

St. Paul Teachers' Retirement
ACTUARIAL VALUATION REPORT

July 1, 1992

OCT - 5 1992 LCP&R



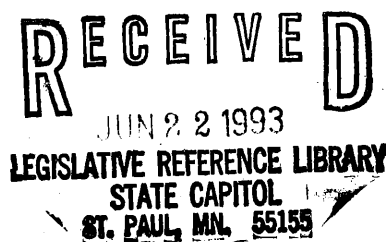
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October 2, 1992

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



Re: St. Paul Teachers' Retirement Fund

Commission Members:

Pursuant the terms of our actuarial services contract, we have performed an actuarial valuation of the St. Paul Teachers' Retirement Fund as of July 1, 1992.

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 St. Paul Teachers' Retirement Fund.

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 of Actuarial Work, adopted by the Commission on July 8, 1992.

Respectfully submitted,

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Consulting Actuary

Lance M. Burma, F.S.A., M.A.A.A.
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Enclosure

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St. Paul Teachers' Retirement Fund
Report Highlights
(dollars in thousands)

	July 1, 1991 Valuation	July 1, 1992 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 354A % of Payroll*	15.44%	15.09%*
2. Required Contributions - Chapter 356 % of Payroll	18.87%	19.74%*
3. Sufficiency (Deficiency): (A1-A2)*	(3.43)%	(4.65)%*
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$ 326,357	\$ 355,998
b. Current Benefit Obligations (Table 8)	\$ 465,975	\$ 503,027
c. Funding Ratio: (a/b)	70.04%	70.77%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$ 326,357	\$ 355,998
b. Actuarial Accrued Liability (Table 9)	\$ 495,740	\$ 533,865
c. Funding Ratio: (a/b)	65.83%	66.68%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets*	\$ 528,548	\$ 546,032*
b. Current and Expected Future Benefit Obligations	\$ 615,681	\$ 654,328
c. Funding Ratio: (a/b)	85.85%	83.45%

* See "Changes in Plan Provisions" and "Changes in Actuarial Assumptions" in Commentary Section of this report.

St. Paul Teachers' Retirement Fund
Report Highlights
(dollars in thousands)

	<u>July 1, 1991 Valuation</u>	<u>July 1, 1992 Valuation</u>
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	3,299	3,336
b. Projected Annual Earnings	\$ 117,291	\$ 122,767
c. Average Annual Earnings (Actual \$)	\$ 35,554	\$ 36,801
d. Average Age	43.8	44.1
e. Average Service	11.5	11.8
f. Additional Members on Leave of Absence*	130	146
2. Others		
a. Service Retirements (Table 4)	1,136	1,176
b. Disability Retirements (Table 5)	29	33
c. Survivors (Table 6)	144	148
d. Deferred Retirements (Table 7)	67	60
e. Terminated Other Non-Vested (Table 7)	935	931
f. Total	<u>2,311</u>	<u>2,348</u>

* Valued as Deferred Retirements

St. Paul Teachers' Retirement Fund *Commentary*

Purpose

The purpose of this valuation is to determine the financial status of the Plan. 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 70.77%. The corresponding ratio for the prior year was 70.04%.

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 use by the State. For 1992 the ratio is 66.68%, which is an increase from the 1991 value of 65.83%.

The *Projected Benefit Funding Ratio* is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 83.45% shows that the current statutory contributions are insufficient.

Asset Information (Tables 1 and 2)

Minnesota Statutes require that the asset value used for actuarial purposes recognize only one 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 following table presents the components of Table 1, line A.4:

St. Paul Teachers' Retirement Fund

Other Assets

Table 1, Item A.4.

(dollars in thousands)

	Market Value	Cost Value
Accounts Receivable		
Employer Contribution	\$ 368	\$ 368
Employee Contribution	34	34
Interest	2,122	2,122
Dividends	218	218
Bond Sales	10,140	9,815
Interest on Bond Sales	110	110
Gain on Bond Sales	325	325
Stock Sales	1,279	1,341
Loss of Stock Sales	(62)	(62)
Total Account Receivable	\$ 14,534	\$ 14,271
Annuitized Bonus Trust	\$ 100	\$ 100
Fixed Assets	\$ 21	\$ 21
Total Other Assets	\$ 14,655	\$ 14,392

For purposes of determining the Current Value of Fund assets, accrued bonus payments to retired members have been excluded from Assets Available for Benefits (Table 1, Line D.5.). Previously, this amount had been included in Current Assets. Please see "Sources of Actuarial Gains and Losses" below for further detail concerning the cost impact of this accounting change.

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 level 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, 1992 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	\$	189,144,000
Current Employees		
Accumulated employee contributions including allocated investment income	\$	117,674,000
Employer-financed vested		165,391,000
Employer-financed non-vested		30,818,000
Total Pension Benefit Obligation	\$	503,027,000
Net Assets Available for Benefits at Cost	\$	348,908,000
Total Benefit Obligation less Assets	\$	154,119,000
Funded Ratio		69.36%

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 of 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 an analysis of the major components of the Actuarial Gain or Loss refer to Table 10.

Several benefits have been recognized in this valuation of the Fund which had not been recognized in prior valuations. Liability for these previously unrecognized benefits contributes to the "Other Items" actuarial loss shown in Table 10, Line D.6. The benefits newly recognized for this valuation are as follows:

1. Members on Leave of Absence

Previously, no liability was recognized for any Members an leave of absence. However, we feel that at a minimum, liability for return of Member contributions, or if greater, the value of the Member's deferred vested benefit should be reflected in the valuation of the Fund. Recognition of these benefits results in an additional liability of \$2,456,000 for Deferred Retirements.

2. Supplemental Benefits for Certain Basic Members

Previously, no liability was recognized for supplemental benefits provided to certain Basic Members who retired prior to July 1, 1978 (described on page 29 of this report). Recognition of these benefits results in an additional liability of \$2,148,000 for retired Members.

3. Basic Plan Service for Certain Coordinated Members

When the Coordinated Plan became effective, certain Basic Members elected to receive past-service credit under the Basic Plan and future service credit under the Coordinated Plan. Previously, past-service Basic Plan credits for these Members were not recognized in the valuation of the Fund. Recognition of past service for these Members results in an increase of \$3,837,000 in the Actuarial Accrued Liability for Active Members.

There has also been an accounting change with respect to Fund assets which is first reflected in this report. Please see "Asset Information" above for a description of this change.

The following is a reconciliation of Table 10, Item D.5. showing the effect of the changes described above.

Other Items
Table 10, Item D.5.
(dollars in thousands)

Recognition of deferred vested benefits for members on leave of absence	\$ 2,456
Recognition of supplemental benefits for certain basic members	2,148
Recognition of basic service for certain coordinated members	3,837
Accounting change with respect to accrued bonus payments	3,574
Unexplained actuarial loss	121
Total Other Items	<u>\$ 12,136</u>

The recognition of Basic Plan service for certain Coordinated Members affects the presentation of Tables 3 and 3B which are now based upon total service rather than Coordinated service only.

Recognition of supplemental benefits for certain basic members affects the presentation of Tables 4, 5, 6, 4A, 5A and 6A which are now based upon total benefits rather than the base benefit only.

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 Fund has a contribution deficiency since the Statutory Contribution Rate is 15.09% compared to the Required Contribution Rate of 19.74%. See "Changes in Plan Provisions" and "Changes in Actuarial Assumptions" below for further discussion of this topic.

Changes in Actuarial Assumptions

The actuarial assumptions listed in Table 12 are the same as those used in the prior valuation.

Paragraph X.I.4. of the Actuarial Standards requires that the Actuarial Present Value of Future Compensation for purposes of determining the Normal Cost of the Fund be calculated assuming mid-year payments. Previously, beginning of year payments were assumed. This change in methodology results in an increase of 0.74% of payroll in the Normal Cost and Contribution Deficiency of the Fund.

Changes in Plan Provisions

Effective July 1, 1992, basic members retired prior to July 1, 1978 are entitled to the supplemental benefit described under "Benefit Increases" on page 30 of this report. Previously, only basic members retired prior to July 1, 1970 received this benefit. This change in plan provisions results in an increase of \$2,393,000 in liability for retired members.

Effective July 1, 1993, the employer contribution rate for coordinated members is 5.50% of salary (currently 4.50% of salary). Table 8, Item B.1 has been calculated taking into account the increase in employer contribution rate for coordinated members. However, in accordance with the Standards for Actuarial Work adopted July 8, 1992, all items contained in Tables 11, 11A and 11B reflect statutory contribution rates in effect on July 1, 1992. Had the new employer contribution rates been in effect on July 1, 1992, Statutory Contributions would have been 15.57% of payroll resulting in a deficiency of 4.17% of payroll.

Effective July 1, 1994, additional employer contributions will continue to be made for all Basic Members terminating service during the prior plan year. This legislation is an attempt to mitigate the effect of a shift from Basic to Coordinated payroll which was causing recurring decreases in the Fund's funded status. Since the methodology already used to determine the Present Value of Expected Future Statutory Supplemental Contributions already assumes no shift in payroll from Basic to Coordinated, no change in this calculation is required as a result of this legislation.

Reconciliation of Funding Ratios and Contribution Sufficiency (Deficiency)

The following table presents a reconciliation of the Funding Ratios and Contribution Sufficiency (Deficiency) presented in this report to those presented in the prior report. This table summarizes the effects of the various accounting changes, new benefits recognized, actuarial method changes and plan changes described throughout the Commentary Section of this report.

Reconciliation of Funding Ratios and Contribution Sufficiency (Deficiency)

	Contribution Sufficiency (Deficiency)	Accrued Benefit Funding Ratio	Accrued Liability Funding Ratio	Projected Benefit Funding Ratio
Value on July 1, 1991	(3.43)%	70.04%	65.83%	85.85%
Fund Experience During 1991-92	0.09%	3.00%	2.97%	0.72%
Accounting Change				
Accrued Benefits Payable	(0.14)%	(0.73)%	(0.69)%	(0.55)%
Benefits Newly Recognized				
Members on Leave of Absence	(0.11)%	(0.41)%	(0.36)%	(0.38)%
Supplemental Benefits for Certain Basic Members	(0.08)%	(0.31)%	(0.28)%	(0.28)%
Basic Plan Service for Certain Coordinated Members	(0.14)%	(0.48)%	(0.49)%	(0.49)%
Change in Actuarial Methods				
Calculation of Present Value of Future Compensation	(0.74)%	0.00%	0.00%	(2.94)%
Plan Changes				
Increase in Coordinated Plan Contribution Rate effective July 1, 1993	0.00%	0.00%	0.00%	1.83%
Additional Employer Contributions for Terminating Basic Members effective July 1, 1994	*	0.00%	0.00%	*
Increase in Supplemental Benefits for Certain Basic Members	(0.10)%	(0.34)%	(0.30)%	(0.31)%
Value on July 1, 1992	<u>(4.65)%</u>	<u>70.77%</u>	<u>66.68%</u>	<u>83.45%</u>

* This statutory change would have had a positive effect on these items except that prior valuation procedures did not reflect the expected future erosion in the combined statutory contribution rate which was bound to occur as the percentage of Basic Members decreased.

TABLE 1

St. Paul Teachers' Retirement Fund
Accounting Balance Sheet
(dollars in thousands)

July 1, 1992

	Market Value	Cost Value
A. ASSETS		
1. Cash, Equivalents, Short-Term Securities	\$ 34,425	\$ 34,425
2. Investments		
a. Fixed Income	213,996	208,285
b. Equity	126,835	111,538
c. Real Estate	705	705
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	0	0
4. Other*	14,655	14,392
B. TOTAL ASSETS	<u>\$ 390,616</u>	<u>\$ 369,345</u>
C. AMOUNTS CURRENTLY PAYABLE	<u>\$ 20,437</u>	<u>\$ 20,437</u>
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$ 73,204	\$ 73,204
2. Employer Reserves	296,975	275,704
3. MPRIF Reserves	0	0
4. Non-MPRIF Reserves	0	0
5. Total Assets Available for Benefits	<u>\$ 370,179</u>	<u>\$ 348,908</u>
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	<u>\$ 390,616</u>	<u>\$ 369,345</u>
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$ 348,908
2. Market Value (D5)	\$ 370,179	
3. Cost Value (D5)	348,908	
4. Market Over Cost: (F2-F3)	<u>\$ 21,271</u>	
5. 1/3 of Market Over Cost: (F4)/3		7,090
6. Actuarial Value of Assets (F1+F5)		<u>\$ 355,998</u>

* See "Asset Information" in Commentary Section of this report.

TABLE 2

St. Paul Teachers' Retirement Fund
Change In Assets Available For Benefits
(dollars in thousands)

Year Ending June 30, 1992

	Market Value	Cost Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$ 335,965	\$ 321,553
B. OPERATING REVENUES		
1. Member Contributions	\$ 7,821	7,821
2. Employer Contributions	10,489	10,489
3. Investment Income	21,525	21,525
4. MPRIF Income	0	0
5. Net Realized Gain (Loss)	12,979	12,979
6. Other	0	0
7. Net Change in Unrealized Gain (Loss)	6,859	0
8. Total Revenue	<u>\$ 59,673</u>	<u>\$ 52,814</u>
C. OPERATING EXPENSES		
1. Service Retirements	\$ 22,336	\$ 22,336
2. Disability Benefits	603	603
3. Survivor Benefits	1,144	1,144
4. Refunds	506	506
5. Expenses	870	870
6. Other	0	0
7. Total Disbursements	<u>\$ 25,459</u>	<u>\$ 25,459</u>
D. OTHER CHANGES IN RESERVES	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	<u>\$ 370,179</u>	<u>\$ 348,908</u>

TABLE 3

St. Paul Teachers' Retirement Fund
*Active Members as of June 30, 1992**

<u>AGE</u>	<u>YEARS OF SERVICE</u>								<u>TOTAL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	68	5	-	-	-	-	-	-	73
25-29	123	138	25	-	-	-	-	-	286
30-34	72	101	112	6	-	-	-	-	291
35-39	68	94	121	104	10	-	-	-	397
40-44	81	111	104	115	110	73	-	-	594
45-49	45	79	88	80	82	232	43	-	649
50-54	31	38	57	62	47	129	96	20	480
55-59	12	20	25	36	42	85	82	59	361
60-64	9	11	9	13	14	45	23	40	164
65+	11	2	4	5	5	5	5	4	41
ALL	520	599	545	421	310	569	249	123	3,336

AVERAGE ANNUAL EARNINGS

<u>AGE</u>	<u>YEARS OF SERVICE</u>								<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	3,474	25,599	-	-	-	-	-	-	4,784
25-29	5,970	23,758	30,020	-	-	-	-	-	16,655
30-34	5,235	24,717	31,210	35,819	-	-	-	-	22,624
35-39	5,131	27,739	31,749	37,695	42,125	-	-	-	28,059
40-44	6,521	27,689	35,029	40,044	46,344	47,338	-	-	34,349
45-49	6,264	28,229	38,255	42,685	46,611	48,951	49,914	-	41,014
50-54	7,164	27,881	35,794	44,308	49,388	50,139	51,270	50,267	43,303
55-59	2,763	19,774	36,587	42,420	47,059	49,787	49,731	51,625	44,883
60-64	1,917	12,554	35,527	39,660	48,760	47,797	50,790	53,140	43,402
65+	4,416	5,353	27,872	46,917	41,178	54,451	47,463	47,389	31,960
ALL	5,437	25,714	33,914	40,807	46,863	49,096	50,408	51,759	34,554

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

<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>TOTAL</u>
2,827	15,403	18,483	17,180	14,528	27,935	12,552	6,366	115,274

* See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

TABLE 4

St. Paul Teachers' Retirement Fund
*Service Retirements as of June 30, 1992**

<u>AGE</u>	<u>YEARS RETIRED</u>							<u>TOTAL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	-	-	-	-	-	-	-	0
50-54	-	-	-	-	-	-	-	0
55-59	16	30	-	-	-	-	-	46
60-64	26	95	90	-	-	-	-	211
65-69	6	80	159	36	-	-	-	281
70-74	1	13	89	93	3	-	-	199
75-79	-	3	19	70	55	3	-	150
80-84	-	-	-	3	98	14	2	117
85+	-	-	-	-	26	75	71	172
ALL	49	221	357	202	182	92	73	1,176

AVERAGE ANNUAL BENEFIT

<u>AGE</u>	<u>YEARS RETIRED</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	-	-	-	-	-	-	-	0
50-54	-	-	-	-	-	-	-	0
55-59	23,481	11,155	-	-	-	-	-	15,442
60-64	26,148	18,829	16,435	-	-	-	-	18,710
65-69	24,117	19,476	16,589	9,452	-	-	-	16,657
70-74	41,370	19,772	14,955	14,107	11,353	-	-	14,952
75-79	-	28,708	15,294	10,384	10,757	6,127	-	11,424
80-84	-	-	-	3,801	8,952	7,616	4,016	8,576
85+	-	-	-	-	10,722	8,214	8,364	8,655
ALL	25,339	18,211	16,074	11,834	9,790	8,055	8,245	14,048

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS RETIRED

<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>
1,242	4,024	5,738	2,391	1,782	741	602	16,520

* See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

TABLE 5

St. Paul Teachers' Retirement Fund
*Survivors as of June 30, 1992**

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	2	4	1	-	-	1	-	8
50-54	1	4	1	-	-	-	-	6
55-59	-	6	2	-	-	-	-	8
60-64	1	5	3	-	-	-	-	9
65-69	2	13	5	-	-	-	-	20
70-74	1	19	9	-	-	-	-	29
75-79	2	7	8	1	-	-	-	18
80-84	-	16	5	3	-	-	-	24
85+	1	12	9	3	1	-	-	26
ALL	10	86	43	7	1	1	0	148

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	13,267	9,669	10,020	-	-	3,350	-	9,823
50-54	8,737	14,791	5,155	-	-	-	-	12,176
55-59	-	15,575	6,036	-	-	-	-	13,190
60-64	15,754	15,297	6,827	-	-	-	-	12,525
65-69	17,651	13,355	5,922	-	-	-	-	11,926
70-74	548	6,660	7,472	-	-	-	-	6,701
75-79	12,469	7,968	8,535	9,272	-	-	-	8,793
80-84	-	8,270	7,344	4,654	-	-	-	7,625
85+	9,817	7,703	6,789	6,434	6,395	-	-	7,271
ALL	12,163	9,866	7,225	6,077	6,395	3,350	0	9,007

TOTAL ANNUAL ANNUITY (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>
122	848	311	43	6	3	0	1,333

* See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

TABLE 6

St. Paul Teachers' Retirement Fund
*Disability Retirements as of June 30, 1992**

<u>AGE</u>	<u>YEARS DISABLED</u>							<u>TOTAL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	1	-	1	-	-	-	-	2
50-54	-	1	-	-	1	-	-	2
55-59	-	2	2	-	1	-	-	5
60-64	1	5	1	2	2	-	-	11
65-69	-	-	1	1	1	-	-	3
70-74	-	-	2	3	1	-	-	6
75-79	-	-	-	-	-	1	-	1
80-84	-	-	-	-	-	1	1	2
85+	-	-	-	-	-	-	1	1
ALL	2	8	7	6	6	2	2	33

AVERAGE ANNUAL BENEFIT (includes SUPBEN)

<u>AGE</u>	<u>YEARS DISABLED</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	36,139	-	16,405	-	-	-	-	26,272
50-54	-	29,723	-	-	9,998	-	-	19,861
55-59	-	18,860	23,007	-	15,293	-	-	19,805
60-64	37,163	26,797	23,592	11,537	12,914	-	-	22,149
64-69	-	-	45,976	39,562	12,086	-	-	32,541
70-74	-	-	19,257	20,630	20,549	-	-	20,159
75-79	-	-	-	-	-	7,157	-	7,157
80-84	-	-	-	-	-	4,762	6,680	5,721
85+	-	-	-	-	-	-	3,786	3,786
ALL	36,651	25,178	24,357	20,754	13,959	5,960	5,233	20,482

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS DISABLED

<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>
73	201	171	125	84	12	10	676

* See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

TABLE 7

St. Paul Teachers' Retirement Fund
Reconciliation of Members

	Actives*	Terminated	
		Deferred Retirement	Other Non-Vested
A. ON JUNE 30, 1991	3,429	67	935
B. ADDITIONS	400	16	192
C. DELETIONS			
1. Service Retirement	(48)	(1)	(3)
2. Disability	(5)	-	(1)
3. Death - Survivor	(1)	-	-
4. Death - Other	(2)	-	-
5. Terminated - Deferred	(15)	-	(1)
6. Terminated - Refund	(129)	(9)	(167)
7. Terminated - Other Non-Vested	(144)	(12)	-
8. Returned as Active	-	-	(32)
D. DATA ADJUSTMENTS	(3)	(1)	8
Vested	2,362		
Non-Vested	1,120		
E. TOTAL ON June 30, 1992	3,482	60	931

	Recipients		
	Retirement Annuitants	Disabled	Survivors
A. ON JUNE 30, 1991	1,136	29	144
B. ADDITIONS	65	6	12
C. DELETIONS			
1. Service Retirement	-	-	-
2. Death	(27)	(2)	(8)
3. Annuity Expired	-	-	-
4. Returned as Active	-	-	-
D. DATA ADJUSTMENTS	2	-	-
E. TOTAL ON June 30, 1992	1,176	33	148

* Includes members on leave of absence.

TABLE 8

St. Paul Teachers' Retirement Fund
Actuarial Balance Sheet
(dollars in thousands)

July 1, 1992

A.	CURRENT ASSETS (TABLE 1, F6)			\$	355,998
B.	EXPECTED FUTURE ASSETS				
1.	Present Value of Expected Future Statutory Supplemental Contributions*				69,571
2.	Present Value of Future Normal Costs				120,463
3.	Total Expected Future Assets				<u>190,034</u>
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			\$	<u>546,032</u>
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested		Total
1.	Benefit Recipients**				
a.	Retirement Annuities	\$	\$ 164,255	\$	164,255
b.	Disability Benefits		7,542		7,542
c.	Surviving Spouse and Child Benefits		11,583		11,583
2.	Deferred Retirements With Future Augmentation**		5,069		5,069
3.	Former Members Without Vested Rights		695		695
4.	Active Members**				
a.	Retirement Annuities	4,827	253,682		258,509
b.	Disability Benefits	20,065	0		20,065
c.	Survivors' Benefits	4,229	0		4,229
d.	Deferred Retirements	1,697	27,785		29,482
e.	Refund Liability Due to Death or Withdrawal	0	1,598		1,598
5.	Total Current Benefit Obligations	<u>\$ 30,818</u>	<u>\$ 472,209</u>	\$	<u>503,027</u>
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			\$	<u>151,301</u>
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			\$	<u>654,328</u>
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY: (D5-A)			\$	147,029
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY: (F-C)			\$	108,296

* See "Changes in Plan Provisions" in Commentary Section of this report.

** See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

TABLE 9

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

July 1, 1992			
	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
	(1)	(2)	(3)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members*			
a. Retirement Annuities	\$ 386,667	\$ 76,063	\$ 310,604
b. Disability Benefits	28,472	11,932	16,540
c. Survivors' Benefits	6,390	2,151	4,239
d. Deferred Retirements	40,881	24,809	16,072
e. Refunds Due to Death or Withdrawal	2,774	5,508	(2,734)
f. Total	<u>\$ 465,184</u>	<u>\$ 120,463</u>	<u>\$ 344,721</u>
2. Deferred Retirements With Future Augmentation*	5,069		5,069
3. Former Members Without Vested Rights	695		695
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF*	183,380		183,380
6. Total	<u><u>\$ 654,328</u></u>	<u><u>\$ 120,463</u></u>	<u><u>\$ 533,865</u></u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL: (A6)			\$ 533,865
2. Current Assets (Table 1, F6)			355,998
3. UAAL: (B1-B2)			<u><u>\$ 177,867</u></u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020			\$ 2,587,082
2. Supplemental Contribution Rate: (B3/C1)			6.88%

* See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

TABLE 10

St. Paul Teachers' Retirement Fund
Changes in Unfunded Actuarial Accrued Liability (UAAL)
(dollars in thousands)

Year Ending June 30, 1992

A.	UAAL AT BEGINNING OF YEAR	\$ 169,383
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1.	Normal Cost and Expenses	\$ 14,311
2.	Contribution	(18,310)
3.	Interest on A, B1 and B2	13,090
4.	Total: (B1+B2+B3)	<u>\$ 9,091</u>
C.	EXPECTED UAAL AT END OF YEAR: (A+B4)	\$ 178,474
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1.	Salary Increases	\$ (6,032)
2.	Investment Return	(9,202)
3.	MPRIF Mortality	0
4.	Mortality of Other Benefit Recipients	98
5.	Other Items*	12,136*
6.	Total	<u>\$ (3,000)</u>
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS: (C+D5)	\$ 175,474
F.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS**	2,393
G.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	0
H.	UAAL AT END OF YEAR: (E+F+G)	<u><u>\$ 177,867</u></u>

* See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

** See "Changes in Plan Provisions" in the Commentary Section of this report.

St. Paul Teachers' Retirement Fund
Determination of Contribution Sufficiency
(dollars in thousands)

July 1, 1992

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	6.33%	\$ 7,776
2. Employer Contributions*	8.76%*	10,755
3. Total	<u>15.09%</u>	<u>\$ 18,531</u>
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost**		
a. Retirement Benefits	7.62%	\$ 9,352
b. Disability Benefits	1.30%	1,603
c. Survivors' Benefits	0.22%	269
d. Deferred Retirement Benefits	2.42%	2,965
e. Refunds Due to Death or Withdrawal	0.55%	680
f. Total	<u>12.11%</u>	<u>\$ 14,869</u>
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	6.88%	\$ 8,446
3. Allowance for Expenses	0.75%	\$ 921
4. Total	<u>19.74%</u>	<u>\$ 24,236</u>
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY): (A3-B4)	<u>(4.65)%*</u>	<u>\$ (5,705)</u>

* See "Changes in Plan Provisions" in Commentary Section of this report.

** See "Changes in Actuarial Assumptions" in Commentary Section of this report.

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1992 is \$122,767.

St. Paul Teachers' Retirement Fund
Summary of Actuarial Assumptions and Methods

<i>Interest:</i>	Pre-Retirement:	8.50% per annum
	Post-Retirement:	8.50% per annum
<i>Salary Increases:</i>	Total reported pay for prior fiscal year increased 6.50% to current fiscal year and 6.50% annually for each future year.	
<i>Mortality:</i>	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.
	Post Disability:	
	Male -	same as above.
	Female -	same as above.
<i>Retirement Age:</i>	Basic Members are assumed to retire at the greater of age 61 or age 60 and 25 years of service but not later than age 65. Coordinated Members are assumed to retire at age 62 and 30 years of service but not later than age 65. If over the assumed retirement age, members are assumed to retire one year from the valuation date. In addition, 45% of Basic Members and 30% of Coordinated Members are assumed to retire each year that they are eligible for the Rule of 90.	
<i>Withdrawal:</i>	Graded rates shown in the rate table.	
<i>Disability:</i>	Graded rates shown in the rate table.	
<i>Administrative and Investment Expenses:</i>	Prior year expenses expressed as a percentage of prior year payroll.	
<i>Return of Contributions:</i>	All employees withdrawing after becoming eligible for a deferred benefit were assumed to take the larger of their contributions accumulated with interest or the value of their deferred benefit.	
<i>Family Composition:</i>	85% of male Members and 60% of female Members are assumed to be married. Females are assumed to be four years younger than males. Members are assumed to have two children.	

TABLE 12
(cont)

<i>Social Security:</i>	N/A				
<i>Benefit Increases After Retirement:</i>	N/A				
<i>Special Consideration:</i>	<p>Annual bonus payments totaling 1.00% of the year end assets are accounted for by using a 7.50% pre and post-retirement interest rate.</p> <p>Married Coordinated Members are assumed to elect subsidized joint and survivor forms of annuity as follows:</p> <table><tr><td>Males -</td><td>15% elect 50% J&S option 50% elect 100% J&S option</td></tr><tr><td>Females -</td><td>10% elect 50% J&S option 10% elect 100% J&S option</td></tr></table>	Males -	15% elect 50% J&S option 50% elect 100% J&S option	Females -	10% elect 50% J&S option 10% elect 100% J&S option
Males -	15% elect 50% J&S option 50% elect 100% J&S option				
Females -	10% elect 50% J&S option 10% elect 100% J&S option				
<i>Actuarial Cost Method:</i>	The Entry Age Normal Actuarial Cost Method is used with normal costs expressed as a level percentage of earnings. Under this method Actuarial Gains (Losses) reduce (increase) the Unfunded Actuarial Accrued Liability.				
<i>Asset Valuation Method:</i>	Current Assets are equal to Cost Value plus one-third of Unrealized Gains or Losses.				
<i>Payment on the Unfunded Actuarial Accrued Liability:</i>	The Unfunded Actuarial Accrued Liability is amortized as a level percentage of payroll each year to the statutory amortization date assuming payroll increases of 6.50% per annum.				

TABLE 12
(cont)

St. Paul Teachers' Retirement Fund
Summary of Actuarial Assumptions and Methods

Separations Expressed as the Number of Occurrences per 10,000:

<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>
20	4	4	600	1,000	7	7	0	0
21	4	4	600	1,000	7	7	0	0
22	4	4	600	1,000	7	7	0	0
23	4	4	600	1,000	7	7	0	0
24	4	4	600	1,000	7	7	0	0
25	5	5	600	1,000	8	8	0	0
26	5	5	600	1,000	8	8	0	0
27	5	5	600	1,000	8	8	0	0
28	5	5	600	1,000	8	8	0	0
29	5	5	600	1,000	8	8	0	0
30	5	5	600	1,000	8	8	0	0
31	6	6	570	1,000	9	9	0	0
32	6	6	540	1,000	9	9	0	0
33	6	6	510	1,000	9	9	0	0
34	7	7	480	1,000	9	9	0	0
35	7	7	450	1,000	10	10	0	0
36	7	7	430	960	10	10	0	0
37	8	8	410	920	10	10	0	0
38	8	8	390	880	11	11	0	0
39	9	9	370	840	11	11	0	0
40	9	9	350	800	12	12	0	0
41	10	10	340	720	12	12	0	0
42	10	10	330	640	13	13	0	0
43	11	11	320	560	14	14	0	0
44	12	12	310	530	15	15	0	0
45	13	13	300	500	16	16	0	0
46	14	14	280	460	18	18	0	0
47	15	15	260	420	19	19	0	0
48	16	16	240	380	21	21	0	0
49	18	18	220	340	22	22	0	0
50	20	20	200	300	24	24	0	0
51	23	23	180	260	26	26	0	0
52	26	26	160	220	29	29	0	0
53	29	29	140	180	32	32	0	0
54	33	33	120	140	36	36	0	0

TABLE 12
(cont)

St. Paul Teachers' Retirement Fund
Summary of Actuarial Assumptions and Methods

Separations Expressed as the Number of Occurrences per 10,000:

<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	38	38	100	100	40	40	0	0
56	42	42	80	80	46	46	0	0
57	47	47	60	60	53	53	0	0
58	53	53	40	40	61	61	0	0
59	59	59	20	20	72	72	0	0
60	65	65	0	0	84	84	0	0
61	71	71	0	0	98	98	0	0
62	78	78	0	0	113	113	10,000	10,000
63	85	85	0	0	131	131	0	0
64	93	93	0	0	149	149	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

BASIC

St. Paul Teachers' Retirement Fund
Active Members as of June 30, 1992

YEARS OF SERVICE

<u>AGE</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>TOTAL</u>
<25	-	-	-	-	-	-	-	-	0
25-29	-	-	-	-	-	-	-	-	0
30-34	-	-	-	-	-	-	-	-	0
35-39	-	-	2	16	8	-	-	-	26
40-44	-	-	2	31	95	69	-	-	197
45-49	-	-	3	11	74	218	43	-	349
50-54	-	-	-	13	35	122	92	19	281
55-59	-	-	-	3	36	81	81	59	260
60-64	-	-	-	2	9	43	21	40	115
65+	-	-	-	1	4	4	5	4	18
ALL	0	0	7	77	261	537	242	122	1,246

AVERAGE ANNUAL EARNINGS

YEARS OF SERVICE

<u>AGE</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>ALL</u>
<25	-	-	-	-	-	-	-	-	0
25-29	-	-	-	-	-	-	-	-	0
30-34	-	-	-	-	-	-	-	-	0
35-39	-	-	29,744	35,983	42,880	-	-	-	37,625
40-44	-	-	28,454	35,038	46,391	47,228	-	-	44,716
45-49	-	-	28,958	40,124	47,107	48,984	49,914	-	48,249
50-54	-	-	-	47,422	49,938	50,163	51,437	50,501	50,448
55-59	-	-	-	39,118	47,616	49,976	49,871	51,625	49,865
60-64	-	-	-	39,869	51,439	47,734	51,168	53,140	50,395
65+	-	-	-	53,026	40,635	51,059	47,463	47,389	47,037
ALL	0	0	29,038	38,570	47,217	49,091	50,537	51,808	48,482

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

<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>TOTAL</u>
0	0	203	2,970	12,324	26,362	12,230	6,321	60,409

TABLE 4A

BASIC

St. Paul Teachers' Retirement Fund
*Service Retirements as of June 30, 1992**

<u>AGE</u>	<u>YEARS RETIRED</u>							<u>TOTAL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	-	-	-	-	-	-	-	0
50-54	-	-	-	-	-	-	-	0
55-59	16	29	-	-	-	-	-	45
60-64	24	86	89	-	-	-	-	199
65-69	4	69	156	35	-	-	-	264
70-74	1	12	85	91	3	-	-	192
75-79	-	3	19	64	55	3	-	144
80-84	-	-	-	3	98	14	2	117
85+	-	-	-	-	26	75	71	172
ALL	45	199	349	193	182	92	73	1,133

AVERAGE ANNUAL BENEFIT (includes SUPBEN)

<u>AGE</u>	<u>YEARS RETIRED</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	-	-	-	-	-	-	-	0
50-54	-	-	-	-	-	-	-	0
55-59	23,481	11,431	-	-	-	-	-	15,715
60-64	27,416	20,449	16,566	-	-	-	-	19,553
65-69	35,345	21,749	16,859	9,586	-	-	-	17,453
70-74	41,370	21,303	15,604	14,201	11,353	-	-	15,363
75-79	-	28,708	15,294	11,050	10,757	6,127	-	11,764
80-84	-	-	-	3,801	8,952	7,616	4,016	8,576
85+	-	-	-	-	10,722	8,214	8,364	8,655
ALL	27,032	19,762	16,393	12,158	9,790	8,055	8,245	14,423

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS RETIRED

<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>
1,216	3,933	5,721	2,346	1,782	741	602	16,341

* See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

TABLE 5A

BASIC

St. Paul Teachers' Retirement Fund
Survivors as of June 30, 1992*

<u>AGE</u>	<u>YEARS SINCE DEATH</u>							<u>TOTAL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	2	4	1	-	-	1	-	8
50-54	1	4	1	-	-	-	-	6
55-59	-	6	2	-	-	-	-	8
60-64	1	5	3	-	-	-	-	9
65-69	2	13	5	-	-	-	-	20
70-74	1	19	9	-	-	-	-	29
75-79	2	7	8	1	-	-	-	18
80-84	-	16	5	3	-	-	-	24
85+	1	12	9	3	1	-	-	26
ALL	10	86	43	7	1	1	0	148

AVERAGE ANNUAL BENEFIT
YEARS SINCE DEATH

<u>AGE</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
<50	13,267	9,669	10,020	-	-	3,350	-	9,823
50-54	8,737	14,791	5,155	-	-	-	-	12,176
55-59	-	15,575	6,036	-	-	-	-	13,190
60-64	15,754	15,297	6,827	-	-	-	-	12,525
65-69	17,651	13,355	5,922	-	-	-	-	11,926
70-74	548	6,660	7,472	-	-	-	-	6,701
75-79	12,469	7,968	8,535	9,272	-	-	-	8,793
80-84	-	8,270	7,344	4,654	-	-	-	7,625
85+	9,817	7,703	6,789	6,434	6,395	-	-	7,271
ALL	12,163	9,866	7,225	6,077	6,395	3,350	0	9,007

TOTAL ANNUAL ANNUITY (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>
122	848	311	43	6	3	0	1,333

* See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

TABLE 6A

BASIC

St. Paul Teachers' Retirement Fund
*Disability Retirements as of June 30, 1992**

<u>AGE</u>	<u>YEARS DISABLED</u>							<u>TOTAL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	1	-	1	-	-	-	-	2
50-54	-	1	-	-	1	-	-	2
55-59	-	2	2	-	1	-	-	5
60-64	1	5	1	2	2	-	-	11
65-69	-	-	1	1	1	-	-	3
70-74	-	-	2	3	1	-	-	6
75-79	-	-	-	-	-	1	-	1
80-84	-	-	-	-	-	1	1	2
85+	-	-	-	-	-	-	1	1
ALL	2	8	7	6	6	2	2	33

AVERAGE ANNUAL BENEFIT (includes SUPBEN)

<u>AGE</u>	<u>YEARS DISABLED</u>							<u>ALL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	
<50	36,139	-	16,405	-	-	-	-	26,272
50-54	-	29,723	-	-	9,998	-	-	19,861
55-59	-	18,860	23,007	-	15,293	-	-	19,805
60-64	37,163	26,797	23,592	11,537	12,914	-	-	22,149
64-69	-	-	45,976	39,562	12,086	-	-	32,541
70-74	-	-	19,257	20,630	20,549	-	-	20,159
75-79	-	-	-	-	-	7,157	-	7,157
80-84	-	-	-	-	-	4,762	6,680	5,721
85+	-	-	-	-	-	-	3,786	3,786
ALL	36,651	25,178	24,357	20,754	13,959	5,960	5,233	20,482

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS DISABLED

<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>
73	201	171	125	84	12	10	676

* See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

TABLE 11A

BASIC

St. Paul Teachers' Retirement Fund
Determination of Contribution Sufficiency
(dollars in thousands)

July 1, 1992

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	8.00%	\$ 5,147
2. Employer Contributions	12.63%	8,126
3. Total	<u>20.63%</u>	<u>\$ 13,273</u>
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost**		
a. Retirement Benefits	8.85%	\$ 5,693
b. Disability Benefits	1.96%	1,259
c. Survivors' Benefits	0.26%	169
d. Deferred Retirement Benefits	3.25%	2,092
e. Refunds Due to Death or Withdrawal	0.72%	463
f. Total	<u>15.04%</u>	<u>\$ 9,676</u>

* See "Changes in Plan Provisions" in Commentary Section of this report.

** See "Changes in Actuarial Assumptions" in Commentary Section of this report.

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1992 is \$64,336.

**St. Paul Teachers' Retirement Fund
Summary of Plan Provisions**

GENERAL

<i>Eligibility:</i>	A teacher who is employed in a public school district located in the corporate limits of the City of St. Paul and who is not covered by the Social Security Act. Also includes employees of the St. Paul Teachers Retirement Fund.
<i>Contributions:</i>	Member: 8.00% of Salary. Employer: 12.63% of Salary.
<i>Allowable Service:</i>	All periods of service for which salary deductions were made and service during sabbatical leave. After June 30, 1974, St. Paul service for part-time teachers is granted on a proportional basis of actual duty days to the agreed number of annual duty days. Years of service credited prior to May 31, 1976 are not recomputed.
<i>Salary:</i>	Total compensation. Excludes lump sum payments for unused vacation leave or unused sick leave at separation.
<i>Average Salary:</i>	Average of the 5 highest years of Salary during the last 10 years while making contributions or while disabled.

RETIREMENT***Normal Retirement Benefit:***

<i>Eligibility:</i>	Age 65 and 5 years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and 1 year of Allowable Service.
<i>Amount:</i>	2.50% of Average Salary for each year of Allowable Service.

Early Retirement Benefit:

<i>Eligibility:</i>	An unreduced benefit is available upon the attainment of age 60 and 25 years of Allowable Service or the Rule of 90 (Age plus Allowable Service totals 90). A reduced benefit is available upon the attainment of age 55 and 5 years of Allowable Service.
---------------------	---

TABLE 13A
(cont)
BASIC

Amount:

The greater of:

2.00% of Average Salary for each year of Allowable Service not to exceed 40 years with reduction of 0.25% for each month the Member is under age 65 (age 60 if 25 years of Allowable Service). No reduction if age plus years of Allowable Service totals 90.

or

2.50% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3.00% per year and actuarial reduction for each month the Member is under age 65.

Form of Payment:

Life annuity.

Benefit Increases:

If the investment income of the fund was at least 6.00% of the asset value of the fund at the end of the fiscal year, the Board of Trustees may declare a bonus of up to 1.00% of the asset value of the fund at the end of the 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.

Members retired under laws in effect before **July 1, 1978** receive an additional lump sum payment each year. In 1989, this lump sum payment was the greater of \$25.00 times each full year of Allowable Service or the difference between \$400.00 times each full year of Allowable Service and the sum of the benefits paid from any Minnesota public pension plan plus cash payments from the Social Security Administration for the year preceding the inception of this benefit. 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 65 with 5 years of St. Paul service.

Amount:

An annuity of 75% of the annual contract salary for the last full year of service reduced by any Social Security and Workers' Compensation benefits.

TABLE 13A
(cont)
BASIC

Payments are recomputed as a retirement at age 65. Payments stop if disability ceases or death occurs.

Form of Payment: Life annuity.

Benefit Increases: Same as for retirement.

Retirement After Disability:

Eligibility: Age 65 with continued disability.

Amount: Normal Retirement Benefit based on Average Salary and Allowable Service as if Member had continued in his latest position during the period of his disability.

Form of Payment: Life annuity.

Benefit Increases: Same as for retirement.

DEATH

Family Benefits:

Eligibility: Active Member with 3 years of St. Paul service.

Amount: Benefit of 15% of B.A. salary to spouse plus 25% of B.A. salary to each eligible child (maximum of 2). B.A. salary is the maximum salary payable to a teacher holding a B.A. degree.

Spouse's benefits cease upon death or when the spouse elects survivor's benefits. Such election does not affect benefits paid to children but total benefits may not exceed 90% of the Member's final salary. Children's benefits cease upon marriage or age 18 (22 if full time student).

Survivor's Benefits:

Eligibility: Active or retired Member with 5 years of St. Paul service. A surviving spouse must have been married to the Member for 3 years at the time of his death or retirement, whichever occurs first.

Amount: Survivor's payment of the 100% joint and survivor benefit earned by the Member to the date of his death or his retirement, whichever occurs first.

TABLE 13A
(cont)
BASIC

Benefit Increases:

Same as for a retired person if payments have been made over three years. The allocation is based on the years of Allowable Service of the person on whose behalf the annuity is paid and the years receiving the payment.

Refund of Contributions:

Eligibility:

Death of a Member or former Member when Family Benefits and Survivor's Benefits are not payable.

Amount:

The excess of the Member's contributions with 6.00% interest (unless the Member was disabled) over total benefits paid.

TERMINATION

Deferred Annuity:

Eligibility:

5 years of Allowable Service.

Amount:

Benefit computed under law in effect at termination and increased by the following annual percentage:

3.00% until January 1 of the year following the attainment of 55, and

5.00% thereafter until the annuity begins.

Amount is payable as a normal or early retirement benefit.

Refund of Contributions:

Eligibility:

Termination of teaching service.

Amount:

Member's contributions with 5.00% interest if termination occurred before May 15, 1989 and 6.00% interest if termination occurred after May 15, 1989. A deferred annuity may be elected in lieu of a refund.

TABLE 3B

COORDINATED

St. Paul Teachers' Retirement Fund
Active Members as of June 30, 1992*

<u>AGE</u>	<u>YEARS OF SERVICE</u>								<u>TOTAL</u>
	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	
<25	68	5	-	-	-	-	-	-	73
25-29	123	138	25	-	-	-	-	-	286
30-34	72	101	112	6	-	-	-	-	291
35-39	68	94	119	88	2	-	-	-	371
40-44	81	111	102	84	15	4	-	-	397
45-49	45	79	85	69	8	14	-	-	300
50-54	31	38	57	49	12	7	4	1	199
55-59	12	20	25	33	6	4	1	-	101
60-64	9	11	9	11	5	2	2	-	49
65+	11	2	4	4	1	1	-	-	23
ALL	520	599	538	344	49	32	7	1	2,090

AVERAGE ANNUAL EARNINGS
YEARS OF SERVICE

<u>AGE</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>ALL</u>
<25	3,474	22,599	-	-	-	-	-	-	4,784
25-29	5,970	23,758	30,020	-	-	-	-	-	16,655
30-34	5,235	24,717	31,210	35,819	-	-	-	-	22,624
35-39	5,131	27,739	31,783	38,007	39,106	-	-	-	27,389
40-44	6,521	27,689	35,158	41,892	46,051	49,235	-	-	29,205
45-49	6,264	28,229	38,503	43,093	42,024	48,439	-	-	32,598
50-54	7,164	27,881	35,794	43,483	47,787	49,731	47,439	45,819	33,214
55-59	2,763	19,774	36,587	42,720	43,719	45,957	38,394	-	32,056
60-64	1,917	12,554	35,527	39,623	43,940	49,148	46,820	-	26,991
65+	4,416	5,353	27,872	45,389	43,354	68,017	-	-	20,161
ALL	5,437	25,714	33,978	41,307	44,979	49,167	45,970	45,819	26,251

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

<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>TOTAL</u>
2,827	15,403	18,280	14,210	2,204	1,573	322	46	54,865

* See "Sources of Actuarial Gains and Losses" in the Commentary Section of this report.

TABLE 4B

COORDINATED

St. Paul Teachers' Retirement Fund
Service Retirements as of June 30, 1992

YEARS RETIRED

<u>AGE</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>TOTAL</u>
<50	-	-	-	-	-	-	-	0
50-54	-	-	-	-	-	-	-	0
55-59	-	1	-	-	-	-	-	1
60-64	2	9	1	-	-	-	-	12
65-69	2	11	3	1	-	-	-	17
70-74	-	1	4	2	-	-	-	7
75-79	-	-	-	6	-	-	-	6
80-84	-	-	-	-	-	-	-	0
85+	-	-	-	-	-	-	-	0
ALL	4	22	8	9	0	0	0	43

AVERAGE ANNUAL BENEFIT

YEARS RETIRED

<u>AGE</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>ALL</u>
<50	-	-	-	-	-	-	-	0
50-54	-	-	-	-	-	-	-	0
55-59	-	3,174	-	-	-	-	-	3,174
60-64	10,929	3,352	4,727	-	-	-	-	4,730
65-69	1,661	5,216	2,572	4,766	-	-	-	4,305
70-74	-	1,400	1,164	9,822	-	-	-	3,671
75-79	-	-	-	3,286	-	-	-	3,286
80-84	-	-	-	-	-	-	-	0
85+	-	-	-	-	-	-	-	0
ALL	6,295	4,187	2,138	4,903	0	0	0	4,152

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS RETIRED

<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>
25	92	17	44	0	0	0	179

St. Paul Teachers' Retirement Fund
Determination of Contribution Sufficiency
(dollars in thousands)

July 1, 1992

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 354A		
1. Employee Contributions	4.50%	\$ 2,629
2. Employer Contributions*	4.50%	2,629
3. Total	9.00%	\$ 5,258
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost**		
a. Retirement Benefits	6.26%	\$ 3,659
b. Disability Benefits	0.59%	344
c. Survivors' Benefits	0.17%	100
d. Deferred Retirement Benefits	1.50%	873
e. Refunds Due to Death or Withdrawal	0.37%	217
f. Total	8.89%	\$ 5,193

* See "Changes in Plan Provisions" in Commentary Section of this report.

** See "Changes in Actuarial Assumptions" in Commentary Section of this report.

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1992 is \$58,431.

**St. Paul Teachers' Retirement Fund
Summary of Plan Provisions**

GENERAL

<i>Eligibility:</i>	A teacher who is employed in a public school district located in the corporate limits of the City of St. Paul and who is covered by the Social Security Act. Also includes employees of the St. Paul Teachers Retirement Fund.	
<i>Contributions:</i>	Member:	4.50% of Salary.
	Employer:	4.50% of Salary prior to July 1, 1993. 5.50% of Salary after July 1, 1993.
<i>Allowable Service:</i>	All periods of service for which salary deductions were made and service during sabbatical leave. After June 30, 1974, St. Paul service for part-time teachers is granted on a proportional basis of actual duty days to the agreed number of annual duty days.	
<i>Salary:</i>	Total compensation. Excludes lump sum payments for unused vacation leave or unused sick leave at separation.	
<i>Average Salary:</i>	Average of the 5 highest successive years of Salary. Average Salary is based on all Allowable Service if less than 5 years.	

RETIREMENT***Normal Retirement Benefit:***

<i>Eligibility:</i>	
First hired before July 1, 1989:	Age 65 and 3 years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and 1 year of Allowable Service.
First hired after July 1, 1989:	The greater of age 65 or the age eligible for full Social Security retirement benefits and 3 years of Allowable Service. Proportionate Retirement Annuity is available at normal retirement age and 1 year of Allowable Service.

TABLE 13B
(cont)
COORDINATED

<i>Amount:</i>	1.50% of Average Salary for each year of Allowable Service.
<i>Early Retirement Benefit:</i>	
<i>Eligibility:</i>	Age 55 and 3 years of Allowable Service. Any age with 30 years of Allowable Service. Rule of 90: Age plus Allowable Service totals 90.
<i>Amount:</i>	
First hired before July 1, 1989:	<p>The greater of:</p> <p>1.00% of Average Salary for each of the first 10 years of Allowable Service plus 1.50% of Average Salary for each subsequent year of Allowable Service with reduction of 0.25% for each month the Member is under age 65 (age 62 if 30 years of Allowable Service). No reduction if age plus years of Allowable Service totals 90.</p> <p>or</p> <p>1.50% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3.00% per year and actuarial reduction for each month the Member is under age 65.</p>
First hired after July 1, 1989:	1.50% of Average Salary for each year of Allowable Service assuming augmentation to the age eligible for full Social Security retirement benefits at 3.00% per year and actuarial reduction for each month the Member is under the Social Security retirement age.
<i>Form of Payment:</i>	Life annuity. Actuarial equivalent options are: Guaranteed refund, 15 year certain and life, and 50% or 100% joint and survivor with bounce back feature without additional reduction.
<i>Benefit Increases:</i>	If the investment income of the fund was at least 6.00% of the asset value of the fund at the end of the fiscal year, the Board of Trustees may declare a bonus of up to 1.00% of the asset value of the fund at the end of the 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

TABLE 13B
(cont)
COORDINATED

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 normal retirement age with 3 years of Allowable Service. Also, at least 2 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 for commencement before the normal retirement age. Benefit is reduced by Workers' Compensation.

Payments are recomputed as a retirement at the normal retirement age. Payments stop if disability ceases or death occurs. Benefits may be reduced on resumption of partial employment.

Form of Payment:

Same as for retirement.

Benefit Increases:

Same as for retirement.

Retirement After Disability:

Eligibility:

Normal retirement age with continued disability.

Amount:

Any optional annuity continues, otherwise the larger of the disability benefit paid before normal retirement age or the normal retirement benefit available at the normal retirement age, or an actuarially equivalent optional annuity.

Benefit Increases:

Same as for retirement.

DEATH

Surviving Spouse Annuity:

Eligibility:

Member or former Member who dies before retirement or disability benefits commence, if age 50 with 3 years of Allowable Service or any age with 30 years of Allowable Service. If the Member dies before age 55, benefits commence when the Member would have been age 55.

TABLE 13B
(cont)
COORDINATED

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 Allowable Service of the person on whose behalf the annuity is paid and the years receiving the payment.

Refund of Contributions:

Eligibility: Member or former Member dies before receiving any disability or retirement benefits and Survivor's Benefits are not payable

Amount: Member's contributions with 5.00% interest if death occurred before May 16, 1989 and 6.00% interest if death occurred after May 15, 1989.

TERMINATION

Deferred Annuity:

Eligibility: 3 years of Allowable Service.

Amount: Benefit computed under law in effect at termination and increased by the following annual percentage:

3.00% until January 1 of the year following the attainment of 55, and

5.00% thereafter until the annuity begins.

Amount is payable as a normal or early retirement benefit.

Refund of Contributions:

Eligibility: Termination of teaching service.

Amount: Member's contributions with 5.00% interest if termination occurred before May 16, 1989 and 6.00% interest if termination occurred after May 15, 1989. A deferred annuity may be elected in lieu of a refund.