

DULUTH TEACHERS' RETIREMENT FUND

ACTUARIAL VALUATION REPORT

JULY 1, 1987

THE *Wyatt* COMPANY

ACTUARIES AND CONSULTANTS

SUITE 1525
8400 NORMANDALE LAKE BOULEVARD
MINNEAPOLIS, MINNESOTA 55437

(612) 921-8700

EMPLOYEE BENEFITS
COMPENSATION PROGRAMS
EMPLOYEE COMMUNICATIONS
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OFFICES IN PRINCIPAL CITIES
AROUND THE WORLD

December 30, 1987

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

RE: DULUTH TEACHERS' RETIREMENT FUND

Commission Members:

We have prepared an actuarial valuation of the Fund as of July 1, 1987 based on membership and financial data supplied by the Fund.

We certify that to the best of our knowledge and belief this actuarial valuation was performed 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 August 26, 1987.

Respectfully submitted,

THE WYATT COMPANY

Robert E. Perkins

Robert E. Perkins, FSA
Consulting Actuary

Michael C. Gunvalson

Michael C. Gunvalson, ASA
Associate Actuary

DULUTH TEACHERS' RETIREMENT FUND

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NEW

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DULUTH TEACHERS' RETIREMENT FUND

REPORT HIGHLIGHTS (DOLLARS IN THOUSANDS)

	<u>07/01/86</u> <u>VALUATION</u>	<u>07/01/87</u> <u>VALUATION</u>
A. CONTRIBUTIONS (TABLE 11)		
1. Statutory Contributions - Chapter 354A % of Payroll	10.29%	10.29%
2. Required Contributions - Chapter 356 % of Payroll	11.02%	10.39%
3. Sufficiency (Deficiency) (A1-A2)	-0.73%	-0.10%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$64,673	\$75,130
b. Current Benefit Obligations (Table 8)	\$70,954	\$77,623
c. Funding Ratio (a/b)	91.15%	96.79%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$64,673	\$75,130
b. Actuarial Accrued Liability (Table 9)	\$78,011	\$85,504
c. Funding Ratio (a/b)	82.90%	87.87%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$107,393	\$123,102
b. Current and Expected Future Benefit Obligations	\$112,037	\$123,744
c. Funding Ratio (a/b)	95.85%	99.48%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	1,251	1,605
b. Projected Annual Earnings	\$33,497	\$36,683
c. Average Annual Earnings (Actual \$)	\$26,776	\$22,855
d. Average Age	43.5	41.9
e. Average Service	11.5	8.8
2. Others		
a. Service Retirements (Table 4)	576	628
b. Disability Retirements (Table 5)	7	11
c. Survivors (Table 6)	25	26
d. Deferred Retirements (Table 7)	58	60
e. Terminated Other Non-vested (Table 7)	0	0
f. Total	666	725

DULUTH TEACHERS' RETIREMENT FUND

COMMENTARY

Purpose

The purpose of this valuation is to determine the financial status of the Fund. 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 statutory contributions for the Duluth Teachers' Retirement Fund are not sufficient for 1987 by an amount of 0.10% of payroll. According to this valuation a contribution rate of 10.39% is required to comply with Minnesota Law.

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

- o 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. This ratio is based on Statement No. 5 of the Governmental Accounting Standards Board. This year's ratio is 96.79%. The corresponding ratio for the prior year was 91.15%.
- o 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. For 1987 the ratio is 87.87%, which is an

increase from the 1986 value of 82.90%.

- o The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This ratio which is less than 100%, verifies that the current statutory contributions are inadequate.

Asset Information

Beginning in 1984, changes in Section 356.215 of Minnesota Statutes require that the asset value used for actuarial purposes reflect a portion of the unrealized gains and losses. Only a portion of these gains and losses are considered because market values are typically volatile and could produce erratic changes in the contribution requirements from year to year.

The calculation of assets for actuarial purposes begins with the reporting of Total Assets by the Fund (Table 1, line B). These Total Assets, reduced by any Amounts Currently Payable (line C), produce the Assets Available for Benefits (line D5), which is the starting value for determining the Actuarial Value of Assets.

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

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.

The term MPRIF appears on some of the tables with a corresponding value of zero. MPRIF stands for Minnesota Post Retirement Investment Fund, which is used by many of the public funds. For purposes of consistency all of the actuarial reports follow the same format.

Membership Data

Tables 3 through 6 summarize statistical information on members by category. Active members are grouped by age and completed years of service in Table 3. The earnings shown for these members are for the prior fiscal year except in the case of fulltime new hires where earnings have been annualized.

The service retirements are shown in Table 4 and disabled members are shown in Table 5. The annuities that are shown in Table 4 do not include the temporary higher benefit that is payable prior to the commencement of Social Security benefits under the level income option. The survivors category (Table 6) includes spouses and children of deceased members.

The reconciliation of active members is shown in Tables 7 and 15. The data adjustment entry for the service retirements reduces the amounts previously reported to be consistent with the benefits that are reported in Table 4.

Actuarial Balance Sheet

An actuarial balance sheet is required by Section 356.215, Subdivision 4f of Minnesota Law. This balance sheet (Table 8) establishes a method for evaluating both current and future levels of funding.

Current funding levels are evaluated by comparing Current Assets on line A to Current Benefit Obligations on line D5. The difference between the obligations and the assets is shown as Current Unfunded Actuarial Liability on line G.

The Current Benefit Obligation amounts in Table 8 are required to be disclosed by Statement No. 5 of 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 first step in the calculation for active members involves projecting salaries and service to determine future benefits payable under the plan and then discounting those projected benefits to the date of the valuation. The second step is to determine the discounted value of benefits for the non-active members. The result of the first two steps is shown on line F, Total Current and Expected Future Benefit Obligations.

The third step is to determine the portion that represents Current Benefit Obligations. In the case of active members the Current Benefit Obligation is computed by attributing an equal benefit amount to each year of credited and expected future employee service. For all others, their entire liability is considered a Current Benefit Obligation.

Current and future funding levels are evaluated by comparing Current and Future Expected Assets on line C to Current and Expected Future Benefit Obligations on line F. The difference between the obligations and the assets is shown as the Current and Future Unfunded Actuarial Liability on line H.

Since line F has already been calculated, the remaining step is to determine the Expected Future Assets . The statutory contribution rate in excess of the combined normal cost rate and expense rate is first calculated. The amount of assets for line B1 can be determined by projecting from the valuation date to the amortization date (the date for paying off all unfunded liabilities) on the assumption that total payroll is increasing at 6.5% annually and then discounted to the date of the valuation.

The Current Unfunded Actuarial Liability, line G, is a measurement of the status of the funding to the date of the valuation. The Current and Future Unfunded Actuarial Liability is a measurement of the adequacy of the current statutory contribution level.

GASB Disclosure

Table 8 shows that on July 1, 1987, the Pension Benefit Obligation consisted of the following components:

Retirees and beneficiaries currently receiving benefits	
and terminated employees not yet receiving benefits	\$ 29,817,000
Current Employees -	
Accumulated employee contributions	
including allocated investment income	16,266,000 *
Employer-financed vested	24,602,000
Employer-financed nonvested	<u>6,938,000</u>
Total Pension Benefit Obligation	\$ 77,623,000

* Estimated

Contribution Sufficiency

The approach used by the State of Minnesota to determine contribution sufficiency is the Entry Age Normal 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) shows similarities and differences. The similarity is that both approaches calculate the value of all future benefits the same way. This can be verified by comparing line F of Table 8 to line A6, column 1, of Table 9. The difference arises from the technique for allocating liabilities between 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.

An Unfunded Actuarial Accrued Liability is computed under the Entry Age Normal 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. Prior to 1984 these payments were calculated to be a level dollar amount similar to a fixed interest rate mortgage. The method of funding was changed in 1984 to produce a series of payments that remain a constant percentage of payroll each year.

Under this new approach the payments will increase 6.5% each year since 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 actuarial liability. After a few years the annual payment will begin to cover not only the interest but also repay a portion of the unfunded.

Projected Cash Flow

Table 12 illustrates the anticipated cash flow over the amortization period. The cash flow begins with the Current Assets. Contributions are then added based on the present statutory rates for employers and employees. As members become eligible for payments, disbursements and expenses are made from the Fund.

This projected cash flow assumes that future payrolls increase by 6.5%. For purposes of this table only, new members are assumed to be hired in order to replace those who terminate from the active group. This open group method provides a more realistic picture of future cash flow. The statutory interest rate of 8% is used to project future investment return. The assumed bonus payment of 1% has been taken out of year end assets and added to the disbursements in the following year.

Plan Provisions

Vesting eligibility for New Plan members has been reduced from 10 years to 5 years. This change applies to the Deferred Annuity, the Normal Retirement Benefit, the Early Retirement Benefit and the Disability Benefit.

	Impact Due to Change In <u>Eligibility</u>
Actuarial Accrued Liability	\$14,000
Normal Cost	.02%
Supplemental Contribution	<u>.00</u>
Required Contribution	.02%

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, 1987

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS		
1. Cash, Equivalents, Short-Term Securities	\$3,777	\$3,777
2. Investments		
a. Fixed Income	24,684	21,169
b. Equity	60,743	40,842
c. Real Estate	64	64
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	0	0
4. Other	1,474	1,474
	-----	-----
B. TOTAL ASSETS	\$90,742	\$67,326
	=====	=====
C. AMOUNTS CURRENTLY PAYABLE	\$1	\$1
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$11,623	\$11,623
2. Employer Reserves	79,118	55,702
3. MPRIF Reserves	0	0
4. Non-MPRIF Reserves	0	0
	-----	-----
5. Total Assets Available for Benefits	\$90,741	\$67,325
	-----	-----
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	\$90,742	\$67,326
	=====	=====
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$67,325
2. Market Value (D5)	\$90,741	
3. Cost Value (D5)	67,325	

4. Market Over Cost (F2-F3)	\$23,416	
5. 1/3 of Market Over Cost(F4)/3		7,805

6. Actuarial Value of Assets (F1+F5) (Same as "Current Assets")		\$75,130
		=====

TABLE 2

DULUTH TEACHERS' RETIREMENT FUND

CHANGES IN ASSETS AVAILABLE FOR BENEFITS AND ASSET ALLOCATION
(DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1987

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS AVAILABLE AT BEGINNING OF YEAR	\$81,716	\$56,152
B. OPERATING REVENUES		
1. Member Contributions	\$1,691	\$1,691
2. Employer Contributions	2,062	2,062
3. Investment Income	3,510	3,510
4. MPRIF Income	0	0
5. Net Realized Gain (Loss)	8,177	8,177
6. Other	3	3
7. Net Change in Unrealized Gain (Loss)	(2,148)	0
	-----	-----
8. Total Revenue	\$13,295	\$15,443
	-----	-----
C. OPERATING EXPENSES		
1. Service Retirements	\$3,808	\$3,808
2. Disability Benefits	41	41
3. Survivor Benefits	111	111
4. Refunds	35	35
5. Expenses	275	275
6. Other	0	0
	-----	-----
7. Total Disbursements	\$4,270	\$4,270
	-----	-----
D. CHANGES IN ACCOUNTING METHOD	0	0
E. ASSETS AVAILABLE AT END OF YEAR	\$90,741	\$67,325
	=====	=====

TABLE 3

DULUTH TEACHERS' RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1987

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	32	6							38
25-29	72	42	1						115
30-34	107	123	39	5					274
35-39	63	86	40	59	39				287
40-44	87	46	29	36	92	30			320
45-49	26	24	21	28	59	40	14		212
50-54	12	15	14	23	36	38	41	6	185
55-59	14	4	7	11	30	23	18	12	119
60-64	19	1		8	5	8	1	1	43
65+	10		1			1			12
TOTAL	442	347	152	170	261	140	74	19	1,605

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	2,050	19,073							4,738
25-29	4,241	16,928	22,599						9,034
30-34	2,311	15,329	23,002	26,160					11,535
35-39	2,864	18,493	22,118	31,278	36,297				20,615
40-44	3,706	21,771	26,222	33,224	35,013	35,405			23,637
45-49	3,105	20,702	24,953	33,761	35,784	36,138	37,239		28,892
50-54	3,118	16,721	28,933	35,101	32,621	36,313	38,997	32,899	31,628
55-59	1,590	16,800	23,908	33,181	37,208	34,649	36,116	42,247	31,026
60-64	2,510	22,001		28,677	37,318	37,754	28,396	35,603	19,807
65+	1,037		19,794			34,048			5,351
ALL	2,985	17,694	24,218	32,467	35,346	35,861	37,821	38,945	21,461

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

<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
1,320	6,140	3,681	5,519	9,224	5,021	2,799	740	34,444

DULUTH TEACHERS' RETIREMENT FUND

TABLE 4

SERVICE RETIREMENTS AS OF JUNE 30, 1987

AGE	YEARS RETIRED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59	41	40						81
60-64	19	68	23					110
65-69	3	40	51	10				104
70-74	1	1	41	46	2			91
75-79				62	34	1		97
80-84				10	49	10	1	70
85+					10	37	28	75
TOTAL	64	149	115	128	95	48	29	628

AVERAGE ANNUAL ANNUITY

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59	7,563	5,828						6,706
60-64	6,215	6,046	3,693					5,584
65-69	3,937	5,578	4,544	1,877				4,668
70-74	112	5,895	4,022	3,860	956			3,851
75-79				3,777	3,769	1,723		3,753
80-84				3,733	3,974	3,113	2,498	3,796
85+					3,326	3,529	2,922	3,276
ALL	6,876	5,861	4,188	3,655	3,769	3,405	2,908	4,568

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
440	874	482	468	358	163	84	2,869

DULUTH TEACHERS' RETIREMENT FUND

TABLE 5

DISABILITY RETIREMENTS AS OF JUNE 30, 1987

AGE	YEARS DISABLED							TOTAL
	<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				1				1
55-59	2	1	1					4
60-64		2	1					3
65-69								0
70-74								0
75-79								0
80-84								0
85+							1	1
TOTAL	4	3	2	1	0	0	1	11

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	4,091							4,091
50-54				2,724				2,724
55-59	5,902	5,374	2,381					4,890
60-64		5,104	4,134					4,780
65-69								0
70-74								0
75-79								0
80-84								0
85+							1,090	1,090
TOTAL	4,997	5,194	3,258	2,724	0	0	1,090	4,172

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS OF DISABILITY

<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
19	16	7	3	0	0	1	46

DULUTH TEACHERS' RETIREMENT FUND

TABLE 6

SURVIVORS AS OF JUNE 30, 1987

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59		1						1
60-64		2	1					3
65-69			1	3	4			8
70-74			2	1	1			4
75-79		1	1	2				4
80-84				1		1		2
85+				2	1	1		4
TOTAL	0	4	5	9	6	2	0	26

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59		5,015						5,015
60-64		5,847	5,920					5,871
65-69			6,042	2,242	1,406			2,299
70-74			2,596	4,959	768			2,730
75-79		2,520	4,580	3,378				3,464
80-84				3,312		2,389		2,851
85+				1,792	1,453	1,549		1,647
ALL	0	4,807	4,347	2,815	1,308	1,969	0	3,003

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
0	19	22	25	8	4	0	78

DULUTH TEACHERS' RETIREMENT FUND
RECONCILIATION OF MEMBERS

TABLE 7

	<u>ACTIVES</u>	<u>TERMINATED</u>	
		<u>DEFERRED RETIREMENT</u>	<u>OTHER NON-VESTED</u>
A. On June 30, 1986	1,251	58	0
B. Additions	468	14	0
C. Deletions:			
1. Service Retirement	(54)	(9)	
2. Disability	(4)		
3. Death	0	0	
4. Terminated-Deferred	(6)		
5. Terminated-Refund	(50)	(2)	0
6. Terminated-Other Non-vested	0		
7. Returned as Active		(1)	0
D. Data Adjustments	0	0	0
	Vested 680		
	Non-Vested 925		
E. Total on June 30, 1987	1,605	60	0

	<u>RECIPIENTS</u>		
	<u>RETIREMENT ANNUITANTS</u>	<u>DISABLED</u>	<u>SURVIVORS</u>
A. On June 30, 1986	576	7	25
B. Additions	68	4	2
C. Deletions:			
1. Service Retirement		0	
2. Death	(16)	0	(1)
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	
D. Data Adjustments	0	0	0
E. Total on June 30, 1987	628	11	26

DULUTH TEACHERS' RETIREMENT FUND

TABLE 8

ACTUARIAL BALANCE SHEET (DOLLARS IN THOUSANDS)

JULY 1, 1987

A. CURRENT ASSETS (TABLE 1, F6)				\$75,130
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Statutory Supplemental Contributions				9,732
2. Present Value of Future Normal Costs				38,240
3. Total Expected Future Assets				47,972
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				\$123,102
D. CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>	<u>Total</u>	
1. Benefit Recipients				
a. Retirement Annuities		\$28,401	\$28,401	
b. Disability Benefits		367	367	
c. Surviving Spouse and Child Benefits		700	700	
2. Deferred Retirements		349	349	
3. Former Members without Vested Rights		0	0	
4. Active Members				
a. Retirement Annuities	2,487	38,185	40,672	
b. Disability Benefits	2,902	0	2,902	
c. Survivors' Benefits	1,408	0	1,408	
d. Deferred Retirements	141	1,909	2,050	
e. Refund Liability Due to Death or Withdrawal	0	774	774	
5. Total Current Benefit Obligations	\$6,938	\$70,685	\$77,623	
E. EXPECTED FUTURE BENEFIT OBLIGATIONS				\$46,121
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				\$123,744
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)				\$2,493
H. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)				\$642

TABLE 9

DULUTH TEACHERS' RETIREMENT FUND

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

JULY 1, 1987

	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	\$82,001	\$30,365	\$51,636
b. Disability Benefits	5,073	2,700	2,373
c. Survivors Benefits	2,401	944	1,457
d. Deferred Retirements	2,831	1,491	1,340
e. Refunds Due to Death or Withdrawal	1,621	2,740	(1,119)
f. Total	<u>\$93,927</u>	<u>\$38,240</u>	<u>\$55,687</u>
2. Deferred Retirements	\$349		\$349
3. Former Members Without Vested Rights	0		0
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	29,468		29,468
6. Total AAL	<u>\$123,744</u>	<u>\$38,240</u>	<u>\$85,504</u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$85,504
2. Current Assets (Table 1,F6)			75,130
3. UAAL (B1-B2)			<u>\$10,374</u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls through the Amortization Date of July 1, 2009			\$671,144
2. Supplemental Contribution Rate (B3/C1)			1.55%

TABLE 10

DULUTH TEACHERS' RETIREMENT FUND

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

YEAR ENDING JUNE 30, 1987

A. UAAL AT BEGINNING OF YEAR	\$13,338
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$3,352
2. Contribution	(3,753)
3. Interest on A, B1, and B2	1,051
4. Total (B1+B2+B3)	----- \$650 -----
C. EXPECTED UAAL AT END OF YEAR (A+B4)	\$13,988
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	\$178
2. Investment Return	(5,818)
3. MPRIF Mortality	0
4. Mortality of Other Benefit Recipients	(545)
5. Other Items	2,557
6. Total	----- (\$3,628) -----
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D6)	\$10,360
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	\$14
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	\$0
H. UAAL AT END OF YEAR (E+F+G)	----- \$10,374 =====

TABLE 11

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

JULY 1, 1987

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	4.50%	\$1,651
2. Employer Contributions	5.79%	2,124
3. Total	----- 10.29% =====	----- \$3,775 =====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	6.51%	\$2,390
b. Disability Benefits	0.55%	201
c. Survivors	0.20%	75
d. Deferred Retirement Benefits	0.31%	113
e. Refunds Due to Death or Withdrawal	0.54%	197
f. Total	----- 8.11% -----	----- \$2,976 -----
2. Supplemental Contribution Amortization by July 1, 2009 of UAAL of \$10,374	1.55%	\$569
3. Allowance for Expenses	0.73%	\$268
4. Total	----- 10.39%	----- \$3,813
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY)		
(A3-B4)	-0.10%	(\$38)

Note: Projected Annual Payroll for Fiscal Year Beginning
on July 1, 1987 is \$36,683

DULUTH TEACHERS' RETIREMENT FUND

TABLE 12

PROJECTED CASH FLOW JULY 1, 1987

<u>FISCAL YEAR</u>	<u>STATUTORY CONTRIBUTIONS</u>	<u>TRANSFERS</u>	<u>OTHER DISBURSEMENTS</u>	<u>INVESTMENT RETURN</u>	<u>CURRENT ASSETS YEAR END</u>
1987					\$75,130
1988	\$3,775	\$0	\$4,736	\$5,972	80,141
1989	4,020	0	4,764	6,382	85,779
1990	4,281	0	4,740	6,844	92,164
1991	4,560	0	4,804	7,363	99,283
1992	4,856	0	4,919	7,940	107,160
1993	5,172	0	5,125	8,575	115,782
1994	5,508	0	5,541	9,261	125,010
1995	5,866	0	5,924	9,998	134,950
1996	6,247	0	6,536	10,784	145,445
1997	6,653	0	7,473	11,603	156,228
1998	7,086	0	8,208	12,453	167,559
1999	7,546	0	9,113	13,342	179,334
2000	8,037	0	9,822	14,275	191,824
2001	8,559	0	10,692	15,261	204,952
2002	9,115	0	11,634	16,295	218,728
2003	9,708	0	12,860	17,372	232,948
2004	10,339	0	13,996	18,490	247,781
2005	11,011	0	15,091	19,659	263,360
2006	11,727	0	16,471	20,879	279,495
2007	12,489	0	18,455	22,121	295,650
2008	13,301	0	20,197	23,376	312,130
2009	14,165	0	21,607	24,673	329,361
2010	15,086	0	22,991	26,033	347,489
2011	16,067	0	24,706	27,454	366,304
2012	17,111	0	26,086	28,945	386,274

DULUTH TEACHERS' RETIREMENT FUND
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:	Pre-Retirement: 8% per annum Post-Retirement: 8% 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 GAM female rates Female - 1971 GAM female rates Post-Retirement: Male - Same as above Female - Same as above Post-Disability: Male - 1977 RRB rates Female - 1977 RRB rates
Retirement Age:	Old Plan: Age 63 New Plan: Age 63 with 30 years of service or age 65.
Separation:	Graded rates shown in rate table.
Disability:	Rates as shown in rate table.
Expenses:	Prior year expenses expressed as percentage of prior year payroll. (0.73% of payroll)
Return of Contributions:	All employees withdrawing after becoming eligible for a deferred benefit were assumed to take the larger of their contributions accumulated with interest or the value of their deferred benefit.
Family Composition:	80% of Members are assumed to be married. Female is three years younger than male.
Social Security:	NA
Benefit Increases After Retirement:	NA

TABLE 13
(cont)

Special Consideration:	Annual bonus payment totaling 1% of the year end assets is accounted for by using a 7% post and pre-retirement interest rate. Members in the Old Plan who were hired prior to age 33 are assumed to receive their retirement benefits from the New Plan. Members who terminated under Old Plan are assumed to take refund under the New Plan.
Actuarial Cost Method:	Entry Age Normal 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.
Projected Cash Flow Method:	Cash flows from the Fund were projected based on the current plan benefits, participant data, and actuarial assumptions. In addition, new entrants were assumed so that the total payroll would increase by 6.5% per annum.

TABLE 13
(cont)

SEPARATIONS EXPRESSED AS THE
NUMBER OF OCCURRENCES PER 10,000

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
20	3	3	2,000	2,000	28	28	0	0
21	3	3	1,931	1,931	28	28	0	0
22	3	3	1,731	1,731	28	28	0	0
23	3	3	1,532	1,532	28	28	0	0
24	3	3	1,332	1,332	28	28	0	0
25	3	3	1,132	1,132	28	28	0	0
26	4	4	932	932	28	28	0	0
27	4	4	732	732	28	28	0	0
28	4	4	703	703	28	28	0	0
29	4	4	673	673	28	28	0	0
30	5	5	643	643	28	28	0	0
31	5	5	612	612	28	28	0	0
32	5	5	582	582	28	28	0	0
33	6	6	552	552	28	28	0	0
34	6	6	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	11	11	325	325	35	35	0	0
43	12	12	304	304	37	37	0	0
44	13	13	282	282	38	38	0	0
45	14	14	260	260	41	41	0	0
46	15	15	237	237	43	43	0	0
47	17	17	214	214	46	46	0	0
48	18	18	191	191	49	49	0	0
49	20	20	167	167	53	53	0	0
50	22	22	143	143	57	57	0	0
51	23	23	118	118	62	62	0	0
52	25	25	92	92	68	68	0	0
53	27	27	67	67	74	74	0	0
54	30	30	40	40	80	80	0	0

TABLE 13
(cont)

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
55	33	33	13	13	87	87	0	0
56	36	36	0	0	95	95	0	0
57	39	39	0	0	104	104	0	0
58	44	44	0	0	114	114	0	0
59	49	49	0	0	125	125	0	0
60	55	55	0	0	136	136	0	0
61	62	62	0	0	149	149	0	0
62	69	69	0	0	163	163	0	0
63	77	77	0	0	0	0	10,000	10,000
64	86	86	0	0	0	0	0	0
65	96	96	0	0	0	0	0	0
66	106	106	0	0	0	0	0	0
67	116	116	0	0	0	0	0	0
68	129	129	0	0	0	0	0	0
69	145	145	0	0	0	0	0	0
70	165	165	0	0	0	0	0	0

DULUTH TEACHERS' RETIREMENT FUND

TABLE 3A
OLD

ACTIVE MEMBERS AS OF JUNE 30, 1987

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									0
25-29		1	1						2
30-34		7	35	5					47
35-39		4	34	59	39				136
40-44	2	1	29	36	92	30			190
45-49		1	17	28	59	40	14		159
50-54			12	23	36	38	41	6	156
55-59			7	11	30	23	18	12	101
60-64				8	5	8	1	1	23
65+			1			1			2
TOTAL	2	14	136	170	261	140	74	19	816

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									0
25-29			22,599						11,300
30-34		10,971	22,490	26,160					21,165
35-39		990	21,940	31,278	36,297				29,492
40-44	3,768	2,761	26,222	33,224	35,013	35,405			32,896
45-49		18,351	24,914	33,761	35,784	36,138	37,239		34,373
50-54			28,310	35,101	32,621	36,313	38,997	32,899	35,241
55-59			23,908	33,181	37,208	34,649	36,116	42,247	35,669
60-64				28,677	37,318	37,754	28,396	35,603	34,001
65+			19,794			34,048			26,921
ALL	3,768	7,277	24,019	32,467	35,346	35,861	37,821	38,945	32,696

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

<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
8	102	3,267	5,519	9,224	5,021	2,799	740	26,680

DULUTH TEACHERS' RETIREMENT FUND

TABLE 4A
OLD

SERVICE RETIREMENTS AS OF JUNE 30, 1987

AGE	YEARS RETIRED							TOTAL
	<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
50-54								0
55-59	11	17						28
60-64	10	34	23					67
65-69		28	49	10				87
70-74	1	1	40	46	2			90
75-79				62	34	1		97
80-84				10	49	10	1	70
85+					10	37	28	75
TOTAL	22	80	112	128	95	48	29	514

AVERAGE ANNUAL ANNUITY

AGE	YEARS RETIRED							ALL
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50								0
50-54								0
55-59	5,138	3,642						4,229
60-64	4,532	4,633	3,693					4,295
65-69		4,933	4,331	1,877				4,243
70-74	112	5,895	3,835	3,860	956			3,765
75-79				3,777	3,769	1,723		3,753
80-84				3,733	3,974	3,113	2,498	3,796
85+					3,326	3,529	2,922	3,276
ALL	4,634	4,543	4,023	3,655	3,769	3,405	2,908	3,871

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
102	363	451	469	358	163	84	1,990

DULUTH TEACHERS' RETIREMENT FUND

TABLE 5A
OLD

DISABILITY RETIREMENTS AS OF JUNE 30, 1987

AGE	YEARS DISABLED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	2							2
50-54				1				1
55-59	2	1	1					4
60-64		2	1					3
65-69								0
70-74								0
75-79								0
80-84								0
85+							1	1
TOTAL	4	3	2	1	0	0	1	11

AVERAGE ANNUAL BENEFIT

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	4,091							4,091
50-54				2,724				2,724
55-59	5,902	5,374	2,381					4,890
60-64		5,104	4,134					4,780
65-69								0
70-74								0
75-79								0
80-84								0
85+							1,090	1,090
TOTAL	4,997	5,194	3,258	2,724	0	0	1,090	4,172

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS OF DISABILITY

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
19	16	7	3	0	0	1	46

DULUTH TEACHERS' RETIREMENT FUND

TABLE 6A
OLD

SURVIVORS AS OF JUNE 30, 1987

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59								0
60-64		2	1					3
65-69			1	3	4			8
70-74			2	1	1			4
75-79		1	1	2				4
80-84				1		1		2
85+				2	1	1		4
TOTAL	0	3	5	9	6	2	0	25

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59								0
60-64		5,847	5,920					5,871
65-69			6,042	2,242	1,406			2,299
70-74			2,596	4,959	768			2,730
75-79		2,520	4,580	3,378				3,464
80-84				3,312		2,389		2,851
85+				1,792	1,453	1,549		1,647
ALL	0	4,738	4,347	2,815	1,308	1,969	0	2,923

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH							
<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
0	14	22	25	8	4	0	73

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

TABLE 11A
OLD

JULY 1, 1987

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	4.50%	\$1,279
2. Employer Contributions	5.79%	1,645
3. Total	----- 10.29% =====	----- \$2,924 =====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356 (NORMAL COST ONLY)		
1. Normal Cost		
a. Retirement Benefits	6.35%	\$1,806
b. Disability Benefits	0.52%	147
c. Survivors	0.23%	64
d. Deferred Retirement Benefits	0.38%	108
e. Refunds Due to Death or Withdrawal	0.52%	148
f. Total	----- 8.00% -----	----- \$2,273 -----

Note: Projected Annual Payroll for Fiscal Year Beginning
on July 1, 1987 is \$28,414

DULUTH TEACHERS' RETIREMENT FUND**TABLE 14A
OLD****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 prorata basis.
Salary	Annual contract salary.
Average Salary	Average of the 5 highest years of annual salary.
RETIREMENT	
Normal Retirement Benefit	
Eligibility	Age 60 and 1 year of Allowable Service.
Amount	1.25% of Average Salary for each year of Credited Service. 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.
Early Retirement Benefit	
Eligibility	Age 55 and 10 years of Credited Service.
Amount	Normal Retirement Benefit based on Credited Service and Average Salary at retirement date. The benefit is reduced 0.5% for each month the Member is under age 60.
Form of Payment	Life annuity. Actuarially equivalent options are: 5, 10, 15 or 20 year certain and life 50% or 100% bounce back joint and survivor (option is cancelled if Member is pre-deceased by beneficiary) 50% or 100% joint and survivor Other equivalent options approved by the Board.

TABLE 14A
OLD
(cont)

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 3 years.
DISABILITY	
Disability Benefit Eligibility	Totally and permanently disabled before the age of 60 with 5 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 Worker's 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.
DEATH	
Return of Contributions I Eligibility	Death while active.
Amount	Two times regular contributions accumulated with 5% interest.
Return of Contributions II Eligibility	Death of Member who terminated employment after 10 years of service.
Amount	Regular contributions accumulated with 5% interest.
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 in excess of benefits paid.

TABLE 14A
OLD
(cont)

Surviving Spouse
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.

Surviving Spouse
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. (Amended 1986)

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. A deferred annuity may be elected in lieu of a refund if the Member has 10 years of Credited Service.

Deferred Annuity
Eligibility

10 years of Credited Service.

Amount

Benefit computed under law in effect at termination. Amount is payable as a normal or early retirement.

DULUTH TEACHERS' RETIREMENT FUND

TABLE 3B
NEW

ACTIVE MEMBERS AS OF JUNE 30, 1987

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	32	6							38
25-29	72	41							113
30-34	107	116	4						227
35-39	63	82	6						151
40-44	85	45							130
45-49	26	23	4						53
50-54	12	15	2						29
55-59	14	4							18
60-64	19	1							20
65+	10								10
TOTAL	440	333	16	0	0	0	0	0	789

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	2,050	19,073							4,738
25-29	4,241	17,341							8,994
30-34	2,311	15,592	27,489						9,542
35-39	2,864	19,347	23,129						12,620
40-44	3,705	22,194							10,105
45-49	3,105	20,804	25,120						12,447
50-54	3,118	16,721	32,675						12,193
55-59	1,590	16,800							4,970
60-64	2,510	22,001							3,484
65+	1,037								1,037
ALL	2,982	18,132	25,910	0	0	0	0	0	9,841

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

	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
	1,312	6,037	415	0	0	0	0	0	7,764

DULUTH TEACHERS' RETIREMENT FUND

TABLE 4B
NEW

SERVICE RETIREMENTS AS OF JUNE 30, 1987

AGE	YEARS RETIRED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59	30	23						53
60-64	9	34						43
65-69	3	12	2					17
70-74			1					1
75-79								0
80-84								0
85+								0
TOTAL	42	69	3	0	0	0	0	114

AVERAGE ANNUAL ANNUITY

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59	8,453	7,443						8,015
60-64	8,084	7,460						7,591
65-69	3,937	7,083	9,771					6,844
70-74			11,534					11,534
75-79								0
80-84								0
85+								0
ALL	8,051	7,389	10,359	0	0	0	0	7,711

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
338	510	31	0	0	0	0	879

DULUTH TEACHERS' RETIREMENT FUND

TABLE 6B
NEW

SURVIVORS AS OF JUNE 30, 1987

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59		1						1
60-64								0
65-69								0
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	0	1	0	0	0	0	0	1

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59		5,015						5,015
60-64								0
65-69								0
70-74								0
75-79								0
80-84								0
85+								0
ALL	0	5,015	0	0	0	0	0	5,015

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
0	5	0	0	0	0	0	5

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

TABLE 11B
NEW

JULY 1, 1987

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	4.50%	\$372
2. Employer Contributions	5.79%	479
3. Total	----- 10.29% =====	----- \$851 =====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356 (NORMAL COST ONLY)		
1. Normal Cost		
a. Retirement Benefits	7.07%	\$584
b. Disability Benefits	0.65%	54
c. Survivors	0.13%	11
d. Deferred Retirement Benefits	0.06%	5
e. Refunds Due to Death or Withdrawal	0.59%	49
f. Total	----- 8.50% -----	----- \$703 -----

Note: Projected Annual Payroll for Fiscal Year Beginning
on July 1, 1987 is \$8,269

DULUTH TEACHERS' RETIREMENT FUND**TABLE 14B
NEW****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 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 payments at separation.
Average Salary	Average of the 5 highest successive years of Salary.
RETIREMENT	
Normal Retirement Benefit	
Eligibility	Age 65 and 5 years of Allowable Service. <u>(Amended 1987)</u> Age 62 and 30 years of Allowable Service.
Amount	1% of Average Salary for the first 10 years of Allowable Service and 1.5% of Average Salary for each subsequent year.
Early Retirement Benefit	
Eligibility	Age 55 and 5 years of Allowable Service. <u>(Amended 1987)</u> Any age with 30 years of Allowable Service.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.5% for each month the Member is under age 65 at time of retirement (age 62 if 30 years of Allowable Service). The reduction factor of 0.5% is replaced by 0.25% for each month the Member is under age 60.

TABLE 14B
NEW
(cont)

Form of Payment	<p>Life annuity.</p> <p>Actuarially equivalent options are:</p> <p>5, 10, 15, or 20 year certain and life</p> <p>50% or 100% joint and survivor</p> <p>50% or 100% bounce back joint and survivor (option is cancelled if Member is pre-deceased by beneficiary).</p> <p>Guaranteed refund</p> <p>A larger life annuity before age 62 and reduced thereafter.</p>
Benefit Increases	<p>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 3 years.</p>
DISABILITY	
Disability Benefit Eligibility	<p>Totally and permanently disabled under age 65 and is age 50 or older with 5 years of Allowable Service. Also the last 5 years must have been uninterrupted. <u>(Amended 1987)</u></p>
Amount	<p>Normal Retirement Benefit based on Allowable Service and Average Salary at disability without reduction for commencement before age 65. Benefit is reduced by Workers' Compensation.</p> <p>Payment may begin 90 days after disability and stops at age 65 or earlier if disability ceases or death occurs. Benefits paid while partially employed may be reduced.</p>
Form of Payment	Same as for retirement.
Benefit Increases	Same as for retirement.
Retirement Benefits Eligibility	Age 65 if still totally and permanently disabled.
Amount	<p>Optional annuity continues. Otherwise the larger of the disability benefit paid before age 65 or the normal retirement benefit available at age 65, or an actuarially equivalent optional annuity.</p>

TABLE 14B
NEW
(cont)

Benefit Increases Same as for retirement.

DEATH BENEFITS

Surviving Spouse Optional Annuity

Eligibility Member who dies before retirement benefits commence if age 50 with 20 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. (Amended 1986)

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 allocation is based on the years of service of the person on whose behalf the annuity is paid and the years receiving payment.

Refund of Member's Contributions With Interest

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.

TERMINATION BENEFITS

Refund of Member's Contributions

Eligibility Termination of teaching service.

Amount Member's contributions with 5% interest. A deferred annuity may be elected in lieu of a refund.

Deferred Annuity

Eligibility 5 years of Allowable Service. (Amended 1987)

Amount Benefit computed under law in effect at termination. Amount is payable as a normal or early retirement.