

DULUTH TEACHERS' RETIREMENT FUND

ACTUARIAL VALUATION REPORT

JULY 1, 1988

THE *Wyatt* COMPANY

AN INDEPENDENT WORLDWIDE BENEFITS
AND COMPENSATION CONSULTING FIRM

ACTUARIAL SERVICES
COMPENSATION PROGRAMS
ADMINISTRATIVE SYSTEMS
INTERNATIONAL SERVICES
ORGANIZATION SURVEYS

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HEALTH CARE CONSULTING

December 21, 1988

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, 1988 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 22, 1988.

Respectfully submitted,

THE WYATT COMPANY

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Robert E. Perkins, FSA
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DULUTH TEACHERS' RETIREMENT FUND

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DULUTH TEACHERS' RETIREMENT FUND

REPORT HIGHLIGHTS (DOLLARS IN THOUSANDS)

	<u>07/01/87</u> <u>VALUATION</u>	<u>07/01/88</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	10.39%	11.18%
3. Sufficiency (Deficiency) (A1-A2)	-0.10%	-0.89%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$75,130	\$76,279
b. Current Benefit Obligations (Table 8)	\$77,623	\$82,694
c. Funding Ratio (a/b)	96.79%	92.24%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$75,130	\$76,279
b. Actuarial Accrued Liability (Table 9)	\$85,504	\$90,759
c. Funding Ratio (a/b)	87.87%	84.05%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$123,102	\$124,717
b. Current and Expected Future Benefit Obligations	\$123,744	\$130,751
c. Funding Ratio (a/b)	99.48%	95.39%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	1,605	1,578
b. Projected Annual Earnings	\$36,683	\$38,751
c. Average Annual Earnings (Actual \$)	\$22,855	\$24,557
d. Average Age	41.9	42.5
e. Average Service	8.8	9.4
2. Others		
a. Service Retirements (Table 4)	628	625
b. Disability Retirements (Table 5)	11	10
c. Survivors (Table 6)	26	30
d. Deferred Retirements (Table 7)	60	51
e. Terminated Other Non-vested (Table 7)	0	159
f. Total	725	875

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 deficient for 1988 by an amount of 0.89% of payroll. According to this valuation a contribution rate of 11.18% 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 92.24%. The corresponding ratio for the prior year was 96.79%.
- 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 1988 the ratio is 84.05%, which is a

decrease from the 1987 value of 87.87%.

- 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 (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 gains and losses) are typically volatile and can produce erratic changes in the contribution requirements from year to year.

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

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, 4, 5, 6 and 7)

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 in Table 7 provides a method for tracking what happened to members during the past year.

Actuarial Balance Sheet (Table 8)

An actuarial balance sheet provides a method for evaluating 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. Current and future funding levels are evaluated by comparing the Total Current and Expected Future Assets on line C to the Total Current and Expected Future Benefit Obligations on line F.

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:

- o 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.
- o For non-active members - the discounted value of benefits.

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, 1988 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	\$30,543,000
Current Employees -	
Accumulated employee contributions including allocated investment income	18,163,000 *
Employer-financed vested	28,452,000
Employer-financed nonvested	5,536,000

Total Pension Benefit Obligation	\$82,694,000

* Estimated

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. The major sources of gain and loss, which have been identified, are:

- o A gain from salaries where the average increase was 4.2% compared to the expected 6.5%
- o A loss from Current Assets because the return was 3.1% instead of the assumed 8%.

Contribution Sufficiency (Table 11)

This report answers the question of "How adequate are the Statutory Contributions?" by comparing the Statutory Contributions to the Required Contributions.

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

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

Table 11 shows the Fund has a contribution deficiency since the Statutory Contribution Rate is 10.29% compared to the Required Contribution Rate of 11.18%.

Projected Cash Flow (Table 12)

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%. This is the only table in the report where 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.

Changes in Actuarial Assumptions

This valuation does not reflect any changes in actuarial assumptions since the prior valuation.

Changes in Plan Provisions

This valuation does not reflect any changes in plan provisions since the prior valuation.

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, 1988

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS		
1. Cash, Equivalents, Short-Term Securities	\$17,471	\$17,471
2. Investments		
a. Fixed Income	29,564	26,164
b. Equity	35,249	27,691
c. Real Estate	59	59
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	0	0
4. Other	2,153	2,153
	-----	-----
B. TOTAL ASSETS	\$84,496	\$73,538
	=====	=====
C. AMOUNTS CURRENTLY PAYABLE	\$912	\$912
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$12,916	\$12,916
2. Employer Reserves	70,668	59,710
3. MPRIF Reserves	0	0
4. Non-MPRIF Reserves	0	0
	-----	-----
5. Total Assets Available for Benefits	\$83,584	\$72,626
	-----	-----
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	\$84,496	\$73,538
	=====	=====
<hr/>		
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$72,626
2. Market Value (D5)	\$83,584	
3. Cost Value (D5)	72,626	

4. Market Over Cost (F2-F3)	\$10,958	
5. 1/3 of Market Over Cost(F4)/3		3,653

6. Actuarial Value of Assets (F1+F5) (Same as "Current Assets")		\$76,279
		=====

TABLE 2

DULUTH TEACHERS' RETIREMENT FUND

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

YEAR ENDING JUNE 30, 1988

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS AVAILABLE AT BEGINNING OF YEAR	\$90,741	\$67,325
B. OPERATING REVENUES		
1. Member Contributions	\$1,691	\$1,691
2. Employer Contributions	2,093	2,093
3. Investment Income	3,851	3,851
4. MPRIF Income	0	0
5. Net Realized Gain (Loss)	2,643	2,643
6. Other	2	2
7. Net Change in Unrealized Gain (Loss)	(12,458)	0
	-----	-----
8. Total Revenue	(\$2,178)	\$10,280
	-----	-----
C. OPERATING EXPENSES		
1. Service Retirements	\$4,337	\$4,337
2. Disability Benefits	56	56
3. Survivor Benefits	142	142
4. Refunds	110	110
5. Expenses	334	334
6. Other	0	0
	-----	-----
7. Total Disbursements	\$4,979	\$4,979
	-----	-----
D. CHANGES IN ACCOUNTING METHOD	0	0
E. ASSETS AVAILABLE AT END OF YEAR	\$83,584	\$72,626
	=====	=====

TABLE 3

DULUTH TEACHERS' RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1988

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	45	5							50
25-29	62	63							125
30-34	59	91	34	2					186
35-39	60	99	39	52	31				281
40-44	88	66	30	38	79	31			332
45-49	25	24	22	32	52	64	13		232
50-54	13	13	21	15	39	37	45	4	187
55-59	10	9	2	14	28	26	26	11	126
60-64	15	3		6	6	11	3	3	47
65+	7			2	1	2			12
TOTAL	384	373	148	161	236	171	87	18	1,578

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	2,783	13,242							3,829
25-29	2,443	16,435							9,495
30-34	3,732	18,280	21,934	24,701					14,402
35-39	3,717	18,092	25,664	32,547	36,303				20,758
40-44	3,323	20,547	27,842	34,724	36,185	37,221			23,542
45-49	3,239	20,976	28,441	34,139	38,268	36,864	39,287		30,873
50-54	4,075	14,847	30,269	33,354	35,490	36,900	38,724	41,600	32,301
55-59	3,980	16,396	23,091	34,543	36,231	36,380	38,997	43,137	33,063
60-64	3,073	12,524		34,129	34,117	36,322	35,031	44,384	24,062
65+	1,614			34,047	25,648	37,382			14,984
ALL	3,238	18,214	26,280	33,606	36,453	36,834	38,762	43,004	23,058

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
1,244	6,794	3,889	5,411	8,602	6,299	3,372	774	36,385

TABLE 4

DULUTH TEACHERS' RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1988

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	7	64						71
60-64	3	89	27					119
65-69	1	28	61	12				102
70-74		1	39	47	3			90
75-79				54	35	2		91
80-84				4	59	13		76
85+					10	29	37	76
TOTAL	11	182	127	117	107	44	37	625

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	7,244	6,776						6,822
60-64	7,500	7,197	2,515					6,142
65-69	78	4,630	5,300	1,913				4,667
70-74		112	4,594	3,626	1,181			3,925
75-79				3,690	4,089	1,308		3,791
80-84				3,556	4,102	2,919		3,871
85+					4,307	3,677	3,001	3,431
ALL	6,663	6,615	4,491	3,477	4,035	3,346	3,001	4,711

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>	TOTAL
73	1,204	570	407	432	147	111	2,944

TABLE 5

DULUTH TEACHERS' RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1988

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					3
60-64		1	2					3
65-69			1					1
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	0	5	4	1	0	0	0	10

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					5,726
60-64		5,112	3,738					4,196
65-69			4,134					4,134
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	0	5,020	4,246	2,724	0	0	0	4,481

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>
0	25	17	3	0	0	0	45

TABLE 6

DULUTH TEACHERS' RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1988

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50			1					1
50-54								0
55-59		1						1
60-64		3	1					4
65-69			2	2	3			7
70-74			1	2	2			5
75-79		1	2	2	1			6
80-84				1		1		2
85+				1	1		2	4
TOTAL	0	5	7	8	7	1	2	30

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								0
55-59		5,015						5,015
60-64		8,034	5,920					7,506
65-69			5,542	2,324	1,582			2,925
70-74			2,133	3,519	824			2,164
75-79		2,520	3,820	2,501	4,900			3,344
80-84				3,312		2,389		2,851
85+				1,909	1,453		1,456	1,568
ALL	0	6,328	3,901	2,739	1,821	2,389	1,456	3,297

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

	<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
	0	32	27	22	13	2	3	99

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, 1987	1,605	60	0
B. Additions	234	3	159
C. Deletions:			
1. Service Retirement	(17)	(2)	
2. Disability	0		
3. Death	0	0	
4. Terminated-Deferred	(2)		
5. Terminated-Refund	(105)	(8)	0
6. Terminated-Other Non-vested	(139)		
7. Returned as Active		(2)	0
D. Data Adjustments	2	0	0
	Vested 821		
	Non-Vested 757		
E. Total on June 30, 1988	1,578	51	159

	<u>RECIPIENTS</u>		
	<u>RETIREMENT ANNUITANTS</u>	<u>DISABLED</u>	<u>SURVIVORS</u>
A. On June 30, 1987	628	11	26
B. Additions	21	0	5
C. Deletions:			
1. Service Retirement		0	
2. Death	(24)	(1)	(1)
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	
D. Data Adjustments	0	0	0
E. Total on June 30, 1988	625	10	30

TABLE 8

DULUTH TEACHERS' RETIREMENT FUND

ACTUARIAL BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1988

A. CURRENT ASSETS (TABLE 1, F6)			\$76,279
B. EXPECTED FUTURE ASSETS			
1. Present Value of Expected Future Statutory Supplemental Contributions			8,446
2. Present Value of Future Normal Costs			39,992
3. Total Expected Future Assets			48,438
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS			\$124,717
D. CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>	<u>Total</u>
1. Benefit Recipients			
a. Retirement Annuities		\$28,799	\$28,799
b. Disability Benefits		357	357
c. Surviving Spouse and Child Benefits		874	874
2. Deferred Retirements		445	445
3. Former Members without Vested Rights		68	68
4. Active Members			
a. Retirement Annuities	974	43,586	44,560
b. Disability Benefits	3,053	0	3,053
c. Survivors' Benefits	1,495	0	1,495
d. Deferred Retirements	14	2,278	2,292
e. Refund Liability Due to Death or Withdrawal	0	751	751
5. Total Current Benefit Obligations	\$5,536	\$77,158	\$82,694
E. EXPECTED FUTURE BENEFIT OBLIGATIONS			\$48,057
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			\$130,751
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			\$6,415
H. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			\$6,034

TABLE 9

DULUTH TEACHERS' RETIREMENT FUND

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

JULY 1, 1988

	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	\$87,672	\$31,670	\$56,002
b. Disability Benefits	5,309	2,821	2,488
c. Survivors Benefits	2,506	975	1,531
d. Deferred Retirements	3,109	1,757	1,352
e. Refunds Due to Death or Withdrawal	1,612	2,769	(1,157)
f. Total	<u>\$100,208</u>	<u>\$39,992</u>	<u>\$60,216</u>
2. Deferred Retirements	\$445		\$445
3. Former Members Without Vested Rights	68		68
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	30,030		30,030
6. Total	<u>\$130,751</u>	<u>\$39,992</u>	<u>\$90,759</u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$90,759
2. Current Assets (Table 1,F6)			76,279
3. UAAL (B1-B2)			<u>\$14,480</u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls through the Amortization Date of July 1, 2009			\$681,096
2. Supplemental Contribution Rate (B3/C1)			2.13%

TABLE 10

DULUTH TEACHERS' RETIREMENT FUND

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

YEAR ENDING JUNE 30, 1988

A. UAAL AT BEGINNING OF YEAR	\$10,374
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$3,321
2. Contribution	(3,784)
3. Interest on A, B1, and B2	811

4. Total (B1+B2+B3)	\$348

C. EXPECTED UAAL AT END OF YEAR (A+B4)	\$10,722
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	(\$1,518)
2. Investment Return	3,621
3. MPRIF Mortality	0
4. Mortality of Other Benefit Recipients	229
5. Other Items	1,426

6. Total	\$3,758

E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D6)	\$14,480
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)	\$14,480
	=====

TABLE 11

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

JULY 1, 1988

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	4.50%	\$1,744
2. Employer Contributions	5.79%	2,243
	-----	-----
3. Total	10.29%	\$3,987
	=====	=====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	6.53%	\$2,529
b. Disability Benefits	0.55%	213
c. Survivors	0.21%	80
d. Deferred Retirement Benefits	0.36%	140
e. Refunds Due to Death or Withdrawal	0.51%	199
	-----	-----
f. Total	8.16%	\$3,161
	-----	-----
2. Supplemental Contribution Amortization by July 1, 2009 of UAAL of \$14,480	2.13%	\$825
3. Allowance for Expenses	0.89%	\$345
	-----	-----
4. Total	11.18%	\$4,331
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY)		
(A3-B4)	-0.89%	(\$344)

Note: Projected Annual Payroll for Fiscal Year Beginning
on July 1, 1988 is \$38,751

TABLE 12

DULUTH TEACHERS' RETIREMENT FUND

PROJECTED CASH FLOW
JULY 1, 1988

<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>
1988					\$76,279
1989	\$3,987	\$0	\$4,853	\$6,068	81,481
1990	4,247	0	4,951	6,490	87,267
1991	4,523	0	4,996	6,962	93,756
1992	4,817	0	5,082	7,490	100,981
1993	5,130	0	5,243	8,074	108,942
1994	5,463	0	5,640	8,708	117,473
1995	5,818	0	5,981	9,391	126,701
1996	6,196	0	6,504	10,124	136,517
1997	6,599	0	7,374	10,890	146,632
1998	7,028	0	8,128	11,687	157,219
1999	7,485	0	9,080	12,514	168,138
2000	7,971	0	9,799	13,378	179,688
2001	8,490	0	10,705	14,286	191,759
2002	9,041	0	11,659	15,236	204,377
2003	9,629	0	12,852	16,221	217,375
2004	10,255	0	13,961	17,242	230,911
2005	10,922	0	14,997	18,310	245,146
2006	11,631	0	16,338	19,423	259,862
2007	12,388	0	18,302	20,552	274,500
2008	13,193	0	20,033	21,686	289,346
2009	14,050	0	21,438	22,852	304,810
2010	14,963	0	22,727	24,074	321,120
2011	15,936	0	24,592	25,343	337,807
2012	16,972	0	25,915	26,667	355,531
2013	18,075	0	27,531	28,064	374,139

TABLE 13

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. (0.89% 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
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

TABLE 13
(cont)

are assumed to take refund under the New Plan.

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.

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)

<u>Age</u>	<u>Death</u>		<u>Withdrawal</u>		<u>Disability</u>		<u>Retirement</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
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, 1988

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									0
25-29									0
30-34		2	29	2					33
35-39		1	25	52	31				109
40-44		1	25	38	79	31			174
45-49		1	14	32	52	64	13		176
50-54		1	13	15	39	37	45	4	154
55-59			2	14	28	26	26	11	107
60-64		1		6	6	11	3	3	30
65+				2	1	2			5
TOTAL	0	7	108	161	236	171	87	18	788

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									0
30-34		9,972	21,962	24,701					21,402
35-39		65	25,592	32,547	36,303				31,722
40-44		2,600	27,568	34,724	36,185	37,221			34,620
45-49		20,688	26,956	34,139	38,268	36,864	39,287		36,082
50-54		18,154	31,918	33,354	35,490	36,900	38,724	41,600	36,310
55-59			23,091	34,543	36,231	36,380	38,997	43,137	37,183
60-64		24,438		34,129	34,117	36,322	35,031	44,384	35,723
65+				34,047	25,648	37,382			33,701
ALL	0	12,270	25,967	33,606	36,453	36,834	38,762	43,004	34,707

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
0	86	2,804	5,411	8,603	6,299	3,372	774	27,349

DULUTH TEACHERS' RETIREMENT FUND

TABLE 4A
OLD

SERVICE RETIREMENTS AS OF JUNE 30, 1988

AGE	YEARS RETIRED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59	4	24						28
60-64	3	38	27					68
65-69		15	54	12				81
70-74		1	38	47	3			89
75-79				54	35	2		91
80-84				4	59	13		76
85+					10	29	37	76
TOTAL	7	78	119	117	107	44	37	509

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	8,289	4,632						5,154
60-64	7,500	5,237	2,515					4,256
65-69		4,361	4,982	1,913				4,413
70-74		112	4,412	3,626	1,181			3,840
75-79				3,690	4,089	1,308		3,791
80-84				3,556	4,102	2,919		3,871
85+					4,307	3,677	3,001	3,431
ALL	7,951	4,817	4,240	3,477	4,035	3,346	3,001	3,994

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
56	376	504	407	432	147	111	2,033

DULUTH TEACHERS' RETIREMENT FUND

TABLE 5A
OLD

DISABILITY RETIREMENTS AS OF JUNE 30, 1988

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					3
60-64		1	2					3
65-69			1					1
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	0	5	4	1	0	0	0	10

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					5,726
60-64		5,112	3,738					4,196
65-69			4,134					4,134
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	0	5,020	4,246	2,724	0	0	0	4,481

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS OF DISABILITY

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
0	25	17	3	0	0	0	45

DULUTH TEACHERS' RETIREMENT FUND

TABLE 6A
OLD

SURVIVORS AS OF JUNE 30, 1988

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50			1					1
50-54								0
55-59								0
60-64		2	1					3
65-69			2	2	3			7
70-74			1	2	2			5
75-79		1	2	2	1			6
80-84				1		1		2
85+				1	1		2	4
TOTAL	0	3	7	8	7	1	2	28

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								0
55-59								0
60-64		5,847	5,920					5,871
65-69			5,542	2,324	1,582			2,925
70-74			2,133	3,519	824			2,164
75-79		2,520	3,820	2,501	4,900			3,344
80-84				3,312		2,389		2,851
85+				1,909	1,453		1,456	1,568
ALL	0	4,738	3,901	2,739	1,821	2,389	1,456	2,910

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
0	14	27	22	13	2	3	81

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

TABLE 11A
OLD

JULY 1, 1988

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	4.50%	\$1,311
2. Employer Contributions	5.79%	1,686
3. Total	----- 10.29% =====	----- \$2,997 =====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356 (NORMAL COST ONLY)		
1. Normal Cost		
a. Retirement Benefits	6.34%	\$1,848
b. Disability Benefits	0.52%	151
c. Survivors	0.23%	67
d. Deferred Retirement Benefits	0.46%	134
e. Refunds Due to Death or Withdrawal	0.49%	142
f. Total	----- 8.04% -----	----- \$2,342 -----

Note: Projected Annual Payroll for Fiscal Year Beginning
on July 1, 1988 is \$29,127

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 as 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, 1988

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	45	5							50
25-29	62	63							125
30-34	59	89	5						153
35-39	60	98	14						172
40-44	88	65	5						158
45-49	25	23	8						56
50-54	13	12	8						33
55-59	10	9							19
60-64	15	2							17
65+	7								7
TOTAL	384	366	40	0	0	0	0	0	790

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	2,783	13,242							3,829
25-29	2,443	16,435							9,495
30-34	3,732	18,466	21,770						12,893
35-39	3,717	18,276	25,792						13,809
40-44	3,323	20,824	29,216						11,342
45-49	3,239	20,989	31,039						14,500
50-54	4,075	14,571	27,589						13,592
55-59	3,980	16,396							9,861
60-64	3,073	6,567							3,484
65+	1,614								1,614
ALL	3,238	18,328	27,126	0	0	0	0	0	11,439

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
	1,244	6,707	1,085	0	0	0	0	0	9,036

DULUTH TEACHERS' RETIREMENT FUND

TABLE 4B
NEW

SERVICE RETIREMENTS AS OF JUNE 30, 1988

AGE	YEARS RETIRED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59	3	40						43
60-64		51						51
65-69	1	13	7					21
70-74			1					1
75-79								0
80-84								0
85+								0
TOTAL	4	104	8	0	0	0	0	116

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	5,851	8,062						7,908
60-64		8,657						8,657
65-69	78	4,941	7,750					5,646
70-74			11,534					11,534
75-79								0
80-84								0
85+								0
ALL	4,408	7,963	8,223	0	0	0	0	7,859

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
18	828	66	0	0	0	0	912

DULUTH TEACHERS' RETIREMENT FUND

TABLE 6B
NEW

SURVIVORS AS OF JUNE 30, 1988

AGE	YEARS SINCE DEATH							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		1						1
60-64		1						1
65-69								0
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	0	2	0	0	0	0	0	2

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50								0
50-54								0
55-59		5,015						5,015
60-64		12,410						12,410
65-69								0
70-74								0
75-79								0
80-84								0
85+								0
ALL	0	8,713	0	0	0	0	0	8,713

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

	<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>
	0	17	0	0	0	0	0	17

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

TABLE 11B
NEW

JULY 1, 1988

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	4.50%	\$433
2. Employer Contributions	5.79%	557
	-----	-----
3. Total	10.29%	\$990
	=====	=====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356 (NORMAL COST ONLY)		
1. Normal Cost		
a. Retirement Benefits	7.08%	\$681
b. Disability Benefits	0.64%	62
c. Survivors	0.14%	13
d. Deferred Retirement Benefits	0.06%	6
e. Refunds Due to Death or Withdrawal	0.59%	57
	-----	-----
f. Total	8.51%	\$819
	-----	-----

Note: Projected Annual Payroll for Fiscal Year Beginning
on July 1, 1988 is \$9,624

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. Age 62 and 30 years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and 1 year 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. 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	Life annuity. Actuarially equivalent options are: 5, 10, 15, or 20 year certain and life 50% or 100% joint and survivor 50% or 100% bounce back joint and survivor (option is cancelled if Member is pre-deceased by beneficiary). Guaranteed refund A larger life annuity before age 62 and reduced thereafter.
Benefit Increases	If the investment income of the fund was as 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 under age 65 and is age 50 or older with 5 years of Allowable Service. Also the last 5 years must have been uninterrupted.
Amount	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. 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.
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	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.

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.

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 Contri-
butions 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 Contri-
butions

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.

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