

DULUTH TEACHERS' RETIREMENT FUND
ACTUARIAL VALUATION REPORT
JULY 1, 1991



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December 6, 1991

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, 1991.

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 on September 20, 1989.

Respectfully submitted,

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

William V. Hogan, F.S.A., M.A.A.A.
Actuary

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DULUTH TEACHERS' RETIREMENT FUND

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DULUTH TEACHERS RETIREMENT FUND

REPORT HIGHLIGHTS (DOLLARS IN THOUSANDS)

	<u>07/01/90 Valuation</u>	<u>07/01/91 Valuation</u>
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 353 % of Payroll	10.29%	10.29%
2. Required Contributions - Chapter 356 % of Payroll	10.70%	11.09%
3. Sufficiency (Deficiency): (A.1. - A.2.)	-0.41%	-0.80%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$97,187	\$105,087
b. Current Benefit Obligations (Table 8)	\$97,305	\$109,071
c. Funding Ratio: (a/b)	99.88%	96.35%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$97,187	\$105,087
b. Actuarial Accrued Liability (Table 9)	\$103,824	\$117,582
c. Funding Ratio: (a/b)	93.61%	89.37%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$137,446	\$150,338
b. Current and Expected Future Benefit Obligations	\$141,112	\$158,214
c. Funding Ratio: (a/b)	97.40%	95.02%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	1,553	1,615
b. Projected Annual Earnings	\$40,548	\$45,395
c. Average Annual Earnings (Actual \$)	\$26,109	\$28,108
d. Average Age	43.2	43.2
e. Average Service	10.2	9.9
2. Others		
a. Service Retirements (Table 4)	634	654
b. Disability Retirements (Table 5)	13	12
c. Survivors (Table 6)	29	39
d. Deferred Retirements (Table 7)	42	51
e. Terminated Other Non-vested (Table 7)	435	526
f. Total	1,153	1,282

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 96.35%. The corresponding ratio for the prior year was 99.88%.

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 1991 the ratio is 89.37%, which is a decrease from the 1990 value of 93.61%.

The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 95.02% 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 F1 to F6. It combines the cost value of the Assets Available for Benefits and one-third of the difference between the market value and cost value of those assets.

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

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 in accordance with Statement No. 5 of the Governmental Accounting Standards Board (GASB). Those requirements are:

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

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

GASB Disclosure

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

The July 1, 1991 Pension Benefit Obligation reported in Table 8 is reformatted for GASB reporting purposes in the following table:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	\$38,830,687
Current Employees	
Accumulated employee contributions including allocated investment income	\$24,918,644
Employer-financed vested	44,983,064
Employer-financed nonvested	338,439

Total Pension Benefit Obligation	\$109,070,834
Net Assets Available for Benefits at Cost	\$102,409,313
Total Benefit Obligation less Assets	\$6,661,521
Funded Ratio	93.89%

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

Sources of Actuarial Gains and Losses (Table 10)

The assumptions used in making the calculations using the Entry Age Normal Actuarial Cost Method are based on long-term expectations. Each year the actual experience will deviate from the long-term expectation. For 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 10.29% compared to the Required Contribution Rate of 11.09%.

Changes in Actuarial Assumptions

The actuarial assumptions are the same as those used in the prior valuation.

Changes in Plan Provisions

There were no changes in plan provisions since the prior valuation which impacted funding costs.

Old and New

Additional tables at the end of this report show membership data, statutory contributions and normal costs for the Old and New Plans.

TABLE 1

DULUTH TEACHERS RETIREMENT FUND

ACCOUNTING BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1991

	<u>Market Value</u>	<u>Cost Value</u>
A. ASSETS		
1. Cash, Equivalents, Short-term Securities	\$9,168	\$9,168
2. Investments		
a. Fixed Income	54,002	50,400
b. Equity	46,256	41,825
c. Real Estate	47	47
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	0	0
4. Other-	1,428	1,428
	-----	-----
B. TOTAL ASSETS	\$110,901	\$102,868
	=====	=====
C. AMOUNTS CURRENTLY PAYABLE	\$459	\$459
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$16,304	\$16,304
2. Employer Reserves	94,138	86,105
3. MPRIF Reserves	0	0
4. Non-MPRIF Reserves	0	0
	-----	-----
5. Total Assets Available for Benefits	\$110,442	\$102,409
	-----	-----
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	\$110,901	\$102,868
	=====	=====
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$102,409
2. Market Value (D5)	\$110,442	
3. Cost Value (D5)	102,409	

4. Market Cover Cost: (F2-F3)	\$8,033	
5. 1/3 of Market Over Cost: (F4)/3		2,678

6. Actuarial Value of Assets (F1+F5) (Same as "Current Assets")		\$105,087
		=====

TABLE 2

DULUTH TEACHERS RETIREMENT FUND
CHANGE IN ASSETS AVAILABLE FOR BENEFITS
(DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1991

	<u>Market Value</u>	<u>Cost Value</u>
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$102,600	\$94,481
B. OPERATING REVENUES		
1. Member Contributions	\$2,043	\$2,043
2. Employer Contributions	2,449	2,449
3. Investment Income	5,998	5,998
4. MPRIF Income	0	0
5. Net Realized Gain (Loss)	3,247	3,247
6. Other	5	5
7. Net Change in Unrealized Gain (Loss)	(86)	0
	-----	-----
8. Total Revenue	\$13,656	\$13,742
	-----	-----
C. OPERATING EXPENSES		
1. Service Retirements	\$4,738	\$4,738
2. Disability Benefits	86	86
3. Survivor Benefits	187	187
4. Refunds	273	273
5. Expenses	530	530
6. Other	0	0
	-----	-----
7. Total Disbursements	\$5,814	\$5,814
	-----	-----
D. OTHER CHANGES IN RESERVES	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	\$110,442	\$102,409
	=====	=====

TABLE 3

DULUTH TEACHERS RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1991

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	32	1							33
25-29	81	36	10						127
30-34	51	41	52						144
35-39	61	48	75	38	6				228
40-44	104	65	80	42	72	26			389
45-49	24	35	34	27	49	86	19		274
50-54	15	12	22	23	32	54	32	13	203
55-59	8	10	7	15	22	32	31	26	151
60-64	7	2	3	6	8	14	7	5	52
65+	6	1			3	1	3		14
ALL	389	251	283	151	192	213	92	44	1,615

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	3,136	9,456							3,328
25-29	4,200	19,555	24,422						10,145
30-34	2,590	16,707	23,695						14,231
35-39	3,208	21,411	26,736	34,979	41,601				21,085
40-44	3,327	24,137	28,224	34,038	40,713	43,481			24,844
45-49	2,525	25,282	28,698	36,914	42,134	41,717	42,754		34,243
50-54	7,493	20,842	29,425	36,291	41,142	42,252	41,885	44,250	36,248
55-59	1,270	18,902	29,507	39,616	43,117	41,759	44,713	44,049	38,518
60-64	1,237	17,874	29,809	32,034	41,882	43,632	42,247	48,376	34,799
65+	2,739	35,761			40,542	41,363	41,482		24,259
ALL	3,400	21,476	27,062	35,607	41,496	42,199	43,032	44,600	26,393

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	1,322	5,390	7,658	5,376	7,967	8,988	3,958	1,962	42,624

TABLE 4

DULUTH TEACHERS RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1991

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54								
55-59	21	22	1					44
60-64	24	81	49					154
65-69	3	29	77	14				123
70-74	1	3	49	34	10			97
75-79		1	3	50	30			84
80-84				3	50	19	1	73
85+					9	39	31	79
ALL	49	136	179	101	99	58	32	654

AVERAGE ANNUAL BENEFIT

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54								
55-59	13,368	12,286	13,053					12,820
60-64	12,337	9,553	7,473					9,325
65-69	9,317	7,506	6,176	2,308				6,126
70-74	4,551	3,250	5,370	4,025	1,778			4,454
75-79		866	3,367	4,342	3,228			3,868
80-84				3,090	4,189	3,760	2,685	4,012
85+					4,716	4,563	4,078	4,390
ALL	12,435	9,356	6,302	3,916	3,702	4,300	4,035	6,346

AGE	TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
ALL	609	1,272	1,128	395	366	249	129	4,150

TABLE 5

DULUTH TEACHERS RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1991

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		1						1
50-54	1							1
55-59	1	1						2
60-64	1	1	1					3
65-69	1	2	1			1		5
70-74	1	3	2	1	1	3		11
75-79	4			2	1			7
80-84			1	2		1		4
85+	1	1			1	1	1	5
ALL	10	9	5	5	3	6	1	39

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		533						533
50-54	9,354							9,354
55-59	3,964	6,450						5,207
60-64	3,189	2,033	5,920					3,714
65-69	3,465	9,184	5,735			1,537		5,821
70-74	9,271	2,929	4,171	2,080	2,346	1,942		3,332
75-79	2,611			4,009	1,856			2,903
80-84			2,520	3,946		3,024		3,359
85+	2,274	2,761			2,682	2,502	2,709	2,586
ALL	4,196	4,326	4,503	3,598	2,295	2,148	2,709	3,689

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS SINCE DEATH								
AGE	<1	1-4	5-9	10-14	15-19	20-24	25+	ALL
ALL	41,960	38,934	22,515	17,990	6,885	12,888	2,709	143,871

TABLE 6

DULUTH TEACHERS RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1991

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50			2					2
50-54		1						1
55-59		1			1			2
60-64	1	2	1	1				5
65-69			2					2
70-74								
75-79								
80-84								
85+								
ALL	1	4	5	1	1			12

AVERAGE ANNUAL BENEFIT

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50			4,088					4,088
50-54		12,743						12,743
55-59		17,816			2,724			10,270
60-64	12,829	5,902	5,374	2,381				6,478
65-69			5,119					5,119
70-74								
75-79								
80-84								
85+								
ALL	12,829	10,591	4,758	2,381	2,724			7,007

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED								
AGE	<1	1-4	5-9	10-14	15-19	20-24	25+	ALL
ALL	12,829	42,364	23,790	2,381	2,724			84,084

TABLE 7

DULUTH TEACHERS RETIREMENT FUND

RECONCILIATION OF MEMBERS

		Terminated	
		Deferred Retirement *	Other Non-Vested *
	Actives		
A.	ON JUNE 30, 1990	1,553	42 435
B.	ADDITIONS	277	9 143
C.	DELETIONS		
1.	Service Retirement	(36)	0 0
2.	Disability	(1)	0 0
3.	Death	(4)	0 0
4.	Terminated - Deferred	(9)	0 0
5.	Terminated - Refund	(33)	0 0
6.	Terminated - Other Non-Vested	(143)	0 0
7.	Returned as Active	0	0 0
D.	DATA ADJUSTMENTS	11	0 (52)
	Vested	1,074	
	Non-Vested	541	
E.	TOTAL ON JUNE 30, 1991	1,615	51 526

		Recipients	
		Retirement Annuitants	Disabled Survivors
A.	ON JUNE 30, 1990	634	13 29
B.	ADDITIONS	43	0 7
C.	DELETIONS		
1.	Service Retirement	0	(1) 0
2.	Death	(20)	(1) 0
3.	Annuity Expired	0	0 0
4.	Returned as Active	0	0 0
D.	DATA ADJUSTMENTS	(3)	1 3
E.	TOTAL ON JUNE 30, 1991	654	12 39

* Actual new additions and deletions were not available due to insufficient detail in data reconciliation.

TABLE 8

DULUTH TEACHERS RETIREMENT FUND

ACTUARIAL BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1991

A.	CURRENT ASSETS (TABLE 1, F6)			\$105,087
B.	EXPECTED FUTURE ASSETS			
1.	Present Value of Expected Future Statutory Supplemental Contributions			\$4,619
2.	Present Value of Future Normal Costs			40,632
3.	Total Expected Future Assets			<u>\$45,251</u>
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			<u>\$150,338</u>
D.	CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>	<u>Total</u>
1.	Benefit Recipients			
a.	Retirement Annuities		\$35,285	\$35,285
b.	Disability Benefits		958	958
c.	Surviving Spouse and Child Benefits		1,250	1,250
2.	Deferred Retirements With Future Augmentation		1,162	1,162
3.	Former Members Without Vested Rights		176	176
4.	Active Members			
a.	Retirement Annuities	245	59,363	59,608
b.	Disability Benefits	5,540	0	5,540
c.	Survivor's Benefits	1,092	0	1,092
d.	Deferred Retirements	39	3,600	3,639
e.	Refund Liability Due to Death or Withdrawal	0	361	361
5.	Total Current Benefit Obligations	<u>\$6,916</u>	<u>102,155</u>	<u>\$109,071</u>
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			<u>\$49,143</u>
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			<u>\$158,214</u>
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			<u>\$3,984</u>
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			\$7,876

TABLE 9

DULUTH TEACHERS RETIREMENT FUND

DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
AND SUPPLEMENTAL CONTRIBUTION RATE
(DOLLARS IN THOUSANDS)

JULY 1, 1991

	Actuarial Present Value of Projected Benefits (1)	Actuarial Present Value of Future Normal Costs (2)	Actuarial Accrued Liability (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$101,622	\$30,248	\$71,374
b. Disability Benefits	9,576	4,001	\$5,575
c. Survivor's Benefit	1,922	731	\$1,191
d. Deferred Retirements	5,594	4,669	\$925
e. Refunds Due to Death or Withdrawal	669	983	(\$314)
	-----	-----	-----
f. Total	\$119,383	\$40,632	\$78,751
	-----	-----	-----
2. Deferred Retirements With Future Augmentation	1,162		1,162
3. Former Members Without Vested Rights	176		176
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	37,493		37,493
	-----	-----	-----
6. Total	\$158,214	\$40,632	\$117,582
	=====	=====	=====
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$117,582
2. Current Assets (Table 1, F6)			105,087

3. UAAL (B1-B2)			\$12,495
			=====
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020			\$982,755
2. Supplemental Contribution Rate (B3/C1)			1.27%

TABLE 10

DULUTH TEACHERS RETIREMENT FUND

CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
(DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1991

A.	UAAL AT BEGINNING OF YEAR	\$6,637
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1.	Normal Cost and Expenses	\$4,039
2.	Contribution	(4,492)
3.	Interest on A, B1 and B2	545
4.	Total (B1+B2+B3)	<hr/> \$92
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	<hr/> \$6,729
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1.	Salary Increases	\$3,761
2.	Investment Return	(1,012)
3.	MPRIF Mortality	0
4.	Mortality of Other Benefit Recipients	(890)
5.	Other Items	3,907
6.	Total	<hr/> \$5,766
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D5)	<hr/> \$12,495
F.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	0
G.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	0
H.	UAAL AT END OF YEAR (E+F+G)	<hr/> \$12,495 =====

TABLE 11

DULUTH TEACHERS RETIREMENT FUND
DETERMINATION OF CONTRIBUTION SUFFICIENCY
(DOLLARS IN THOUSANDS)

JULY 1, 1991

	<u>Percent of Payroll</u>	<u>Dollar Amount</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 353		
1. Employee Contributions	4.50%	\$2,043
2. Employer Contributions	5.79%	2,628
	-----	-----
3. Total	10.29%	\$4,671
	=====	=====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	6.46%	\$2,931
b. Disability benefits	0.82%	374
c. Survivors	0.15%	69
d. Deferred Retirement Benefits	0.95%	431
e. Refunds Due to Death or Withdrawal	0.21%	96
	-----	-----
f. Total	8.59%	\$3,901
	-----	-----
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	1.27%	577
3. Allowance for Expenses	1.23%	558
	-----	-----
4. Total	11.09%	\$5,036
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) (A3-B4)	-0.80%	(\$365)

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1991
is \$45,395

DULUTH TEACHERS' RETIREMENT FUND
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:	Pre-Retirement: 8.5% per annum
	Post-Retirement: 8.5% per annum
Salary Increases:	Reported salary increased 6.5% to current fiscal year and 6.5% annually for each future year.
Mortality:	Pre-Retirement:
	Male - 1971 Group Annuity Mortality Table male rates set back 8 years
	Female - 1971 Group Annuity Mortality Table male rates set back 8 years
	Post-Retirement:
	Male - Same as above
	Female - Same as above
Retirement Age:	Post-Disability:
	Male - Same as above
	Female - Same as above
Separation:	Age 61 for the Old Plan and age 63 for the New Plan. In addition, 30% of the Members are assumed to retire each year that they are eligible for Rule of 90.
Disability:	Graded rates shown in rate table.
Expenses:	Rates as shown in rate table.
Return of Contributions:	Prior year expenses expressed as percentage of prior year payroll.
	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.

TABLE 12
(Continued)

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Family Composition:	80% of Members are assumed to be married. Female is three years younger than male.
Social Security:	N/A
Benefit Increases After Retirement:	N/A
Special Consideration:	<p>Annual bonus payment totaling 1% of the year end assets is accounted for by using a 7.5% post- and pre-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> <p>Males - 40% elect 50% J&S option 40% elect 100% J&S option</p> <p>Females - 10% elect 50% J&S option 10% elect 100% J&S option</p>
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method with normal costs expressed as a level percentage of earnings. Under this method, Actuarial Gains (Losses) reduce (increase) the Unfunded Actuarial Accrued Liability.
Asset Valuation Method:	Cost Value plus one-third Unrealized Gains or Losses.
Payment on the Unfunded Actuarial Accrued Liability:	A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 6.5% per annum.

TABLE 12
(Continued)

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Separation Expressed as Number of Occurrences Per 10,000:

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
20	4	4	2,000	2,000	28	28	0	0
21	4	4	1,931	1,931	28	28	0	0
22	4	4	1,731	1,731	28	28	0	0
23	4	4	1,532	1,532	28	28	0	0
24	4	4	1,332	1,332	28	28	0	0
25	5	5	1,132	1,132	28	28	0	0
26	5	5	932	932	28	28	0	0
27	5	5	732	732	28	28	0	0
28	5	5	703	703	28	28	0	0
29	5	5	673	673	28	28	0	0
30	5	5	643	643	28	28	0	0
31	6	6	612	612	28	28	0	0
32	6	6	582	582	28	28	0	0
33	6	6	552	552	28	28	0	0
34	7	7	522	522	28	28	0	0
35	7	7	491	491	29	29	0	0
36	7	7	461	461	29	29	0	0
37	8	8	430	430	30	30	0	0
38	8	8	409	409	31	31	0	0
39	9	9	389	389	31	31	0	0
40	9	9	368	368	32	32	0	0
41	10	10	347	347	33	33	0	0
42	10	10	325	325	35	35	0	0
43	11	11	304	304	37	37	0	0
44	12	12	282	282	38	38	0	0
45	13	13	260	260	41	41	0	0
46	14	14	237	237	43	43	0	0
47	15	15	214	214	46	46	0	0
48	16	16	191	191	49	49	0	0
49	18	18	167	167	53	53	0	0

TABLE 12
(Continued)

DULUTH TEACHERS' RETIREMENT FUND
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Separation Expressed as Number of Occurrences Per 10,000:

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
50	20	20	143	143	57	57	0	0
51	23	23	118	118	62	62	0	0
52	26	26	92	92	68	68	0	0
53	29	29	67	67	74	74	0	0
54	33	33	40	40	80	80	0	0
55	38	38	13	13	87	87	0	0
56	42	42	0	0	95	95	0	0
57	47	47	0	0	104	104	0	0
58	53	53	0	0	114	114	0	0
59	59	59	0	0	125	125	0	0
60	65	65	0	0	136	136	0	0
61	71	71	0	0	149	149	0	0
62	78	78	0	0	163	163	0	0
63	85	85	0	0	0	0	10,000	10,000
64	93	93	0	0	0	0	0	0
65	100	100	0	0	0	0	0	0
66	109	109	0	0	0	0	0	0
67	119	119	0	0	0	0	0	0
68	131	131	0	0	0	0	0	0
69	144	144	0	0	0	0	0	0
70	159	159	0	0	0	0	0	0

TABLE 3A
OLD

DULUTH TEACHERS RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1991

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									
25-29									
30-34									
35-39				33	6				39
40-44				37	72	26			135
45-49				25	49	86	19		179
50-54				21	32	54	32	13	152
55-59				15	22	32	31	26	126
60-64				5	8	14	7	5	39
65+					3	1	3		7
ALL				136	192	213	92	44	677

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									
25-29									
30-34									
35-39				35,252	41,601				36,229
40-44				33,934	40,713	43,481			39,388
45-49				37,841	42,134	41,717	42,754		41,400
50-54				37,055	41,142	42,252	41,885	44,250	41,394
55-59				39,616	43,117	41,759	44,713	44,049	42,940
60-64				32,543	41,882	43,632	42,247	48,376	42,211
65+					40,542	41,363	41,482		41,062
ALL				36,030	41,496	42,199	43,032	44,600	41,029

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				4,900	7,967	8,988	3,958	1,962	27,776

TABLE 4A
OLD

DULUTH TEACHERS RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1991

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54								
55-59	11	15						26
60-64	4	30	20					54
65-69		12	48	14				74
70-74		1	34	34	10			79
75-79		1	3	50	30			84
80-84				3	50	19	1	73
85+					9	39	31	79
ALL	15	59	105	101	99	58	32	469

AVERAGE ANNUAL BENEFIT

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54								
55-59	9,993	11,447						10,832
60-64	16,307	7,996	4,063					7,155
65-69		7,287	4,623	2,308				4,617
70-74		112	4,646	4,025	1,778			3,958
75-79		866	3,367	4,342	3,228			3,868
80-84				3,090	4,189	3,760	2,685	4,012
85+					4,716	4,563	4,078	4,390
ALL	11,677	8,475	4,488	3,916	3,702	4,300	4,035	4,876

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

AGE	<1	1-4	5-9	10-14	15-19	20-24	25+	ALL
ALL	175	500	471	395	366	249	129	2,286

TABLE 5A
OLD

DULUTH TEACHERS RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1991

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		1						1
50-54	1							1
55-59								
60-64	1	1	1					3
65-69	1					1		2
70-74		3	2	1	1	3		10
75-79	4			2	1			7
80-84			1	2		1		4
85+	1	1			1	1	1	5
ALL	8	6	4	5	3	6	1	33

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50		533						533
50-54	9,354							9,354
55-59								
60-64	3,189	2,033	5,920					3,714
65-69	3,465					1,537		2,501
70-74		2,929	4,171	2,080	2,346	1,942		2,738
75-79	2,611			4,009	1,856			2,903
80-84			2,520	3,946		3,024		3,359
85+	2,274	2,761			2,682	2,502	2,709	2,586
ALL	3,591	2,352	4,196	3,598	2,295	2,148	2,709	3,033

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS SINCE DEATH								
AGE	<1	1-4	5-9	10-14	15-19	20-24	25+	ALL
ALL	28,728	14,112	16,784	17,990	6,885	12,888	2,709	100,089

TABLE 6A
OLD

DULUTH TEACHERS RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1991

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			2					2
50-54								
55-59					1			1
60-64		2	1	1				4
65-69			2					2
70-74								
75-79								
80-84								
85+								
ALL		2	5	1	1			9

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			4,088					4,088
50-54								
55-59					2,724			2,724
60-64		5,902	5,374	2,381				4,890
65-69			5,119					5,119
70-74								
75-79								
80-84								
85+								
ALL		5,902	4,758	2,381	2,724			4,522

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		11,804	23,790	2,381	2,724			40,698

TABLE 11
OLD

DULUTH TEACHERS RETIREMENT FUND
DETERMINATION OF CONTRIBUTION SUFFICIENCY
(DOLLARS IN THOUSANDS)

JULY 1, 1991

	<u>Percent of Payroll</u>	<u>Dollar Amount</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 353		
1. Employee Contributions	4.50%	\$1,331
2. Employer Contributions	5.79%	1,713
	-----	-----
3. Total	10.29%	\$3,044
	=====	=====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	6.13%	\$1,813
b. Disability benefits	0.74%	218
c. Survivors	0.13%	38
d. Deferred Retirement Benefits	1.09%	321
e. Refunds Due to Death or Withdrawal	0.20%	61
	-----	-----
f. Total	8.29%	\$2,451
	-----	-----

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1991
is \$29,582

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF PLAN PROVISIONS

Eligibility:	A teacher who is employed by the Board of Education of the City of Duluth. Also includes any employees of the Retirement Fund and certain part-time employees licensed by the State Board of Education. Employees in the Old Plan are those hired before July 1, 1981 who have not elected to join the New Plan.
Contributions	
Member:	4.5% of salary.
Employer:	5.79% of salary.
Credited Service:	Earned while employed by the school district in a position with respect to which regular contributions are made. Credit is granted for service less than a legal school year on a pro rata basis.
Salary:	Annual contract salary.
Average Salary:	Average of the five highest years of annual salary.

RETIREMENT

Normal Retirement Benefit

Eligibility:	Age 60 and one year of Credited Service.
Amount:	<p>The greater of</p> <p>1.25% of Average Salary for each year of Credited Service</p> <p>or</p> <p>1.5% of Average Salary for each year of Credited Service assuming augmentation to age 65 at 3% per year and actuarial reduction for each month Member is under age 65.</p> <p>Minimum benefit for employees who were Members on June 30, 1971 is equal to the actuarial equivalent of 2.4 times the accumulated regular contributions.</p>

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF PLAN PROVISIONS

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
1.25% 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

1.5% of Average Salary for each year of Credited Service assuming augmentation to age 65 at 3% per year and actuarial reduction for each month the Member is under age 65.

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:

If the investment income of the fund was at least 6% of the asset value of the fund at the end of the year, the Board of Trustees may declare a bonus of up to 1% of the asset value of the fund at the end of the previous fiscal year. This bonus is allocated to those eligible on a prorated basis according to the combined number of years of service and years receiving a benefit. A retired Member is eligible if receiving an annuity for at least three years.

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF PLAN PROVISIONS

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 preceding fiscal year July 1, 1988 through June 30, 1989. In each following year, the lump sum will increase by the same increase that is applied to regular annuities.

DISABILITY

Disability Benefit

Eligibility:

Totally and permanently disabled before the age of 60 with five years of Credited Service.

Amount:

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.

Form of Payment:

Same as for retirement.

Benefit Increases:

Same as for retirement.

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF PLAN PROVISIONS

DEATH

Return of Contributions I

Eligibility:	Death while active.
Amount:	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

Eligibility:	Death of Member who terminated employment after 10 years of service.
Amount:	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.
--------------	---

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF PLAN PROVISIONS

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

Eligibility: Termination from teaching service.

Amount: 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

Eligibility: Ten years of Credited 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.

TABLE 3B
NEW

DULUTH TEACHERS RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1991

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	32	1							33
25-29	81	36	10						127
30-34	51	41	52						144
35-39	61	48	75	5					189
40-44	104	65	80	5					254
45-49	24	35	34	2					95
50-54	15	12	22	2					51
55-59	8	10	7						25
60-64	7	2	3	1					13
65+	6	1							7
ALL	389	251	283	15					938

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	3,136	9,456							3,328
25-29	4,200	19,555	24,422						10,145
30-34	2,590	16,707	23,695						14,231
35-39	3,208	21,411	26,736	33,183					17,961
40-44	3,327	24,137	28,224	34,809					17,114
45-49	2,525	25,282	28,698	25,326					20,756
50-54	7,493	20,842	29,425	28,269					20,910
55-59	1,270	18,902	29,507						16,229
60-64	1,237	17,874	29,809	29,489					12,563
65+	2,739	35,761							7,456
ALL	3,400	21,476	27,062	31,776					15,830

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	1,322	5,390	7,658	476					14,848

TABLE 4B
NEW

DULUTH TEACHERS RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1991

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54								
55-59	10	7	1					18
60-64	20	51	29					100
65-69	3	17	29					49
70-74	1	2	15					18
75-79								
80-84								
85+								
ALL	34	77	74					185

AVERAGE ANNUAL BENEFIT

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54								
55-59	17,086	14,090	13,053					15,697
60-64	11,544	10,483	9,835					10,507
65-69	9,317	7,665	8,766					8,418
70-74	4,551	4,819	7,028					6,645
75-79								
80-84								
85+								
ALL	12,772	10,042	8,891					10,083

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED								
AGE	<1	1-4	5-9	10-14	15-19	20-24	25+	ALL
ALL	434	773	657					1,865

TABLE 5B
NEW

DULUTH TEACHERS RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1991

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54								
55-59	1	1						2
60-64								
65-69		2	1					3
70-74	1							1
75-79								
80-84								
85+								
ALL	2	3	1					6

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54								
55-59	3,964	6,450						5,207
60-64								
65-69		9,184	5,735					8,034
70-74	9,271							9,271
75-79								
80-84								
85+								
ALL	6,618	8,273	5,735					7,298

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS SINCE DEATH								
AGE	<1	1-4	5-9	10-14	15-19	20-24	25+	ALL
ALL	13,236	24,819	5,735					43,788

TABLE 6B
NEW

DULUTH TEACHERS RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1991

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54		1						1
55-59		1						1
60-64	1							1
65-69								
70-74								
75-79								
80-84								
85+								
ALL	1	2						3

AVERAGE ANNUAL BENEFIT

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								
50-54		12,743						12,743
55-59		17,816						17,816
60-64	12,829							12,829
65-69								
70-74								
75-79								
80-84								
85+								
ALL	12,829	15,280						14,463

AGE	TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
ALL	12,829	30,560						43,389

TABLE 11
NEW

DULUTH TEACHERS RETIREMENT FUND
DETERMINATION OF CONTRIBUTION SUFFICIENCY
(DOLLARS IN THOUSANDS)

JULY 1, 1991

	<u>Percent of Payroll</u>	<u>Dollar Amount</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 353		
1. Employee Contributions	4.50%	\$712
2. Employer Contributions	5.79%	915
3. Total	10.29%	\$1,627
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	7.07%	\$1,118
b. Disability benefits	0.99%	156
c. Survivors	0.19%	31
d. Deferred Retirement Benefits	0.70%	110
e. Refunds Due to Death or Withdrawal	0.22%	35
f. Total	9.17%	\$1,450

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1991
is \$15,813

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF PLAN PROVISIONS

Eligibility:	A teacher who is employed by the Board of Education of the City of Duluth. Also includes any employees of the Retirement Fund and certain part-time employees licensed by the State Board of Education. Employees in the New Plan are those who joined on or after July 1, 1981 including any Old Plan Members who may elect to join any time prior to retirement.
Contributions	
Member:	4.5% of salary.
Employer:	5.79% of salary.
Allowable Service:	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.
Salary:	Total compensation. Excludes any lump-sum annual leave or sick leave payments and lump-sum payment at separation.
Average Salary:	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 and three years of Allowable Service. Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.
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DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF PLAN PROVISIONS

Amount: 1.5% of Average Salary for each year of Allowable Service.

Early Retirement Benefit

Eligibility: 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.

Amount: Hired before July 1, 1989:

The greater of
1% of Average Salary for the first 10 years of Allowable Service and 1.5% of Average Salary for each subsequent year with reduction of 0.25% for each month the Member is under age 65 at time of retirement (age 62 if 30 years of Allowable service). No reduction if age plus years of Allowable Service totals 90.

or

1.5% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3% per year and actuarial reduction for each month the Member is under age 65.

Hired after June 30, 1989:

1.5% 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.
Guaranteed refund.
A larger life annuity before age 62 and reduced thereafter.

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF PLAN PROVISIONS

Benefit Increases:

If the investment income of the fund was at least 6% of the asset value of the fund at the end of the year, the Board of Trustees may declare a bonus of up to 1% of the asset value of the fund at the end of the previous fiscal year. This bonus is allocated to those eligible on a prorated basis according to the combined number of years of service and years receiving a benefit. A retired Member is eligible if receiving an annuity for at least three years.

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 \$25 times each full year of Credited Service. In each following year, the lump-sum payment will increase by the same percentage increase that is applied to regular annuities.

DISABILITY

Disability Benefit

Eligibility:

Totally and permanently disabled under normal retirement age and is age 50 or older 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.

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF PLAN PROVISIONS

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 actuarially equivalent optional annuity.

Benefit Increase: Same as for retirement.

DEATH

**Surviving Spouse
Optional Annuity**

Eligibility: Member who dies before retirement benefits commence, if age 50 with three years of Allowable Service or any age with 30 years of Allowable Service. If the Member dies before age 55, benefits commence when Member would have been age 55.

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

Benefit Increases: Same as for a retired person if payments have been made over three years. The bonus is allocated to those eligible on the same prorated basis as is done for retired members.

DULUTH TEACHERS' RETIREMENT FUND

SUMMARY OF PLAN PROVISIONS

Refund of Member's
Contributions

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

Amount: 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

Eligibility: Termination from teaching service.

Amount: 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.