the 1996 value of 82.85%.
- ° The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 96.60% shows that the current statutory contributions are inadequate.

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

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

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines E1 to E6. 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.

Reference to the Minnesota Post Retirement Investment Fund (MPRIF) is for purposes of consistency. This fund does not participate in the MPRIF and therefore, where the term MPRIF appears, there will be a value of zero.

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

An actuarial balance sheet provides a method for evaluating current and future levels of funding.

The Current Benefit Obligation used to measure current funding levels is calculated 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.

### ***GASB Disclosure***

Disclosure of the Current Benefit Obligation amounts used to be required by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 has been superseded by Statement No. 25. Tables 14 and 15 of this report have been added to fulfill the new requirements of Statement No. 25. For this transition year only, disclosure in accordance with Statement No. 5 is shown below as of JULY 1, 1997:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	\$104,667,000
Current Employees	
Accumulated employee contributions including allocated investment income	\$33,422,000
Employer-financed vested	45,742,000
Employer-financed nonvested	<u>3,161,000</u>
Total Pension Benefit Obligation	\$186,992,000
Net Assets Available for Benefits at Cost	\$155,368,000
Total Benefit Obligation less Assets	\$31,624,000
Funded Ratio	83.09%

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

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

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

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

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

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

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

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

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

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

- ° Normal costs based on the Entry Age Normal Actuarial Cost Method.
- ° A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.
- ° An Allowance for Expenses.

Table 11 shows the Plan has a contribution deficiency since the Statutory Contribution Rate is 12.30% compared to the Required Contribution Rate of 12.87%.

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

Assumptions were changed this year as summarized below:

	ASSUMPTION CHANGED <u>FROM</u>	<u>TO</u>
Salary Increase:	Level 6.5%	Graded from 8.0% to 5.25%
Payroll Growth:	6.5%	5.0%
Retirement Age		
Rule of 90 eligibles:	30%	40%
Others:	Single age	Graded rates
Annuitant Mortality:	1971 GAM M setback 8 years	M: 1983 GAM M (-2) F: 1983 GAM F (-1)
Active Mortality:	1971 GAM M setback 8 years	M: 1983 GAM M (-4) F: 1983 GAM F (-3)
Disability Mortality:	1971 GAM M setback 8 years	1977 RRB

Other decrements and optional form election assumptions were moderately adjusted.

### ***Changes in Plan Provisions***

This valuation reflects the new plan provisions which became effective July 1, 1997. Substantive provisions of that legislation included:

1. Increase in the benefit rate factors by 0.07% in all of these plans.
2. Normal Retirement Age capped at 66 for employees first hired after June 30, 1989 (New Law, Tier II).
3. Direct state funding of \$486,000 per year added.

TABLE 1

## Duluth Teachers' Retirement Fund

**Statement of Plan Net Assets***(dollars in thousands)*

JULY 1, 1997

	<u>Market Value</u>	<u>Cost Value</u>
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-term Securities	\$59,778	\$59,778
2. Fixed Income	71,609	71,005
3. Equity	123,645	80,175
4. Real Estate	3,014	3,014
5. Equity in MPRIF	0	0
6. Other	490	490
<b>Subtotal</b>	<u>\$258,536</u>	<u>\$214,462</u>
B. ASSETS RECEIVABLE	8,300	8,300
C. LIABILITIES	(67,394)	(67,394)
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	0	0
2. Member Reserves	22,339	22,339
3. Other Non-MPRIF Reserves	177,103	133,029
4. Total Assets Available for Benefits	<u>\$199,442</u>	<u>\$155,368</u>
<hr/>		
E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$155,368
2. Market Value (D5)	\$199,442	
3. Cost Value (D5)	<u>155,368</u>	
4. Market Over Cost: (E2-E3)	\$44,074	
5. One-third of Market Over Cost: (E4)/3		<u>14,691</u>
6. Actuarial Value of Assets (E1+E5) (Same as "Current Assets")		<u>\$170,059</u>

TABLE 2

## Duluth Teachers' Retirement Fund

**Statement of Change In Plan Net Assets***(dollars in thousands)*

YEAR ENDING JUNE 30, 1997

	<u>Market Value</u>	<u>Cost Value</u>
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$174,347	\$148,337
B. ADDITIONS		
1. Member Contributions	\$2,644	\$2,644
2. Employer Contributions	2,708	2,708
3. Contributions From Other Sources	0	0
4. MPRIF Income	0	0
5. Net Investment Income		
a. Interest and Dividends	5,379	5,379
b. Net Realized Gain (Loss)	6,292	6,292
c. Net Change in Unrealized Gain (Loss)	18,065	0
d. Investment Expenses	(900)	(900)
<b>Net Subtotal</b>	28,836	10,771
6. Other	19	19
7. Total Additions	<u>\$34,207</u>	<u>\$16,143</u>
C. OPERATING EXPENSES		
1. Service Retirements paid from MPRIF	\$0	\$0
2. Service Retirements paid from plan assets	8,156	8,156
2. Disability Benefits	90	90
3. Survivor Benefits	432	432
4. Refunds	123	123
6. Administrative Expenses	311	311
7. Other	0	0
8. Total Disbursements	<u>\$9,112</u>	<u>\$9,112</u>
D. OTHER CHANGES IN RESERVES	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	<u><u>\$199,442</u></u>	<u><u>\$155,368</u></u>

TABLE 3

## DULUTH TEACHERS' RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1997

Age	Years of Service								ALL
	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	45	4	0	0	0	0	0	0	49
25-29	77	46	3	0	0	0	0	0	126
30-34	37	34	41	9	0	0	0	0	121
35-39	24	30	34	43	0	0	0	0	131
40-44	24	45	38	64	34	5	0	0	210
45-49	21	42	56	76	33	59	25	0	312
50-54	18	19	15	37	31	40	81	29	270
55-59	5	10	13	12	22	23	39	25	149
60-64	3	4	6	6	8	8	6	2	43
65+	0	1	0	2	0	1	0	1	5
ALL	254	235	206	249	128	136	151	57	1,416

AVERAGE ANNUAL EARNINGS

Age	Years of Service								ALL
	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	3,120	22,618	0	0	0	0	0	0	4,712
25-29	2,889	21,297	28,605	0	0	0	0	0	10,222
30-34	5,064	23,171	28,725	39,861	0	0	0	0	20,758
35-39	4,712	21,982	29,004	38,588	0	0	0	0	26,091
40-44	3,315	24,483	31,606	42,545	46,973	50,023	0	0	33,107
45-49	3,154	20,129	32,747	44,601	43,875	45,408	51,676	0	37,032
50-54	4,332	16,766	41,480	46,121	43,702	47,286	48,862	48,725	42,008
55-59	2,598	20,356	29,750	42,639	43,472	46,027	49,370	50,376	42,381
60-64	1,314	18,492	35,090	36,800	36,150	45,023	50,319	48,378	36,216
65+	0	3,990	0	40,991	0	46,582	0	47,828	36,076
ALL	3,559	21,552	31,573	42,777	44,104	46,221	49,517	49,421	32,026

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

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
All	903	5,064	6,504	10,651	5,645	6,286	7,477	2,816	45,348

TABLE 4

**DULUTH TEACHERS' RETIREMENT FUND****SERVICE RETIREMENTS AS OF JUNE 30, 1997**

Age	YEARS RETIRED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	2	0	0	0	0	0	2
50-54	1	1	1	0	0	0	0	3
55-59	33	40	0	0	0	0	0	73
60-64	20	103	52	0	0	0	0	175
65-69	1	45	84	66	1	0	0	197
70-74	1	3	35	86	22	0	0	147
75-79	1	0	2	39	39	10	2	93
80-84	0	0	0	2	26	29	3	60
85+	1	0	0	0	4	39	37	81
ALL	58	194	174	193	92	78	42	831

**AVERAGE ANNUAL BENEFIT**

Age	YEARS RETIRED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	6,652	0	0	0	0	0	6,652
50-54	1,191	3,700	13,377	0	0	0	0	6,089
55-59	20,677	17,679	0	0	0	0	0	19,034
60-64	13,843	15,826	11,866	0	0	0	0	14,423
65-69	4,262	11,598	10,028	9,237	4,335	0	0	10,064
70-74	7,679	17,942	10,347	8,916	4,600	0	0	8,787
75-79	25,032	0	3,347	7,506	7,204	4,388	6,182	7,115
80-84	0	0	0	4,701	6,677	6,656	3,678	6,451
85+	21,093	0	0	0	8,132	7,822	8,429	8,278
ALL	17,560	15,103	10,584	8,697	6,442	6,948	7,983	10,757

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

Age	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
All	1,018	2,929	1,841	1,678	592	541	335	8,939

TABLE 5

## DULUTH TEACHERS' RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1997

Age	YEARS SINCE DEATH							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	1	0	0	0	1
50-54	0	0	0	0	0	0	0	0
55-59	0	1	2	0	0	0	0	3
60-64	0	2	3	1	0	0	0	6
65-69	0	1	3	4	1	0	0	9
70-74	0	1	1	6	3	1	0	12
75-79	0	0	0	1	5	1	1	8
80-84	0	0	0	0	3	0	0	3
85+	0	0	0	0	1	5	2	8
ALL	0	5	9	13	13	7	3	50

AVERAGE ANNUAL BENEFIT

Age	YEARS SINCE DEATH							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	3,256	0	0	0	3,256
50-54	0	0	0	0	0	0	0	0
55-59	0	18,165	16,509	0	0	0	0	17,061
60-64	0	8,367	15,645	6,329	0	0	0	11,666
65-69	0	13,609	7,639	9,280	8,924	0	0	9,174
70-74	0	1,211	14,823	13,880	10,130	3,868	0	11,131
75-79	0	0	0	12,881	7,233	4,626	6,194	7,483
80-84	0	0	0	0	8,312	0	0	8,312
85+	0	0	0	0	3,072	7,824	6,131	6,807
ALL	0	9,944	13,077	10,990	7,961	6,802	6,152	9,597

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS SINCE DEATH

Age	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
All	0	49,720	117,693	142,870	103,493	47,614	18,456	479,850

TABLE 6

**DULUTH TEACHERS' RETIREMENT FUND****DISABILITY RETIREMENTS AS OF JUNE 30, 1997**

Age	YEARS DISABLED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	3	1	1	0	0	0	5
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	1	0	1
65-69	0	1	0	0	0	0	0	1
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	4	1	1	0	1	0	7

**AVERAGE ANNUAL BENEFIT**

Age	YEARS DISABLED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	12,257	2,075	8,624	0	0	0	9,494
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	5,216	0	5,216
65-69	0	15,686	0	0	0	0	0	15,686
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	13,114	2,075	8,624	0	5,216	0	9,767

**TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED**

Age	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
All	0	52,456	2,075	8,624	0	5,216	0	68,369

TABLE 7

## Duluth Teachers' Retirement Fund

*Reconciliation Of Members*

	Actives	Terminated	
		Deferred Retirement	Other Non-Vested
A. ON JUNE 30, 1996	1,415	150	609
B. ADDITIONS	195	131	0
C. DELETIONS			
1. Service Retirement	(42)	(5)	0
2. Disability	(1)	0	0
3. Death	0	0	0
4. Terminated - Deferred	(131)	0	0
5. Terminated - Refund	(20)	(157)	0
6. Terminated - Other Non-Vested	0	0	0
7. Returned as Active	0	0	0
8. Transferred to Other Fund	0	0	0
D. DATA ADJUSTMENTS	0	32	(21)
Vested	1,027		
Non-Vested	389		
E. TOTAL ON JUNE 30, 1997	1,416	151	588

	Recipients		
	Retirement Annuitants	Disabled	Survivors
A. ON JUNE 30, 1996	805	8	47
B. ADDITIONS	54	1	5
C. DELETIONS			
1. Service Retirement	0	(2)	0
2. Death	(32)	0	(3)
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	0
D. DATA ADJUSTMENTS	(4)	0	0
E. TOTAL ON JUNE 30, 1997	823	7	49

TABLE 8

## Duluth Teachers' Retirement Fund

**Actuarial Balance Sheet***(dollars in thousands)*

JULY 1, 1997

A.	CURRENT ASSETS (TABLE 1, E6)			\$170,059
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			\$19,886
	2. Present Value of Future Normal Costs			33,731
	3. Total Expected Future Assets			<u>\$53,617</u>
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			<u>\$223,676</u>
D.	CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>	<u>Total</u>
	1. Benefit Recipients			
	a. Retirement Annuities		\$95,258	\$95,258
	b. Disability Benefits		631	631
	c. Surviving Spouse and Child Benefits		4,684	4,684
	2. Deferred Retirements with Future Augmentation		3,743	3,743
	3. Former Members without Vested Rights		351	351
	4. Active Members			
	a. Retirement Annuities	162	75,641	75,803
	b. Disability Benefits	1,757	0	1,757
	c. Survivor's Benefits	1,222	0	1,222
	d. Deferred Retirements	20	3,120	3,140
	e. Refund Liability Due to Death or Withdrawal	0	403	403
	5. Total Current Benefit Obligations	<u>\$3,161</u>	<u>\$183,831</u>	<u>\$186,992</u>
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			<u>\$44,559</u>
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			<u>\$231,551</u>
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			\$16,933
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			\$7,875

TABLE 9

## Duluth Teachers' Retirement Fund

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

JULY 1, 1997

	Actuarial Present Value of Projected Benefits (1)	Actuarial Present Value of Future Normal Costs (2)	Actuarial Accrued Liability (3)=(1)-(2)
<b>A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)</b>			
1. Active Members			
a. Retirement Annuities	\$116,753	\$27,564	\$89,189
b. Disability Benefits	2,810	992	1,818
c. Survivor's Benefit	1,898	689	1,209
d. Deferred Retirements	4,601	3,591	1,010
e. Refunds Due to Death or Withdrawal	821	895	(74)
f. Total	<u>\$126,883</u>	<u>\$33,731</u>	<u>\$93,152</u>
2. Deferred Retirements With Future Augmentation	3,743		3,743
3. Former Members Without Vested Rights	351		351
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	<u>100,574</u>		<u>100,574</u>
6. Total	<u>\$231,551</u>	<u>\$33,731</u>	<u>\$197,820</u>
<b>B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)</b>			
1. AAL (A6)			\$197,820
2. Current Assets (Table 1, E6)			<u>170,059</u>
3. UAAL (B1-B2)			<u>\$27,761</u>
<b>C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE</b>			
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020			\$752,944
2. Supplemental Contribution Rate (B3/C1)			3.69%

TABLE 10

## Duluth Teachers' Retirement Fund

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

YEAR ENDING JUNE 30, 1997

A. UAAL AT BEGINNING OF YEAR	\$32,511
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$4,621
2. Contribution	(5,352)
3. Interest on A, B1 and B2	<u>2,732</u>
4. Total (B1+B2+B3)	<u>\$2,001</u>
C. EXPECTED UAAL AT END OF YEAR (A+B4)	\$34,512
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	(\$2,683)
2. Investment Return*	64
3. MPRIF Mortality	0
4. Mortality of Other Benefit Recipients	(1,084)
5. Other Items	<u>5,548</u>
6. Total	<u>\$1,845</u>
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	\$36,357
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	3,336
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	<u>(11,932)</u>
H. UAAL AT END OF YEAR (E+F+G)	<u><u>\$27,761</u></u>

\* Gross asset gain of \$3,606 offset by \$3,670 of excess assets allocated for 1/1/98  
'excess earnings' COLA to existing retirees and beneficiaries.

TABLE 11

## Duluth Teachers' Retirement Fund

**Determination Of Contribution Sufficiency**  
*(dollars in thousands)*

JULY 1, 1997

	<u>Percent of Payroll</u>	<u>Dollar Amount</u>
<b>A. STATUTORY CONTRIBUTIONS - CHAPTER 354A</b>		
1. Employee Contributions	5.50%	\$2,636
2. Employer Contributions	5.79%	2,775
3. Additional State Contribution*	1.01%	486
4. Total	<u>12.30%</u>	<u>\$5,897</u>
 <b>B. REQUIRED CONTRIBUTIONS - CHAPTER 356</b>		
1. Normal Cost		
a. Retirement Benefits	6.99%	\$3,348
b. Disability benefits	0.24%	115
c. Survivors	0.17%	83
d. Deferred Retirement Benefits	0.92%	440
e. Refunds Due to Death or Withdrawal	0.19%	91
f. Total	<u>8.51%</u>	<u>\$4,077</u>
 2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	3.69%	1,768
 3. Allowance for Expenses	<u>0.67%</u>	<u>321</u>
4. Total	<u>12.87%</u>	<u>\$6,166</u>
 <b>C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]</b>	-0.57%	(\$269)

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1997 is \$47,923.

\* Additional State Contribution is a level dollar amount which implies a decreasing percentage of payroll.

## Duluth Teachers' Retirement Fund

***Summary of Actuarial Assumptions and Methods***

<b><i>Interest:</i></b>	<b>Pre-Retirement:</b> 8.5% per annum <b>Post-Retirement:</b> 8.5% per annum
<b><i>Salary Increases:</i></b>	Graded from 8.0% to 5.25%. The salary assumption was 6.5% last year. The graded rates consist of a 5% inflation component and varying levels of merit and productivity increases.
<b><i>Mortality:</i></b>	<b>Pre-Retirement:</b> Male - 1983 GAM (Males -4) Female - 1983 GAM (Females -3) <b>Post-Retirement:</b> Male - 1983 GAM (Males -2) Female - 1983 GAM (Females -1) <b>Post-Disability:</b> Male - 1977 RRB Female - 1977 RRB  These assumptions represent a change from the prior year's assumption.
<b><i>Retirement Age:</i></b>	Age-related from 15% to 80% for the old plan and age-related from 10% to 80% for the new plan. In addition, 40% of the Members are assumed to retire each year that they are eligible for Rule of 90.  These assumptions represent a change from the prior year's assumption.
<b><i>Separation:</i></b>	Graded rates shown in rate table. Female rates were slightly higher last year.
<b><i>Disability:</i></b>	Rates as shown in rate table. Rates were higher last year.
<b><i>Expenses:</i></b>	Prior year administrative expenses expressed as percentage of prior year payroll.

**TABLE 12**

(Continued)

<b><i>Return of Contributions:</i></b>	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.				
<b><i>Family Composition:</i></b>	80% of Members are assumed to be married. Female is three years younger than male.				
<b><i>Social Security:</i></b>	N/A				
<b><i>Benefit Increases After Retirement:</i></b>	N/A				
<b><i>Special Consideration:</i></b>	<p>Annual 2% increase for annuitants is accounted for by using a 6.5% post-retirement interest rate. Members in the Old Plan are assumed to receive their retirement benefits from the New Plan. Members who terminated under the Old Plan are assumed to take refund under the New Plan.</p> <p>Married Members assumed to elect subsidized joint and survivor form of annuity as follows:</p> <table> <tr> <td><b>Males -</b></td><td>30% elect 50% J&amp;S option 55% elect 100% J&amp;S option</td></tr> <tr> <td><b>Females -</b></td><td>30% elect 50% J&amp;S option 20% elect 100% J&amp;S option</td></tr> </table> <p>The prior year's rates were lower.</p>	<b>Males -</b>	30% elect 50% J&S option 55% elect 100% J&S option	<b>Females -</b>	30% elect 50% J&S option 20% elect 100% J&S option
<b>Males -</b>	30% elect 50% J&S option 55% elect 100% J&S option				
<b>Females -</b>	30% elect 50% J&S option 20% elect 100% J&S option				
<b><i>Actuarial Cost Method:</i></b>	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.				
<b><i>Asset Valuation Method:</i></b>	Cost Value plus one-third Unrealized Gains or Losses.				
<b><i>Payment on the Unfunded Actuarial Accrued Liability:</i></b>	A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 5% per annum.				

**TABLE 12**  
(Continued)

**Duluth Teachers' Retirement Fund**

***Summary of Actuarial Assumptions and Methods***

**Separation Expressed as Number of Occurrences Per 10,000:**

<u>Age</u>	<u>Death</u>		<u>Withdrawal</u>		<u>Disability</u>		<u>Retirement</u>		<u>Salary Increases</u>
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Old</u>	<u>New</u>	
20	3	2	2,000	1,500	4	4	0	0	8.00%
21	3	2	1,931	1,360	4	4	0	0	8.00
22	4	2	1,731	1,220	4	4	0	0	8.00
23	4	2	1,532	1,080	5	5	0	0	7.90
24	4	2	1,332	940	5	5	0	0	7.80
25	4	2	1,132	800	5	5	0	0	7.70
26	4	2	932	660	5	5	0	0	7.60
27	4	2	732	520	5	5	0	0	7.50
28	4	3	703	500	5	5	0	0	7.40
29	5	3	673	480	5	5	0	0	7.30
30	5	3	643	460	6	6	0	0	7.20
31	5	3	612	440	6	6	0	0	7.10
32	5	3	582	420	6	6	0	0	7.00
33	6	3	552	400	6	6	0	0	6.90
34	6	4	522	380	6	6	0	0	6.80
35	6	4	491	360	6	6	0	0	6.70
36	7	4	461	340	7	7	0	0	6.60
37	7	4	430	320	7	7	0	0	6.50
38	8	5	409	300	8	8	0	0	6.40
39	9	5	389	280	8	8	0	0	6.30
40	9	5	368	260	8	8	0	0	6.20
41	10	6	347	240	9	9	0	0	6.10
42	10	6	325	220	9	9	0	0	6.00
43	11	7	304	210	10	10	0	0	5.90
44	12	7	282	200	10	10	0	0	5.80
45	14	8	260	190	11	11	0	0	5.70
46	15	8	237	180	12	12	0	0	5.60
47	17	9	214	170	13	13	0	0	5.50
48	19	10	191	160	14	14	0	0	5.45
49	22	11	167	150	16	16	0	0	5.40

**TABLE 12**  
(Continued)

**Duluth Teachers' Retirement Fund**

***Summary of Actuarial Assumptions and Methods***

**Separation Expressed as Number of Occurrences Per 10,000:**

<b>Age</b>	<b><u>Death</u></b>		<b><u>Withdrawal</u></b>		<b><u>Disability</u></b>		<b><u>Retirement</u></b>		<b>Salary</b>
	<b><u>Male</u></b>	<b><u>Female</u></b>	<b><u>Male</u></b>	<b><u>Female</u></b>	<b><u>Male</u></b>	<b><u>Female</u></b>	<b><u>Old</u></b>	<b><u>New</u></b>	<b><u>Increases</u></b>
50	25	12	143	140	17	17	0	0	5.35%
51	28	14	118	118	19	19	0	0	5.30
52	31	15	92	92	22	22	0	0	5.25
53	35	16	67	67	26	26	0	0	5.25
54	39	18	40	40	30	30	0	0	5.25
55	43	19	13	13	36	36	1,500	1,000	5.25
56	48	21	0	0	41	41	1,500	1,000	5.25
57	52	23	0	0	47	47	1,500	1,000	5.25
58	57	25	0	0	52	52	1,500	1,000	5.25
59	61	28	0	0	58	58	1,500	1,000	5.25
60	66	31	0	0	63	63	1,500	1,000	5.25
61	71	34	0	0	69	69	4,000	2,000	5.25
62	77	38	0	0	76	76	4,000	2,000	5.25
63	84	42	0	0	84	84	4,000	2,000	5.25
64	92	47	0	0	93	93	4,000	2,000	5.25
65	101	52	0	0	0	0	4,000	2,000	5.25
66	111	58	0	0	0	0	5,000	4,000	5.25
67	124	64	0	0	0	0	5,000	4,000	5.25
68	139	71	0	0	0	0	5,000	4,000	5.25
69	156	78	0	0	0	0	5,000	4,000	5.25
70	176	87	0	0	0	0	5,000	4,000	5.25

TABLE 14

**Duluth Teachers' Retirement Fund**  
**SCHEDULE OF FUNDING PROGRESS**  
(dollars in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (A)	Actuarial Accrued Liability (AAL) (B)	Unfunded AAL (UAAL) (B - A)	Funded Ratio (A)/(B)	Actual Covered Payroll (Previous FY) (C)	UAAL as % of Covered Payroll (B - A) / (C)
07/01/91	105,087	117,582	12,495	89.37%	42,297	29.54%
07/01/92	116,492	124,140	7,648	93.84%	42,884	17.83%
07/01/93	130,856	132,700	1,844	98.61%	43,282	4.26%
07/01/94	133,632	137,042	3,410	97.51%	43,109	7.91%
07/01/95	142,852	173,965	31,113	82.12%	46,528	66.87%
07/01/96	157,007	189,518	32,511	82.85%	44,870	72.46%
07/01/97	170,059	197,820	27,761	85.97%	46,770	59.36%

TABLE 15

**Duluth Teachers' Retirement Fund**  
**SCHEDULE OF EMPLOYER CONTRIBUTIONS**  
(dollars in thousands)

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
1991	10.70%	42,297	2,043	2,483	2,449	98.63%
1992	11.09%	42,884	2,124	2,632	2,483	94.34%
1993	11.42%	43,282	2,126	2,817	2,506	88.96%
1994	10.21%	43,109	2,230	2,171	2,496	114.97%
1995	10.36%	46,528	2,144	2,676	2,694	100.67%
1996	13.23%	44,870	2,570	3,366	2,598	77.18%
1997	13.60%	46,770	2,644	3,717	2,708	72.85%

\* Includes contributions from other sources (if applicable).

**TABLE 3A  
OLD**

**DULUTH TEACHERS' RETIREMENT FUND**

**ACTIVE MEMBERS AS OF JUNE 30, 1997**

Age	Years of Service								ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0
40-44	0	0	0	4	33	5	0	0	42
45-49	0	0	1	3	25	59	25	0	113
50-54	0	0	0	4	29	40	81	29	183
55-59	1	0	0	2	16	23	39	25	106
60-64	1	0	1	1	8	8	6	2	27
65+	0	0	0	0	0	1	0	1	2
ALL	2	0	2	14	111	136	151	57	473

**AVERAGE ANNUAL EARNINGS**

Age	Years of Service								ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0
40-44	0	0	0	45,658	47,010	50,023	0	0	47,240
45-49	0	0	17,182	41,952	43,796	45,408	51,676	0	46,097
50-54	0	0	0	39,729	43,280	47,286	48,862	48,725	47,412
55-59	3,285	0	0	47,004	44,316	46,027	49,370	50,376	47,640
60-64	2,291	0	1,262	41,750	36,150	45,023	50,319	48,378	40,495
65+	0	0	0	0	0	46,582	0	47,828	47,205
ALL	2,788	0	9,222	43,083	44,141	46,221	49,517	49,421	46,737

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

Age	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	ALL
All	5	0	18	603	4,899	6,286	7,477	2,816	22,106

**TABLE 4A**  
**OLD**

**DULUTH TEACHERS' RETIREMENT FUND**

**SERVICE RETIREMENTS AS OF JUNE 30, 1997**

Age	YEARS RETIRED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	1	0	0	0	0	0	1
50-54	0	0	1	0	0	0	0	1
55-59	15	17	0	0	0	0	0	32
60-64	8	50	28	0	0	0	0	86
65-69	0	8	19	23	1	0	0	51
70-74	0	0	8	45	22	0	0	75
75-79	0	0	0	25	37	10	2	74
80-84	0	0	0	2	26	29	3	60
85+	1	0	0	0	4	39	37	81
ALL	24	76	56	95	90	78	42	461

**AVERAGE ANNUAL BENEFIT**

Age	YEARS RETIRED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	9,020	0	0	0	0	0	9,020
50-54	0	0	13,377	0	0	0	0	13,377
55-59	16,479	16,546	0	0	0	0	0	16,515
60-64	7,733	14,137	10,318	0	0	0	0	12,298
65-69	0	7,864	8,642	5,947	4,335	0	0	7,220
70-74	0	0	7,646	7,166	4,600	0	0	6,465
75-79	0	0	0	6,799	6,851	4,388	6,182	6,483
80-84	0	0	0	4,701	6,677	6,656	3,678	6,451
85+	21,093	0	0	0	8,132	7,822	8,429	8,278
ALL	13,756	13,948	9,422	6,722	6,280	6,948	7,983	8,674

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

Age	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
All	330	1,060	527	638	565	541	335	3,998

**TABLE 5A  
OLD**

**DULUTH TEACHERS' RETIREMENT FUND**

**SURVIVORS AS OF JUNE 30, 1997**

<u>Age</u>	<u>YEARS SINCE DEATH</u>							<u>ALL</u>
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	1	0	0	0	1
50-54	0	0	0	0	0	0	0	0
55-59	0	1	1	0	0	0	0	2
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	2	1	0	0	3
70-74	0	0	0	1	3	1	0	5
75-79	0	0	0	0	5	1	1	7
80-84	0	0	0	0	3	0	0	3
85+	0	0	0	0	1	5	2	8
ALL	0	1	1	4	13	7	3	29

**AVERAGE ANNUAL BENEFIT**

<u>Age</u>	<u>YEARS SINCE DEATH</u>							<u>ALL</u>
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	3,256	0	0	0	3,256
50-54	0	0	0	0	0	0	0	0
55-59	0	18,165	12,294	0	0	0	0	15,230
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	7,282	8,924	0	0	7,829
70-74	0	0	0	18,576	10,130	3,868	0	10,567
75-79	0	0	0	0	7,233	4,626	6,194	6,712
80-84	0	0	0	0	8,312	0	0	8,312
85+	0	0	0	0	3,072	7,824	6,131	6,807
ALL	0	18,165	12,294	9,099	7,961	6,802	6,152	8,152

**TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH**

<u>Age</u>	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
All	0	18,165	12,294	36,396	103,493	47,614	18,456	236,408

**TABLE 6A  
OLD**

**DULUTH TEACHERS' RETIREMENT FUND**

**DISABILITY RETIREMENTS AS OF JUNE 30, 1997**

Age	YEARS DISABLED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	1	0	0	0	1
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	1	0	1
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	1	0	1	0	2

**AVERAGE ANNUAL BENEFIT**

Age	YEARS DISABLED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	8,624	0	0	0	8,624
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	5,216	0	5,216
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	8,624	0	5,216	0	6,920

**TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED**

Age	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
All	0	0	0	8,624	0	5,216	0	13,840

**TABLE 11A  
OLD**

**Duluth Teachers' Retirement Fund**

***Determination Of Contribution Sufficiency***  
*(dollars in thousands)*

JULY 1, 1997

	<u>Percent of Payroll</u>	<u>Dollar Amount</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 353		
1. Employee Contributions	5.50%	\$1,282
2. Employer Contributions	5.79%	1,349
3. Total	<u>11.29%</u>	<u>\$2,631</u>
 B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	6.43%	\$1,498
b. Disability benefits	0.20%	46
c. Survivors	0.16%	37
d. Deferred Retirement Benefits	1.16%	270
e. Refunds Due to Death or Withdrawal	<u>0.17%</u>	<u>39</u>
f. Total	<u>8.12%</u>	<u>\$1,890</u>

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1997 is \$23,301.

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

**GENERAL**

<b><i>Eligibility:</i></b>	A licensed teacher who is employed by the Duluth Public Schools, and eligible licensed staff at Lake Superior College, who have elected to retain their membership in the DTRFA. Also includes any employees of the Retirement Fund and certain part-time employees licensed by the State Department of Education. Employees in the Old Plan are those first hired before July 1, 1981.
<b><i>Contributions:</i></b>	
<b><i>Member:</i></b>	5.5% of salary.
<b><i>Employer:</i></b>	5.79% of salary. (In addition, the State will contribute \$486,000 to the DTRFA plans each year on October 1.)
<b><i>Credited Service:</i></b>	Earned while employed in a covered position and employee contributions are deducted. Credit is granted for service less than a legal school year on a pro rata basis.
<b><i>Salary:</i></b>	Annual contract salary.
<b><i>Average Salary:</i></b>	Average of the five highest years of annual salary.

**RETIREMENT**

***Normal Retirement Benefit:***

<b><i>Eligibility:</i></b>	Age 60 and one year of Credited Service.
----------------------------	--

**TABLE 13A**  
**OLD**  
(Continued)

*Amount:* The greater of  
1.45% of Average Salary for each year of Credited Service  
or  
the New Plan Benefit.

***Early Retirement Benefit:***

*Eligibility:* Age 55 and five years of Credited Service.  
Rule of 90: Age plus Credited Service totals 90.

*Amount:* The greater of  
1.45% of Average Salary for each year of Credited  
Service with reduction of 0.25% for each month the  
Member is under age 60. No reduction if age plus years  
of Credited Service totals 90.  
or  
the New Plan Benefit.

*Form of Payment:* Life annuity. Actuarially equivalent options are:  
  
5, 10, 15 or 20 year certain and life.  
50% or 100% joint and survivor with bounce back  
feature without additional reduction.  
Other equivalent options approved by the Board.

*Benefit Increases:* Annual Cost-of-Living Adjustment (COLA):  
Increase all benefits by 2% each January 1. An additional  
increase will be allowed when the 5-year average rate of  
return of the fund exceeds the interest rate assumption of  
the plan, currently 8.5%. To be eligible for a COLA, a  
retiree or beneficiary must have received a payment for at  
least 12 months as of the adjustment date.

Members retired under laws in effect before June 30, 1971 receive an additional lump-sum payment each year. In 1989 this lump-sum payment is the greater of \$25 times each full year of Credited Service or the difference between \$400 times each full year of Credited Service and the sum of the benefits paid from any Minnesota public pension plan plus cash payments from the Social Security Administration for the 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:*

<i>Eligibility:</i>	Totally and permanently disabled as a teacher before the age of 60 with five years of Credited Service.
<i>Amount:</i>	Normal Retirement Benefit based on Credited Service and Average Salary at disability date without reduction for early commencement. Amount is reduced for Workers' Compensation. Payment stops at age 60 or earlier if disability ceases or death occurs.
<i>Form of Payment:</i>	Same as for retirement.
<i>Benefit Increases:</i>	Same as for retirement.

## DEATH

### *Return of Contributions I:*

<i>Eligibility:</i>	Death while active.
<i>Amount:</i>	Two times regular contributions accumulated with 5% interest if death occurred before May 16, 1989 or 6% interest if death occurred on or after May 16, 1989.

***Return of Contributions II:***

<i>Eligibility:</i>	Death of Member who terminated employment after 10 years of service.
<i>Amount:</i>	Regular contributions accumulated with 5% interest if death occurred before May 16, 1989 or 6% interest if death occurred on or after May 16, 1989.

***Return of Contributions III:***

<i>Eligibility:</i>	Death of a retired or disabled Member whose benefits have commenced in the form of a life annuity or the death of a survivor of a retired or disabled Member under a joint and survivor option.
<i>Amount:</i>	Excess of regular contributions accumulated with 5% interest if death occurred before May 16, 1989 or 6% interest if death occurred on or after May 16, 1989 over total benefits paid.

***Surviving Spouse Benefit***

***Optional Annuity I***

<i>Eligibility:</i>	Death of active Member with 10 years of Credited Service.
<i>Amount:</i>	In lieu of Return of Contributions I, an annuity to surviving spouse equivalent to 120% of the value of what would have been refunded.

***Optional Annuity II***

<i>Eligibility:</i>	Death of active Member who is age 50 with 10 years of Credited Service. If the Member dies before age 55, benefits commence when Member would have been age 55.
<i>Amount:</i>	In lieu of Return of Contributions I or Surviving Spouse Optional Annuity I, spouse receives survivor portion of the joint and 100% contingent annuity the Member could have elected if terminated.

**TERMINATION**

***Refund of Employee Contributions:***

<i>Eligibility:</i>	Termination from teaching service.
<i>Amount:</i>	Member's contributions with 5% interest compounded annually if termination occurred before May 16, 1989 and 6% interest if termination occurred on or after May 16, 1989. A deferred annuity may be elected in lieu of a refund if the Member has 10 years of Credited Service.

***Deferred Annuity:***

<i>Eligibility:</i>	Ten years of Credited Service.
<i>Amount:</i>	Benefit computed under law in effect at termination and increased by the following annual percentage: 3% until January 1 of the year following attainment of age 55 and 5% thereafter until the annuity begins. Amount is payable as a normal or early retirement.

## **SUMMARY OF SIGNIFICANT CHANGES**

All benefit formulas increased from 1.38% to 1.45% effective July 1, 1997.

Direct State funding of \$486,000 per year added.

**TABLE 3B**  
**NEW**

**DULUTH TEACHERS' RETIREMENT FUND**

**ACTIVE MEMBERS AS OF JUNE 30, 1997**

Age	Years of Service								ALL
	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	45	4	0	0	0	0	0	0	49
25-29	77	46	3	0	0	0	0	0	126
30-34	37	34	41	9	0	0	0	0	121
35-39	24	30	34	43	0	0	0	0	131
40-44	24	45	38	60	1	0	0	0	168
45-49	21	42	55	73	8	0	0	0	199
50-54	18	19	15	33	2	0	0	0	87
55-59	4	10	13	10	6	0	0	0	43
60-64	2	4	5	5	0	0	0	0	16
65+	0	1	0	2	0	0	0	0	3
ALL	252	235	204	235	17	0	0	0	943

**AVERAGE ANNUAL EARNINGS**

Age	Years of Service								ALL
	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	3,120	22,618	0	0	0	0	0	0	4,712
25-29	2,889	21,297	28,605	0	0	0	0	0	10,222
30-34	5,064	23,171	28,725	39,861	0	0	0	0	20,758
35-39	4,712	21,982	29,004	38,588	0	0	0	0	26,091
40-44	3,315	24,483	31,606	42,339	45,766	0	0	0	29,574
45-49	3,154	20,129	33,030	44,711	44,133	0	0	0	31,886
50-54	4,332	16,766	41,480	46,898	49,842	0	0	0	30,644
55-59	2,427	20,356	29,750	41,767	41,230	0	0	0	29,420
60-64	825	18,492	41,856	35,811	0	0	0	0	28,997
65+	0	3,990	0	40,991	0	0	0	0	28,657
ALL	3,565	21,552	31,792	42,760	43,876	0	0	0	24,648

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

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
All	898	5,064	6,485	10,048	745	0	0	0	23,243

**TABLE 4B**  
**NEW**

**DULUTH TEACHERS' RETIREMENT FUND**

**SERVICE RETIREMENTS AS OF JUNE 30, 1997**

Age	YEARS RETIRED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	1	0	0	0	0	0	1
50-54	1	1	0	0	0	0	0	2
55-59	18	23	0	0	0	0	0	41
60-64	12	53	24	0	0	0	0	89
65-69	1	37	65	43	0	0	0	146
70-74	1	3	27	41	0	0	0	72
75-79	1	0	2	14	2	0	0	19
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	34	118	118	98	2	0	0	370

**AVERAGE ANNUAL BENEFIT**

Age	YEARS RETIRED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	4,284	0	0	0	0	0	4,284
50-54	1,191	3,700	0	0	0	0	0	2,446
55-59	24,178	18,530	0	0	0	0	0	21,010
60-64	17,919	17,444	13,688	0	0	0	0	16,495
65-69	4,262	12,412	10,441	11,010	0	0	0	11,066
70-74	7,679	17,942	11,151	10,861	0	0	0	11,221
75-79	25,032	0	3,347	8,780	13,740	0	0	9,586
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	20,247	15,863	11,144	10,629	13,740	0	0	13,363

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

Age	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
All	688	1,871	1,314	1,041	27	0	0	4,944

**TABLE 5B**  
**NEW**

**DULUTH TEACHERS' RETIREMENT FUND**

**SURVIVORS AS OF JUNE 30, 1997**

Age	YEARS SINCE DEATH							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	1	0	0	0	0	1
60-64	0	2	3	1	0	0	0	6
65-69	0	1	3	2	0	0	0	6
70-74	0	1	1	5	0	0	0	7
75-79	0	0	0	1	0	0	0	1
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	4	8	9	0	0	0	21

**AVERAGE ANNUAL BENEFIT**

Age	YEARS SINCE DEATH							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	20,725	0	0	0	0	20,725
60-64	0	8,367	15,645	6,329	0	0	0	11,666
65-69	0	13,609	7,639	11,279	0	0	0	9,847
70-74	0	1,211	14,823	12,942	0	0	0	11,535
75-79	0	0	0	12,881	0	0	0	12,881
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	7,889	13,175	11,831	0	0	0	11,592

**TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS SINCE DEATH**

Age	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
All	0	31,556	105,400	106,479	0	0	0	243,432

**TABLE 6B**  
**NEW**

**DULUTH TEACHERS' RETIREMENT FUND**

**DISABILITY RETIREMENTS AS OF JUNE 30, 1997**

Age	YEARS DISABLED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	3	1	0	0	0	0	4
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	1	0	0	0	0	0	1
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	4	1	0	0	0	0	5

**AVERAGE ANNUAL BENEFIT**

Age	YEARS DISABLED							ALL
	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	0	0	0	0	0	0	0	0
50-54	0	12,257	2,075	0	0	0	0	9,712
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	15,686	0	0	0	0	0	15,686
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	13,114	2,075	0	0	0	0	10,907

**TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED**

Age	<u>≤1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
All	0	52,456	2,075	0	0	0	0	54,535

**TABLE 11B**  
**NEW**

**Duluth Teachers' Retirement Fund**

***Determination Of Contribution Sufficiency***  
*(dollars in thousands)*

JULY 1, 1997

	<u>Percent of Payroll</u>	<u>Dollar Amount</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 353		
1. Employee Contributions	5.50%	\$1,354
2. Employer Contributions	5.79%	1,426
3. Total	<u>11.29%</u>	<u>\$2,780</u>
 B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	7.51%	\$1,850
b. Disability benefits	0.28%	69
c. Survivors	0.18%	45
d. Deferred Retirement Benefits	0.69%	170
e. Refunds Due to Death or Withdrawal	<u>0.21%</u>	<u>52</u>
f. Total	<u>8.87%</u>	<u>\$2,186</u>

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1997 is \$24,622.

**Duluth Teachers' Retirement Fund**

***Summary of Plan Provisions***

**GENERAL**

<b><i>Eligibility:</i></b>	A licensed teacher who is employed by the Duluth Public Schools, and eligible licensed staff at Lake Superior College, who have elected to retain their membership in DTRFA. Also includes any employees of the Retirement Fund and certain part-time employees licensed by the State Department of Education. Employees in the New Plan are those first hired on or after July 1, 1981 including any Old Plan Members who may elect to join any time prior to retirement.
<b><i>Contributions:</i></b>	
<b><i>Member:</i></b>	5.5% of salary.
<b><i>Employer:</i></b>	5.79% of salary. (In addition, the State will contribute \$486,000 to the DTRFA plans each year on October 1.)
<b><i>Allowable Service:</i></b>	Earned 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.
<b><i>Salary:</i></b>	Total compensation. Excludes any lump-sum annual leave or sick leave payments and lump-sum payment at separation.
<b><i>Average Salary:</i></b>	Average of the five highest successive years of salary. Average Salary is based on all Allowable Service if less than five years.

## **RETIREMENT**

### ***Normal Retirement Benefit:***

<b><i>Eligibility:</i></b>	First hired before July 1, 1989: Age 65 and three years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service. First hired after June 30, 1989: The greater of age 65 or the age eligible for full Social Security retirement benefits but not higher than age 66 and three years of Allowable Service. Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.
<b><i>Amount:</i></b>	Hired before July 1, 1989: The greater of 1.2% of Average Salary for each of the first 10 years of Allowable Service and 1.7% of Average Salary for each subsequent year. or 1.7% of Average Salary for each year of Allowable Service.  Hired after June 30, 1989: 1.7% of Average Salary for each year of Allowable Service.

### ***Early Retirement Benefit:***

<b><i>Eligibility:</i></b>	Hired before July 1, 1989: Age 55 and three years of Allowable Service. Any age with 30 years of Allowable Service. Rule of 90: Age plus Allowable Service totals 90. Hired after June 30, 1989: Age 55 and three years of Allowable Service.
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*Amount:*

Hired before July 1, 1989:

The greater of 1.2% of Average Salary for the first 10 years of Allowable Service and 1.7% of Average Salary for each subsequent year with reduction of 0.25% for each month the Member is under age 65 at time of retirement (age 62 if 30 years of Allowable service). No reduction if age plus years of Allowable Service totals 90.

or

1.7% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3% per year and actuarial reduction for each month the Member is under age 65.

Hired after June 30, 1989:

1.7% of Average Salary for each year of Allowable Service with augmentation to the age eligible for full Social Security retirement benefits at 3% per year and actuarial reduction for each month the Member is under the Social Security retirement age.

*Form of Payment:* Life annuity. Actuarially equivalent options are:

5, 10, 15 or 20 year certain and life.

50% or 100% joint and survivor with bounce back feature without additional reduction.

A larger life annuity before age 62 and reduced thereafter.

*Benefit Increases:* Annual Cost-of-Living Adjustment (COLA):

Increase all benefits by 2% each January 1. An additional increase will be allowed when the 5-year average rate of return of the fund exceeds the interest rate assumption of the plan, currently 8.5%. To be eligible for a COLA, a retiree or beneficiary must have received a payment for at least 12 months as of the adjustment date.

## **DISABILITY**

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

*Eligibility:* Totally and permanently disabled under normal retirement age with three years of Allowable Service. Also, at least two 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 commencement before retirement age. Benefit is reduced by Workers' Compensation.

Payments may begin 90 days after disability and stops at normal retirement age, or earlier if disability ceases or death occurs. Benefits paid while partially employed may be reduced.

*Form of Payment:* Same as for retirement.

*Benefit Increases:* Same as for retirement.

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

*Eligibility:* Normal retirement age if still totally and permanently disabled.

*Amount:* Optional annuity continues. Otherwise the larger of the disability benefit paid before normal retirement age or the normal retirement benefit available at normal retirement age, or an actuarial equivalent optional annuity.

*Benefit Increase:* Same as for retirement.

## DEATH

### *Surviving Spouse Optional Annuity:*

<i>Eligibility:</i>	Member who dies before retirement benefits commence with three years of Allowable Service.
<i>Amount:</i>	Survivor's payment of the 100% joint and survivor benefit or an actuarial equivalent term certain annuity. If commencement is prior to age 65 (age 62 if 30 years of service), the benefit is reduced same as early retirement with half the applicable reduction factor used from age 55 to the actual commencement age. If no surviving spouse, then an actuarial equivalent dependent child benefit is paid to age 20 or for five years if longer.

*Benefit Increases:* Same as for retirement.

### *Refund of Member's Contributions:*

<i>Eligibility:</i>	Member or former Member dies before receiving any disability or retirement benefits and survivor benefits are not payable.
<i>Amount:</i>	Member's contributions with 5% interest if death occurred before May 16, 1989 or 6% interest if death occurred on or after May 16, 1989.

## TERMINATION

### *Refund of Member's Contributions:*

<i>Eligibility:</i>	Termination from teaching service.
<i>Amount:</i>	Member's contributions with 5% interest if termination occurred before May 16, 1989 and 6% interest if termination occurred on or after May 16, 1989. A deferred annuity may be elected in lieu of a refund.

***Deferred Annuity:***

<i>Eligibility:</i>	Three years of Allowable Service.
<i>Amount:</i>	Benefit computed under law in effect at termination and increased by the following annual percentage: 3% until January 1 of the year following attainment of age 55 and 5% thereafter until the annuity begins. Amount is payable as a normal or early retirement.

**SUMMARY OF SIGNIFICANT CHANGES**

All benefit formulas increased by 0.07%, effective July 1, 1997.

Normal Retirement Age capped at age 66 for those employees first hired after June 30, 1989.

Direct State funding of \$486,000 per year added.