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Duluth Teachers' Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 2002



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November 13, 2002

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, 2002.

The results of our calculations are set forth in the following report, as are the actuarial assumptions upon which our calculations have been made. Although we have reviewed the data for reasonableness and consistency, 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.

We, Thomas K. Custis and William V. Hogan, are actuaries for Milliman USA. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Milliman USA

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Duluth Teachers' Retirement Fund

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Duluth Teachers' Retirement Fund
Report Highlights
(dollars in thousands)

	July 1, 2001 Valuation	July 1, 2002 Valuation
A. CONTRIBUTIONS % OF PAYROLL (Table 11)		
1. Statutory Contributions - Chapter 354A	12.20%	11.29%
2. Required Contributions - Chapter 356	7.49%	9.85%
3. Sufficiency / (Deficiency)	4.71%	1.44%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$ 273,618	\$ 280,515
b. Current Benefit Obligations (Table 8)	243,473	268,200
c. Funding Ratio	112.38%	104.59%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$ 273,618	\$ 280,515
b. Actuarial Accrued Liability (Table 9)	254,255	279,428
c. Funding Ratio	107.62%	100.39%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$ 336,671	\$ 331,206
b. Current and Expected Future Benefit Obligations	293,544	317,753
c. Funding Ratio	114.69%	104.23%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	1,420	1,276
b. Projected Annual Earnings	\$ 53,307	\$ 50,438
c. Average Annual Earnings (Actual dollars)	\$ 37,540	\$ 37,310
d. Average Age	43.9	45.0
e. Average Service	10.3	11.5
2. Others		
a. Service Retirements (Table 4)	992	1,004
b. Survivors (Table 5)	60	68
c. Disability Retirements (Table 6)	6	13
d. Deferred Retirements (Table 7)	179	305
e. Terminated Other Non-Vested (Table 7)	649	769
f. Total	1,886	2,159

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 104.59%. The corresponding ratio for the prior year was 112.38%.
- 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 2002 the ratio is 100.39%, which is a decrease from the 2001 value of 107.62%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 104.23% verifies that the current statutory contributions are sufficient.

Asset Information (Tables 1 and 2)

Effective with the July 1, 2000 valuation of the fund, Minnesota Statutes require that the asset value used for actuarial purposes spread differences between actual return (measured on a market-value basis) and expected return on assets over five years. The previous method required under Minnesota Statutes recognized one third of the unrealized gains and losses. An Asset Valuation Method 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 intent of the change to the current method is to employ a more effective asset smoothing technique which is market-value based and which eliminates artificial bias related to manager style. The effective date of this requirement is July 1, 2000 with full transition to be accomplished as of July 1, 2003.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines E.1 to E.4. Actuarial Value of Assets is determined as:

Market Value of Assets at June 30, 2002, *less*

80% of the current year Unrecognized Asset Return at July 1, 2002 (the difference between actual net return on Market Value of Assets between June 30, 2001 and June 30, 2002 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 2001 Actuarial Valuation); *less*

60% of the current year Unrecognized Asset Return at July 1, 2001 (the difference between actual net return on Market Value of Assets between June 30, 2000 and June 30, 2001 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 2000 Actuarial Valuation); *less*

40% of the current year Unrecognized Asset Return at July 1, 2000 (the difference between actual net return on Market Value of Assets between June 30, 1999 and June 30, 2000 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 1999 Actuarial Valuation); *less*

10% of the Unrecognized Asset Return at July 1, 1999 (the difference between Market Value of Assets on June 30, 1999 and the Actuarial Value of Assets used in the July 1, 1999 Actuarial Valuation).

Since its adoption on July 1, 2000, the Asset Valuation Method has functioned effectively to smooth the significant variability in market value returns. It is prudent to note, however, that the deferral of recognition of the large market losses of the last two fiscal years means there has accumulated a significant negative return amount that will be recognized over the next few years. This means that in order for asset returns on a "Current Assets" basis to be at or near the assumed 8.5%, market value returns will need to be substantially above 8.5%; conversely, if market value returns are at or near the assumed 8.5%, returns measured on a "Current Assets" basis will be substantially lower, resulting in actuarial losses.

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 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 are included to fulfill the requirements of Statement No. 25.

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 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.

Source 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 expectations. For a detailed analysis of the major components, refer to Table 10.

For this year, there is a source of significant gain which deserves special mention. The valuation assumes that each year salaries of teachers will increase according to the scale in Table 12. At the time this valuation was being prepared, the Duluth teachers union was negotiating a new contract with the School Board. Since the old contract expired over one year prior to the valuation date, the reported salaries do not reflect any increases in pay. This situation has produced significant gains in the valuation results for this year. We have not provided any special treatment for this gain component in our report. It is likely that these gains will be followed by losses if a new contract provides for retroactive pay increases.

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 sufficiency since the Statutory Contribution Rate is 11.29% compared to the Required Contribution Rate of 9.85%.

Changes in Actuarial Assumptions and Methods

This report reflects the new assumptions which became effective July 1, 2002. These revised assumptions were developed from the recently completed experience study and have been approved by the Commission. Effective with this July 1, 2002 valuation, the following assumptions have been changed:

Assumption	Prior	Revised
Salary increases	Merit table that ranges from 8.00% at age 20 down to 5.25% at age 70.	Ten year select and ultimate table. During the select period, $0.3\% \times (10 - T)$ where T is completed years of service is added to the ultimate rate. Ultimate table ranges from 6.9% at age 20 down to 5.0% at age 50 and over.
Male Pre-Retirement Mortality	1983 GAM (Male – 4)	1983 GAM (Male – 10)
Female Pre-Retirement Mortality	1983 GAM (Female – 3)	1983 GAM (Female – 7)
Male Post-Retirement Mortality	1983 GAM (Male – 2)	1983 GAM (Male – 2)
Female Post-Retirement Mortality	1983 GAM (Female – 1)	1983 GAM (Female)
Separation Decrement	Graded rates.	Select and ultimate table. Ultimate rates are generally lower than prior rates.
Disability Decrement	Graded rates.	Graded rates. Revised rates are lower than prior rates.
Form of Annuity Selected – Male	80% married 30% elect 50% J&S option 55% elect 100% J&S option	80% married 35% elect 50% J&S option 55% elect 100% J&S option
Form of Annuity Selected – Female	80% married 30% elect 50% J&S option 20% elect 100% J&S option	80% married 25% elect 50% J&S option 25% elect 100% J&S option
Combined Service Annuity Load Factor	None assumed.	10.0% load on liabilities for active Members and 10% load on liabilities for former Members.

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

Effective with this July 1, 2002 valuation, the following plan provisions have been added or amended:

- Effective July 1, 2002, 122 charter school teachers are no longer covered by this fund. Active charter school teachers retain their rights to benefits earned in this fund through June 30, 2002 as if they were former Members with a termination of employment on June 30, 2002. Effective July 1, 2002, these 122 charter school Members are transferred to the Minnesota Teachers Retirement Association.

All other plan provisions are the same as those used in the prior actuarial valuation of the Fund. Tables 13A and 13B contain summaries of current plan benefits.

Other

While not a formal change in provisions, a change in the expected amount of state aid has occurred with the Fund. Since the Fund's Accrued Liability Funding Ratio exceeded the Teachers Retirement Fund Accrued Liability Funding Ratio as of July 1, 2001, the state aid normally provided to this Fund shall be reallocated to the other first class city teachers funds. This results in a decrease in the amount of state aid for this Fund.

TABLE 1

Duluth Teachers' Retirement Fund
Statement of Plan Net Assets
(dollars in thousands)

July 1, 2002

	Market Value	Cost Value
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-Term Securities	\$ 25,587	\$ 25,587
2. Investments		
a. Fixed Income	137,192	137,093
b. Equity	90,112	99,050
c. Real Estate and Mortgage Loans	4,199	4,199
d. Invested Securities Lending Collateral	28,715	28,715
3. Equity in Minnesota Post-Retirement Investment Fund	-	-
4. Other Assets	459	459
Subtotal	<u>\$ 286,264</u>	<u>\$ 295,103</u>
B. ASSETS RECEIVABLE	\$ 10,244	\$ 10,244
C. LIABILITIES		
1. Invested Securities Lending Collateral	\$ (28,715)	\$ (28,715)
2. Other	\$ (33,422)	\$ (33,422)
Subtotal	<u>\$ (62,137)</u>	<u>\$ (62,137)</u>
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	\$ -	\$ -
2. Member Reserves	\$ 27,620	\$ 27,620
3. Other Non-MPRIF Reserves	206,751	215,590
4. Total Assets Available for Benefits	<u>\$ 234,371</u>	<u>\$ 243,210</u>
E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Market Value of Assets Available for Benefits (D4)		\$ 234,371
2. Unrecognized Asset Returns (UAR)		
a. June 30, 2002	\$ (44,781)	
b. June 30, 2001	(48,888)	
c. June 30, 2000	41,405	
d. June 30, 1999	<u>24,513</u>	
3. UAR Adjustment: $.80 * 2(a) + .60 * 2(b) + .40 * 2(c) + .1 * 2(d)$		(46,144)
4. Actuarial Value of Assets (E1 - E3) (Same as "Current Assets")		<u><u>\$ 280,515</u></u>

TABLE 2

Duluth Teachers' Retirement Fund
Statement of Change In Net Plan Assets
(dollars in thousands)

Year Ending June 30, 2002

	Market Value	Cost Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$ 266,704	\$ 262,286
B. ADDITIONS		
1. Member Contributions	\$ 3,275	\$ 3,275
2. Employer Contributions	2,956	2,956
3. Supplemental Contributions	486	486
4. Investment Income	9,294	9,294
5. MPRIF Income	-	-
6. Investment Expenses	(1,278)	(1,278)
7. Net Realized Gain / (Loss)	(17,484)	(17,484)
8. Other	197	197
9. Net Change in Unrealized Gain / (Loss)	(13,257)	-
10. Total Additions	\$ (15,811)	\$ (2,554)
C. OPERATING EXPENSES		
1. Service Retirements	\$ 14,916	\$ 14,916
2. Disability Benefits	188	188
3. Survivor Benefits	864	864
4. Refunds	106	106
5. Administrative Expenses	448	448
6. Total Operating Expenses	\$ 16,522	\$ 16,522
D. OTHER CHANGES IN RESERVES	\$ -	\$ -
E. ASSETS AVAILABLE AT END OF PERIOD	\$ 234,371	\$ 243,210
F. DETERMINATION OF CURRENT YEAR UNRECOGNIZED ASSET RETURN		
1. Average Balance		
(a) Assets Available at Beginning of Period	\$ 266,704	
(b) Assets Available at End of Period	234,371	
(c) Average Balance $\{[(a) + (b) - \text{Net Investment Income}] / 2\}$ {Net Investment Income: B.4+B.6+B.7+B.8+B.9}	\$ 261,802	
2. Expected Return: $.085 * F.1$	22,253	
3. Actual Return	(22,528)	
4. Current Year UAR: $F.3 - F.2$	\$ (44,781)	

TABLE 3

Duluth Teachers Retirement Fund
Active Members as of June 30, 2002

<u>Age</u>	<u>Years of Service</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>25-29</u>	<u>30+</u>	
<25	28	2	0	0	0	0	0	0	30
25-29	42	55	8	0	0	0	0	0	105
30-34	28	44	42	1	0	0	0	0	115
35-39	17	35	40	30	3	0	0	0	125
40-44	19	30	40	30	28	1	0	0	148
45-49	14	40	49	40	53	31	4	0	231
50-54	17	24	44	48	61	38	54	19	305
55-59	5	14	14	15	23	22	28	52	173
60-64	3	4	5	3	5	8	3	3	34
65+	4	1	1	2	1	1	0	0	10
ALL	177	249	243	169	174	101	89	74	1,276

Average Annual Earnings

<u>Age</u>	<u>Years of Service</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>25-29</u>	<u>30+</u>	
<25	2,292	20,396	0	0	0	0	0	0	3,499
25-29	4,028	26,967	37,517	0	0	0	0	0	18,595
30-34	3,521	28,889	37,931	52,796	0	0	0	0	26,223
35-39	4,631	27,190	41,366	40,727	52,868	0	0	0	32,523
40-44	4,056	27,256	37,672	41,767	49,335	50,960	0	0	34,371
45-49	2,876	26,359	40,468	45,204	52,149	54,855	58,409	0	41,488
50-54	3,279	32,913	37,958	49,857	51,275	52,530	55,851	59,785	46,507
55-59	4,724	19,426	39,699	52,072	51,010	55,335	55,581	56,972	49,375
60-64	2,526	4,345	28,347	44,228	47,185	49,033	53,875	52,045	36,627
65+	2,456	29,567	39,201	45,496	49,268	55,571	0	0	27,442
ALL	3,530	27,019	38,867	45,761	51,092	53,592	55,814	57,495	37,660

Prior Fiscal Year Earnings (in Thousands) by 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>
All	625	6,728	9,445	7,734	8,890	5,413	4,967	4,255	48,054

TABLE 4

Duluth Teachers Retirement Fund
Service Retirements as of June 30, 2002

<u>Age</u>	<u>Years Retired</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	1	0	0	0	0	1
50-54	0	0	1	0	0	0	0	1
55-59	18	76	2	1	0	0	0	97
60-64	7	113	79	0	0	0	0	199
65-69	3	37	126	49	0	0	1	216
70-74	0	2	48	80	61	1	0	192
75-79	0	1	4	33	75	18	0	131
80-84	0	0	0	1	37	37	12	87
85+	0	0	0	0	1	18	61	80
ALL	28	229	261	164	174	74	74	1,004

Average Annual Benefit

<u>Age</u>	<u>Years Retired</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	6,166	0	0	0	0	6,166
50-54	0	0	12,984	0	0	0	0	12,984
55-59	25,857	23,807	7,594	19,256	0	0	0	23,806
60-64	19,208	20,797	17,692	0	0	0	0	19,509
65-69	9,413	14,243	17,304	13,840	0	0	7,509	15,839
70-74	0	25,459	16,090	14,650	13,607	6,240	0	14,747
75-79	0	939	21,970	15,167	12,668	7,220	0	12,743
80-84	0	0	0	8,752	10,878	10,729	6,789	10,226
85+	0	0	0	0	1,244	8,295	10,155	9,625
ALL	22,433	20,691	17,136	14,504	12,551	9,223	9,573	15,729

Total Annual Benefit (in thousands) by 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>
All	628	4,738	4,472	2,379	2,184	682	708	15,792

TABLE 5

Duluth Teachers Retirement Fund
Survivors as of June 30, 2002

<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	2	2	0	0	4
50-54	0	1	0	0	1	0	0	2
55-59	0	0	0	0	0	0	0	0
60-64	0	1	5	2	0	0	0	8
65-69	0	0	3	8	2	0	0	13
70-74	0	1	1	3	4	2	0	11
75-79	0	0	1	3	9	3	1	17
80-84	0	0	0	0	1	4	1	6
85+	0	0	0	0	0	1	6	7
ALL	0	3	10	18	19	10	8	68

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	9,648	10,770	0	0	10,209
50-54	0	2,756	0	0	4,686	0	0	3,721
55-59	0	0	0	0	0	0	0	0
60-64	0	32,281	17,831	23,765	0	0	0	21,121
65-69	0	0	8,671	14,406	10,328	0	0	12,455
70-74	0	15,676	6,009	10,998	12,915	14,231	0	12,255
75-79	0	0	1,743	14,683	17,123	14,583	5,568	14,660
80-84	0	0	0	0	18,543	8,470	8,917	10,223
85+	0	0	0	0	0	14,577	8,353	9,242
ALL	0	16,905	12,292	14,395	14,273	12,067	8,075	13,077

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	51	123	259	271	121	65	889

TABLE 6

Duluth Teachers Retirement Fund
Disability Retirements as of June 30, 2002

<u>Age</u>	<u>Years Disabled</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	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	4	3	2	1	0	0	10
60-64	0	1	1	0	0	0	0	2
65-69	0	0	1	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	5	5	2	1	0	0	13

Average Annual Benefit

<u>Age</u>	<u>Years Disabled</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	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	11,719	10,175	13,521	12,414	0	0	11,685
60-64	0	20,772	28,756	0	0	0	0	24,764
65-69	0	0	3,184	0	0	0	0	3,184
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	13,529	12,493	13,521	12,414	0	0	13,044

Total Annual Benefit (in thousands) by Years Disabled

<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	68	62	27	12	0	0	170

TABLE 7

Duluth Teachers' Retirement Fund
Reconciliation of Members

	<u>Actives</u>	<u>Terminated</u>	
		<u>Deferred Retirement</u>	<u>Other Non-Vested</u>
A. ON JUNE 30, 2001	1,420	179	649
B. ADDITIONS	130	135	22
C. DELETIONS			
1. Service Retirement	(33)	(3)	0
2. Disability	0	0	0
3. Death	(1)	0	0
4. Terminated - Deferred	(135)	0	0
5. Terminated - Refund	(13)	(15)	0
6. Terminated - Other Non-Vested	(20)	(2)	0
7. Returned as active	29	(20)	0
8. Transferred to Other Fund	(122)	122	0
D. DATA ADJUSTMENTS	21	(91)	98
E. TOTAL ON JUNE 30, 2002	1,276	305	769

	<u>Recipients</u>		
	<u>Retirement Annuitants</u>	<u>Disabled</u>	<u>Survivors</u>
A. ON JUNE 30, 2001	992	6	60
B. ADDITIONS	36	0	8
C. DELETIONS			
1. Service Retirement	0	(2)	0
2. Death	(26)	0	(1)
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	0
D. DATA ADJUSTMENTS	2	9	1
E. TOTAL ON JUNE 30, 2002	1,004	13	68

TABLE 8

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

July 1, 2002

A. CURRENT ASSETS (Table 1; Line F.6)				\$	280,515
B. EXPECTED FUTURE ASSETS					
1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)				\$	12,366
2. Present Value of Future Normal Costs					38,325
3. Total Expected Future Assets					<u>50,691</u>
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				\$	<u>331,206</u>
D. CURRENT BENEFIT OBLIGATIONS		Non-Vested	Vested		Total
1. Benefit Recipients					
a. Retirement Annuities			\$ 153,320	\$	153,320
b. Disability Benefits			1,668		1,668
c. Surviving Spouse and Child Benefits			7,734		7,734
2. Deferred Retirements			12,488		12,488
3. Former Members Without Vested Rights			731		731
4. Active Members					
a. Retirement Annuities	\$	309	85,207		85,516
b. Disability Benefits		749	-		749
c. Surviving Spouse and Child Benefits		2,095	-		2,095
d. Deferred Retirements		45	3,276		3,321
e. Refund Liability Due to Death or Withdrawal		-	578		578
5. Total Current Benefit Obligations	\$	3,198	\$ 265,002	\$	<u>268,200</u>
E. EXPECTED FUTURE BENEFIT OBLIGATIONS				\$	<u>49,553</u>
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				\$	<u>317,753</u>
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D.5 - A)				\$	(12,315)
H. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F - C)				\$	(13,453)

TABLE 9

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

July 1, 2002

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Benefits	\$ 131,425	\$ 32,052	\$ 99,373
b. Disability Benefits	1,193	457	736
c. Surviving Spouse and Child Benefits	2,906	731	2,175
d. Deferred Retirements	5,240	3,674	1,566
e. Refund Liability Due to Death or Withdrawal	1,048	1,411	(363)
f. Total	<u>\$ 141,812</u>	<u>\$ 38,325</u>	<u>\$ 103,487</u>
2. Deferred Retirements	\$ 12,488		\$ 12,488
3. Former Members Without Vested Rights	731		731
4. Annuitants in MPRIF	-		-
5. Annuitants Not in MPRIF	162,722		162,722
6. Total	<u>\$ 317,753</u>	<u>\$ 38,325</u>	<u>\$ 279,428</u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. Actuarial Accrued Liability (A.6)			\$ 279,428
2. Current Assets (Table 1; Line F.6)			280,515
3. Unfunded Actuarial Accrued Liability (B.1 - B.2)			<u>\$ (1,087)</u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls Through the Amortization Date of June 30, 2032			936,821
2. Supplemental Contribution Rate (B.3 / C.1)			<u>-0.12%</u>

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

June 30, 2002

A. UAAL AT BEGINNING OF YEAR	\$ (19,363)
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$ 5,030
2. Contributions	(6,717)
3. Interest	(1,504)
4. Total	<u>\$ (3,191)</u>
C. EXPECTED UAAL AT END OF YEAR (A. + B.4)	\$ (22,554)
D. INCREASE / (DECREASE) DUE TO ACTUARIAL LOSSES / (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Age and Service Retirements *	\$ -
2. Disability Retirements *	-
3. Death-in-Service Benefits *	-
4. Withdrawal *	-
5. Salary Increases	(3,998)
6. Contribution Income *	-
7. Investment Income	6,139
8. Mortality of Annuitants	(1,207)
9. Other Items	3,459
10. Total	<u>\$ 4,393</u>
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C + D.10)	\$ (18,161)
F. CHANGE IN UAAL DUE TO PLAN AMENDMENTS	(414)
G. CHANGE IN UAAL DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	<u>17,488</u>
H. UAAL AT END OF YEAR (E + F + G)	<u><u>\$ (1,087)</u></u>

* Included in Item D.9.

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

July 1, 2002

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	5.50%	\$ 2,775
2. Employer Contributions	5.79%	2,920
3. Supplemental Contributions *	0.00%	-
4. Total	11.29%	\$ 5,695
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	7.69%	\$ 3,878
b. Disability Benefits	0.11%	53
c. Surviving Spouse and Child Benefits	0.18%	89
d. Deferred Retirements	0.85%	429
e. Refund Liability Due to Death or Withdrawal	0.30%	153
f. Total	9.13%	\$ 4,602
2. Supplemental Contribution Amortization	-0.12%	(61)
3. Allowance for Administrative Expenses	0.84%	424
4. Total	9.85%	\$ 4,965
C. CONTRIBUTION SUFFICIENCY / (DEFICIENCY) (A.5 - B.4)	1.44%	730
Projected Annual Payroll for Fiscal Year Beginning on the Valuation Date:		\$ 50,438

* Supplemental Contributions terminated effective June 30, 2002

Duluth Teachers' Retirement Fund

Summary of Actuarial Assumptions and Methods*(Please note that these are new assumptions effective July 1, 2002.)*

Interest:	Pre-Retirement: 8.5% per annum Post-Retirement: 8.5% per annum						
Salary Increases:	Reported salary for prior fiscal year, with new hires annualized, increased to current fiscal year and annually for each future year according to the ultimate rate table below. During a 10-year select period, $0.3\% \times (10-T)$ where T is completed years of service is added to the ultimate rate.						
Mortality:	Pre-Retirement: Male - 1983 GAM (Males -10) Female - 1983 GAM (Females -7) Post-Retirement: Male - 1983 GAM (Males -2) Female - 1983 GAM (Females) Post-Disability: Male - 1977 RRB Female - 1977 RRB						
Retirement Age:	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.						
Separation:	Select and ultimate rates are based on recent plan experience. Ultimate rates after the third year are shown in the rate table. Select rates are as follows: <table> <tr> <td>First Year</td><td>40%</td></tr> <tr> <td>Second Year</td><td>10%</td></tr> <tr> <td>Third Year</td><td>6%</td></tr> </table>	First Year	40%	Second Year	10%	Third Year	6%
First Year	40%						
Second Year	10%						
Third Year	6%						
Disability:	Rates as shown in rate table.						

TABLE 12
(Continued)

<i>Allowance for Combined Service Annuity:</i>	10.0% load on liabilities for active Members and 10.0% load on liabilities for former Members.				
<i>Expenses:</i>	Prior year administrative expenses expressed as percentage of prior year payroll.				
<i>Return of Contributions:</i>	All employees withdrawing after becoming eligible for a deferred benefit were assumed to take the larger of their contributions accumulated with interest or the value of their deferred benefit.				
<i>Family Composition:</i>	80% of Members are assumed to be married. Female is three years younger than male.				
<i>Social Security:</i>	N/A				
<i>Benefit Increases After Retirement:</i>	N/A				
<i>Special Consideration:</i>	<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>Males -</td><td>35% elect 50% J&S option 55% elect 100% J&S option</td></tr> <tr> <td>Females -</td><td>25% elect 50% J&S option 25% elect 100% J&S option</td></tr> </table>	Males -	35% elect 50% J&S option 55% elect 100% J&S option	Females -	25% elect 50% J&S option 25% elect 100% J&S option
Males -	35% elect 50% J&S option 55% elect 100% J&S option				
Females -	25% elect 50% J&S option 25% elect 100% J&S option				
<i>Actuarial Cost Method:</i>	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.				
<i>Asset Valuation Method:</i>	On and after July 1, 2000, Market Value, adjusted for amortization obligations receivable at the end of each fiscal year, less a percentage of the Unrecognized Asset Return determined at the close of each of the four preceding fiscal years. Unrecognized Asset Return is the difference between				

actual net return on Market Value of Assets and the asset return expected during the fiscal year (based on the assumed interest rate employed in the July 1 Actuarial Valuation of the fiscal year). Transition rules apply between July 1, 2000 and July 1, 2003, when the method is fully in effect.

***Payment on the
Unfunded Actuarial
Accrued Liability:***

A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 5% per annum. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.

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>Ultimate Rate of 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	1	350	350	0	0	0	0	6.90%
21	3	1	345	345	0	0	0	0	6.90
22	3	1	340	340	0	0	0	0	6.90
23	3	1	335	335	0	0	0	0	6.85
24	3	2	330	330	0	0	0	0	6.80
25	3	2	325	325	0	0	0	0	6.75
26	3	2	320	320	0	0	0	0	6.70
27	3	2	315	315	0	0	0	0	6.65
28	4	2	310	310	0	0	0	0	6.60
29	4	2	305	305	0	0	0	0	6.55
30	4	2	300	300	0	0	0	0	6.50
31	4	2	295	295	0	0	0	0	6.45
32	4	3	290	290	0	0	0	0	6.40
33	4	3	285	285	0	0	0	0	6.35
34	4	3	280	280	0	0	0	0	6.30
35	5	3	275	275	1	1	0	0	6.25
36	5	3	270	270	1	1	0	0	6.20
37	5	3	265	265	1	1	0	0	6.15
38	5	4	260	260	1	1	0	0	6.10
39	6	4	255	255	1	1	0	0	6.05
40	6	4	250	250	3	3	0	0	6.00
41	6	4	240	240	3	3	0	0	5.90
42	7	5	230	230	3	3	0	0	5.80
43	7	5	220	220	3	3	0	0	5.70
44	8	5	210	210	3	3	0	0	5.60
45	9	6	200	200	6	6	0	0	5.50
46	9	6	190	190	6	6	0	0	5.40
47	10	7	180	180	6	6	0	0	5.30
48	10	7	170	170	6	6	0	0	5.20
49	11	8	160	160	6	6	0	0	5.10

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>Ultimate Rate of 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>	
50	12	8	150	150	10	10	0	0	5.00%
51	14	9	135	135	10	10	0	0	5.00
52	15	10	120	120	10	10	0	0	5.00
53	17	11	105	105	10	10	0	0	5.00
54	19	12	90	90	10	10	0	0	5.00
55	22	14	75	75	15	15	1,500	1,000	5.00
56	25	15	60	60	15	15	1,500	1,000	5.00
57	28	16	45	45	15	15	1,500	1,000	5.00
58	31	18	30	30	15	15	1,500	1,000	5.00
59	35	19	15	15	15	15	1,500	1,000	5.00
60	39	21	0	0	21	21	1,500	1,000	5.00
61	43	23	0	0	21	21	4,000	2,000	5.00
62	48	25	0	0	21	21	4,000	2,000	5.00
63	52	28	0	0	21	21	4,000	2,000	5.00
64	57	31	0	0	21	21	4,000	2,000	5.00
65	61	34	0	0	0	0	4,000	2,000	5.00
66	66	38	0	0	0	0	5,000	4,000	5.00
67	71	42	0	0	0	0	5,000	4,000	5.00
68	77	47	0	0	0	0	5,000	4,000	5.00
69	84	52	0	0	0	0	5,000	4,000	5.00
70	92	58	0	0	0	0	5,000	4,000	5.00

Duluth Teachers' Retirement Fund
Schedule of Funding Progress
(dollars in thousands)

July 1, 2002

Actuarial Valuation Date	Actuarial Value of Assets (A)	Actuarial Accrued Liability (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%
07/01/98	187,482	197,078	9,596	95.13%	47,064	20.39%
07/01/99	218,699	220,540	1,841	99.17%	52,176	3.53%
07/01/00	251,007	241,899	(9,108)	103.77%	52,270	-17.42%
07/01/01	273,618	254,255	(19,363)	107.62%	51,996	-37.24%
07/01/02	280,515	279,428	(1,087)	100.39%	51,054	-2.13%

Duluth Teachers' Retirement Fund
Schedule of Employer Contributions
(dollars in thousands)

July 1, 2002

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contributions [(A)*(B)]-(C)	Actual Employer Contributions*	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%
1998	12.87%	47,064	2,664	3,393	3,211	94.64%
1999	10.24%	52,176	3,118	2,225	3,507	157.62%
2000	9.16%	52,270	3,152	1,636	3,512	214.67%
2001	8.51%	51,996	3,141	1,284	3,497	272.35%
2002	7.49%	51,054	3,275	549	3,442	626.96%

*Includes contributions from other sources (if applicable)

TABLE 3A
OLD

Duluth Teachers Retirement Fund
Active Members as of June 30, 2002

<u>Age</u>	<u>Years of Service</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>25-29</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	0	0	0	0	0	0
45-49	0	0	0	3	8	30	4	0	45
50-54	0	0	2	2	5	31	54	19	113
55-59	0	0	1	0	6	22	28	52	109
60-64	0	0	0	0	2	6	3	3	14
65+	0	0	0	0	1	1	0	0	2
ALL	0	0	3	5	22	90	89	74	283

Average Annual Earnings

<u>Age</u>	<u>Years of Service</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>25-29</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	0	0	0	0	0	0
45-49	0	0	0	42,710	44,346	54,929	58,409	0	52,542
50-54	0	0	27,399	41,567	54,861	52,214	55,851	59,785	54,715
55-59	0	0	21,868	0	43,883	55,335	55,581	56,972	55,242
60-64	0	0	0	0	48,656	54,351	53,875	52,045	52,941
65+	0	0	0	0	49,268	55,571	0	0	52,420
ALL	0	0	25,555	42,253	47,225	54,062	55,814	57,495	54,468

Prior Fiscal Year Earnings (in Thousands) by 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>
All	0	0	77	211	1,039	4,866	4,967	4,255	15,414

Duluth Teachers Retirement Fund
Service Retirements as of June 30, 2002

<u>Age</u>	<u>Years Retired</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	0	0	0	0	0
50-54	0	0	1	0	0	0	0	1
55-59	5	40	1	1	0	0	0	47
60-64	1	35	34	0	0	0	0	70
65-69	0	5	58	27	0	0	1	91
70-74	0	0	8	19	18	1	0	46
75-79	0	0	0	7	37	18	0	62
80-84	0	0	0	0	23	35	12	70
85+	0	0	0	0	1	18	61	80
ALL	6	80	102	54	79	72	74	467

Average Annual Benefit

<u>Age</u>	<u>Years Retired</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	0	0	0	0	0
50-54	0	0	12,984	0	0	0	0	12,984
55-59	12,239	18,195	9,862	19,256	0	0	0	17,407
60-64	22,142	15,323	14,805	0	0	0	0	15,169
65-69	0	11,375	13,507	10,848	0	0	7,509	12,535
70-74	0	0	11,322	12,402	8,911	6,240	0	10,714
75-79	0	0	0	11,601	9,400	7,220	0	9,015
80-84	0	0	0	0	9,901	10,212	6,789	9,523
85+	0	0	0	0	1,244	8,295	10,155	9,625
ALL	13,889	16,513	13,728	11,648	9,331	8,930	9,573	11,825

Total Annual Benefit (in thousands) by 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>
All	83	1,321	1,400	629	737	643	708	5,522

TABLE 5A
OLD

Duluth Teachers Retirement Fund
Survivors as of June 30, 2002

<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	0	0	0	0	0
50-54	0	0	0	0	1	0	0	1
55-59	0	0	0	0	0	0	0	0
60-64	0	0	2	1	0	0	0	3
65-69	0	0	1	3	0	0	0	4
70-74	0	0	0	0	2	2	0	4
75-79	0	0	0	1	3	3	1	8
80-84	0	0	0	0	0	4	1	5
85+	0	0	0	0	0	1	6	7
ALL	0	0	3	5	6	10	8	32

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	0	0	0	0	0
50-54	0	0	0	0	4,686	0	0	4,686
55-59	0	0	0	0	0	0	0	0
60-64	0	0	14,494	17,697	0	0	0	15,561
65-69	0	0	1,924	8,736	0	0	0	7,033
70-74	0	0	0	0	11,523	14,231	0	12,877
75-79	0	0	0	9,235	19,622	14,583	5,568	14,677
80-84	0	0	0	0	0	8,470	8,917	8,559
85+	0	0	0	0	0	14,577	8,353	9,242
ALL	0	0	10,304	10,628	14,433	12,067	8,075	11,123

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	0	31	53	87	121	65	356

Duluth Teachers Retirement Fund

Disability Retirements as of June 30, 2002

<u>Age</u>	<u>Years Disabled</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	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	1	0	0	1
60-64	0	0	0	0	0	0	0	0
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	0	1	0	0	1

Average Annual Benefit

<u>Age</u>	<u>Years Disabled</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	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	12,414	0	0	12,414
60-64	0	0	0	0	0	0	0	0
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	0	12,414	0	0	12,414

Total Annual Benefit (in thousands) by Years Disabled

<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	0	0	0	12	0	0	12

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

July 1, 2002

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	5.50%	\$ 888
2. Employer Contributions	5.79%	934
3. Total	11.29%	\$ 1,822
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	7.31%	\$ 1,179
b. Disability Benefits	0.09%	15
c. Surviving Spouse and Child Benefits	0.20%	32
d. Deferred Retirements	1.04%	168
e. Refund Liability Due to Death or Withdrawal	0.39%	63
f. Total	9.03%	\$ 1,457
Projected Annual Payroll for Fiscal Year Beginning on the Valuation Date:	\$	16,138

Duluth Teachers' Retirement Fund
Summary of Plan Provisions

This summary of provisions reflects the interpretation of applicable Statutes by the Commission Actuary for purposes of preparing this valuation. This interpretation is not intended to create or rescind any benefit rights in conflict with any Minnesota Statutes.

GENERAL

<i>Eligibility:</i>	A licensed teacher who is employed by the Duluth Public Schools other than a charter school, 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 Department of Children, Families and Learning. Employees in the Old Plan are those first hired before July 1, 1981.
<i>Contributions:</i>	
<i>Member:</i>	5.5% of salary.
<i>Employer:</i>	5.79% of salary.
<i>Credited Service:</i>	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.
<i>Salary:</i>	Annual contract salary.
<i>Average Salary:</i>	Average of the five highest years of annual salary.

RETIREMENT

Normal Retirement Benefit:

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

There are a small number of Members retired prior to
June 30, 1971 who receive an additional amount each
year paid monthly.

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:

Eligibility: 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.

Amount: 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

Eligibility: Death of active Member with 10 years of Credited Service.

Amount: 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

Eligibility: 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.

Amount: 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.

TABLE 3B
NEW

Duluth Teachers Retirement Fund
Active Members as of June 30, 2002

<u>Age</u>	<u>Years of Service</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>25-29</u>	<u>30+</u>	
<25	28	2	0	0	0	0	0	0	30
25-29	42	55	8	0	0	0	0	0	105
30-34	28	44	42	1	0	0	0	0	115
35-39	17	35	40	30	3	0	0	0	125
40-44	19	30	40	30	28	1	0	0	148
45-49	14	40	49	37	45	1	0	0	186
50-54	17	24	42	46	56	7	0	0	192
55-59	5	14	13	15	17	0	0	0	64
60-64	3	4	5	3	3	2	0	0	20
65+	4	1	1	2	0	0	0	0	8
ALL	177	249	240	164	152	11	0	0	993

Average Annual Earnings

<u>Age</u>	<u>Years of Service</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>25-29</u>	<u>30+</u>	
<25	2,292	20,396	0	0	0	0	0	0	3,499
25-29	4,028	26,967	37,517	0	0	0	0	0	18,595
30-34	3,521	28,889	37,931	52,796	0	0	0	0	26,223
35-39	4,631	27,190	41,366	40,727	52,868	0	0	0	32,523
40-44	4,056	27,256	37,672	41,767	49,335	50,960	0	0	34,371
45-49	2,876	26,359	40,468	45,406	53,537	52,624	0	0	38,814
50-54	3,279	32,913	38,461	50,217	50,955	53,932	0	0	41,677
55-59	4,724	19,426	41,071	52,072	53,526	0	0	0	39,383
60-64	2,526	4,345	28,347	44,228	46,205	33,078	0	0	25,207
65+	2,456	29,567	39,201	45,496	0	0	0	0	21,198
ALL	3,530	27,019	39,033	45,868	51,653	49,751	0	0	32,871

Prior Fiscal Year Earnings (in Thousands) by 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>
All	625	6,728	9,368	7,522	7,851	547	0	0	32,641

TABLE 4B
NEW

Duluth Teachers Retirement Fund
Service Retirements as of June 30, 2002

<u>Age</u>	<u>Years Retired</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	1	0	0	0	0	1
50-54	0	0	0	0	0	0	0	0
55-59	13	36	1	0	0	0	0	50
60-64	6	78	45	0	0	0	0	129
65-69	3	32	68	22	0	0	0	125
70-74	0	2	40	61	43	0	0	146
75-79	0	1	4	26	38	0	0	69
80-84	0	0	0	1	14	2	0	17
85+	0	0	0	0	0	0	0	0
ALL	22	149	159	110	95	2	0	537

Average Annual Benefit

<u>Age</u>	<u>Years Retired</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	6,166	0	0	0	0	6,166
50-54	0	0	0	0	0	0	0	0
55-59	31,094	30,041	5,326	0	0	0	0	29,821
60-64	18,719	23,254	19,874	0	0	0	0	21,864
65-69	9,413	14,691	20,541	17,513	0	0	0	18,244
70-74	0	25,459	17,044	15,350	15,572	0	0	16,018
75-79	0	939	21,970	16,127	15,851	0	0	16,093
80-84	0	0	0	8,752	12,483	19,779	0	13,122
85+	0	0	0	0	0	0	0	0
ALL	24,763	22,935	19,323	15,906	15,228	19,779	0	19,125

Total Annual Benefit (in thousands) by 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>
All	545	3,417	3,072	1,750	1,447	40	0	10,270

TABLE 5B
NEW

Duluth Teachers Retirement Fund
Survivors as of June 30, 2002

<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	2	2	0	0	4
50-54	0	1	0	0	0	0	0	1
55-59	0	0	0	0	0	0	0	0
60-64	0	1	3	1	0	0	0	5
65-69	0	0	2	5	2	0	0	9
70-74	0	1	1	3	2	0	0	7
75-79	0	0	1	2	6	0	0	9
80-84	0	0	0	0	1	0	0	1
85+	0	0	0	0	0	0	0	0
ALL	0	3	7	13	13	0	0	36

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	9,648	10,770	0	0	10,209
50-54	0	2,756	0	0	0	0	0	2,756
55-59	0	0	0	0	0	0	0	0
60-64	0	32,281	20,056	29,833	0	0	0	24,457
65-69	0	0	12,045	17,807	10,328	0	0	14,864
70-74	0	15,676	6,009	10,998	14,308	0	0	11,899
75-79	0	0	1,743	17,408	15,874	0	0	14,644
80-84	0	0	0	0	18,543	0	0	18,543
85+	0	0	0	0	0	0	0	0
ALL	0	16,905	13,144	15,844	14,200	0	0	14,814

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	51	92	206	185	0	0	533

Duluth Teachers Retirement Fund

Disability Retirements as of June 30, 2002

<u>Age</u>	<u>Years Disabled</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	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	4	3	2	0	0	0	9
60-64	0	1	1	0	0	0	0	2
65-69	0	0	1	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	5	5	2	0	0	0	12

Average Annual Benefit

<u>Age</u>	<u>Years Disabled</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	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	11,719	10,175	13,521	0	0	0	11,605
60-64	0	20,772	28,756	0	0	0	0	24,764
65-69	0	0	3,184	0	0	0	0	3,184
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	13,529	12,493	13,521	0	0	0	13,096

Total Annual Benefit (in thousands) by Years Disabled

<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	68	62	27	0	0	0	157

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

July 1, 2002

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	5.50%	\$ 1,887
2. Employer Contributions	5.79%	1,986
3. Total	11.29%	\$ 3,873
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	7.87%	\$ 2,699
b. Disability Benefits	0.11%	38
c. Surviving Spouse and Child Benefits	0.17%	57
d. Deferred Retirements	0.76%	261
e. Refund Liability Due to Death or Withdrawal	0.26%	90
f. Total	9.17%	\$ 3,145
Projected Annual Payroll for Fiscal Year Beginning on the Valuation Date:		\$ 34,300

Duluth Teachers' Retirement Fund

Summary of Plan Provisions

This summary of provisions reflects the interpretation of applicable Statutes by the Commission Actuary for purposes of preparing this valuation. This interpretation is not intended to create or rescind any benefit rights in conflict with any Minnesota Statutes.

GENERAL

<i>Eligibility:</i>	A licensed teacher who is employed by the Duluth Public Schools other than a charter school, 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 Department of Children, Families and Learning. 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.
<i>Contributions:</i>	
<i>Member:</i>	5.5% of salary.
<i>Employer:</i>	5.79% of salary.
<i>Allowable Service:</i>	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.
<i>Salary:</i>	Total compensation. Excludes any lump-sum annual leave or sick leave payments and lump-sum payment at separation.
<i>Average Salary:</i>	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:

Eligibility:

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.

Amount:

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:

Eligibility:

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.

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:

Eligibility: Three years of Allowable Service.

Amount: 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.