

781547

Teachers' Retirement Fund Association
St. Paul, Minnesota

ACTUARIAL VALUATION REPORT
as of
December 31, 1977

Teachers' Retirement Fund Association
St. Paul, Minnesota

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COMPENSATION & CAPITAL
INCORPORATED

222 WISCONSIN AVENUE

LAKE FOREST, ILLINOIS 60045

TELEPHONE 312 234-9050

May 2, 1978

Board of Trustees
St. Paul Teachers Retirement
Fund Association
555 Wabasha Street, Room 303
St. Paul, Minnesota 55102

Gentlemen:

In accordance with your request, we have made an actuarial valuation of the St. Paul Teachers' Retirement Fund Association for the year ended December 31, 1977, in order to determine the adequacy of the contributions being made to that system and to prepare the financial and actuarial reports as required by the laws of the State of Minnesota.

The results of our analysis are set forth in the following report. The basic financial and employee data are those submitted to us by the Association office; the summaries and actuarial figures are those prepared by us from such data.

On the basis of the foregoing, and the assumptions indicated herein, we hereby certify that, to the best of our knowledge and belief, the attached statements are true and correct.

Respectfully submitted,

Davis H. Rornisc
Fellow, Society of Actuaries
Enrolled Actuary No. 174

DHR:tmk

Teachers' Retirement Fund Association
St. Paul, Minnesota

COMMENTS

This report sets forth the information on the Teachers' Retirement Fund Association of the City of St. Paul, Minnesota required by law for the legislature based on the annual actuarial valuation.

These figures have been prepared in accordance with the requirements of the law under the supervision of an approved actuary. Included in these requirements are the use of the Entry Age Normal Cost Method, anticipated salary increases of 3-1/2% per year, and an assumed interest of 5% per year.

The actuarial valuation measures all aspects of the St. Paul Teachers' Fund in accordance with the plan described in the section of the report titled "Summary of the Plan". This valuation takes into account the amendment increasing the rate of benefit credit from 1.8% to 2% for each year of service up to 40.

Exhibit 4 shows the present value of benefits for past and future service of active members, and current benefits being received by retirees (and beneficiaries).

Exhibit 5 also indicates an amount of Unfunded Accumulated Contribution Requirement of \$91,508,221. This amount represents an increase of \$10,022,425. The primary reasons for the increase are estimated in Exhibit 7.

Exhibit 5 restates the dollar amount of obligation in Exhibit 4 as percentages based on current payroll of active members. The resulting percentage total rate requirement may then be compared with the statutory contribution rate to ascertain the actuarial balance of the Fund.

The state teachers' levy of 11.5513% is well short of the actuarial requirement of 21.0858% (Exhibit 5). This short fall of roughly \$4.2 million in the current year is eroding the financial strength of the plan. It is actuarially unsound to finance one plan with actuarial computations made for another since both the demographic characteristics and plan provisions are substantially different for the two groups.

FINANCIAL EXHIBITS

Teachers' Retirement Fund Association
St. Paul, Minnesota

FINANCIAL BALANCE SHEET
 (December 31, 1977)

ASSETS

Cash	\$ 14,726.94
Receivables	
Interest	\$726,617.71
Dividends	85,380.00
Employer Contribution	752,579.04
Proceeds from Sale of Stock	<u>396,653.56</u>
	1,961,230.31
Short Term Notes, at Discounted Value	4,056,576.89
Bonds, at Amortized Cost	32,904,072.92
Stocks, at Cost	21,008,108.94
Deferred Yield Adjustment Account	1,551,715.72
Furniture and Equipment, Less Depreciation	3,944.23
Administrative Expenses Payable	<u>(8,094.00)</u>
<u>Total Assets</u>	<u>\$61,492,281.95</u>
Members Accumulated Contributions (without interest)	\$25,284,062.40
Administration Expenses 1977 -	\$144,321.74

Teachers' Retirement Fund Association
St. Paul, Minnesota

SOURCES AND USES OF FUNDS

Cash Balance January 1, 1977		\$ 12,866.55
Income from Employer Contribution:		
State of Minnesota	\$4,623,506.29	
Federal Programs	<u>418,138.81</u>	\$ 5,041,645.10
Income from Members:		
Payroll Deductions	\$3,637,301.70	
Prior Service	195,265.69	
Return of Refunds	<u>36,372.70</u>	\$ 3,868,940.18
Income from Investments:		
Interest	\$2,693,734.83	
Dividends	833,184.71	
Miscellaneous	<u>2,825.01</u>	\$ 3,529,744.55
Investments Sold		<u>29,045,498.49</u>
<u>Total</u>		<u>\$41,498,694.87</u>

USES

Pension Paid:		
Retirements	\$4,653,046.28	
Survivor	114,086.68	
Family	86,071.53	
Disability	<u>197,302.95</u>	\$ 5,050,507.44
Refunds of Dues		594,382.24
Administrative Expenses:		
Salaries	\$ 66,042.56	
Office Expense	12,479.57	
Auditing, Legal, and		
Actuarial Services	13,385.00	
Taxes, Insurance and Members Dues	7,589.55	
Delegate Expense	2,820.00	
Data Processing	3,900.00	
Investment Counsel Service	36,493.00	
Office Equipment	<u>1,052.39</u>	143,762.07
Refund - Dividend Received Not Earned		23,515.63
Investments Purchased		<u>35,671,800.55</u>
Sub-Total		\$41,483,967.93
Cash Balance December 31, 1977		<u>14,726.94</u>
<u>Total</u>		<u>\$41,498,694.87</u>

Teachers' Retirement Fund Association
St. Paul, Minnesota

RECONCILIATION OF ASSET BALANCES
(December 31, 1977)

Asset Balance - December 31, 1976		\$54,480,417.28
Additions:		
Employer Contributions	\$5,009,228.18	
Member Contributions	3,859,769.90	
Investment Income	3,615,303.79	
Net Gain on Sale of Stock	<u>305,852.39</u>	<u>12,790,154.26</u>
<u>Sub-Total</u>		<u>\$67,270,571.54</u>
Deductions:		
Benefit Payments	\$5,048,851.08	
Refunds	585,116.77	
Administrative Expenses	<u>144,321.74</u>	<u>\$ 5,778,289.59</u>
Asset Balance, December 31, 1977		<u>\$61,492,281.95</u>

Teachers' Retirement Fund Association
St. Paul, Minnesota

ACTUARIAL REQUIREMENTS - 5%

Teachers' Retirement Fund Association
St. Paul, Minnesota

FINANCIAL BALANCE SHEET
(December 31, 1977)

Present Value of Benefits Expected to be Paid by Retirement Fund

To Active Teachers for

Retirement	\$141,131,051
Disability	13,007,183
Survivorship	9,856,660
Refund	<u>2,434,253</u>

Total \$166,429,147

To Vested Teachers 69,255

To Teachers on Leave 761,149

To Former Teachers without
Vested Rights 133,504

To Teachers and Beneficiaries
Now Receiving Benefits for

Retirement	\$ 44,213,450
Disability	1,953,674
Survivorship	<u>1,614,311</u>

Total \$ 47,781,435

Total Value of Benefits \$215,174,490

Less Value of Expected Future Contributions* 62,173,987

Accumulated Contribution Requirement
Assuming Full Funding During
Prior Service Period

\$153,000,503

Assets on Hand

61,492,282

Accumulated Contribution Requirement
to be Amortized by 1997

\$ 91,508,221

* As Determined by the Entry Age Normal Cost Method.

Teachers' Retirement Fund Association
St. Paul, MinnesotaACTUARIAL REQUIREMENTS
(December 31, 1977)TOTAL REQUIREMENTS

Expected Future Contributions on Behalf of Active Teachers	\$ 62,173,987
Accumulated Contribution Assuming Full Funding During Prior Service Period	<u>153,000,503</u>
Total - Value of All Benefits Payable to Present Members	\$215,174,490

AMORTIZATION RATE REQUIREMENT

Accumulated Contribution Requirement	\$153,000,503	
Assets on Hand	<u>61,492,282</u>	
Amount to be Amortized	\$ 91,508,221	
Contribution Requirement for Amortization Period of 20 Years	\$ 7,342,856	
Current Payroll	\$ 44,909,545	
Amortization Rate Requirement		16.3503%

LEVEL CONTRIBUTION (ENTRY AGE NORMAL) RATE REQUIREMENT

Expected Future Contributions on Behalf of Active Teachers	\$ 62,173,987	
Expected Future Payroll	500,834,600	
Total Entry Age Normal Rate Requirement	12.4141%	
Teacher Contribution Rate	<u>8.0000</u>	
Employer Entry Age Normal Rate Requirement		4.4141%

ACTUARIAL BALANCE

Employer Statutory Contribution Rate*		11.5513%
Rate Requirements		
Amortization Rate Requirement	16.3503%	
Entry Age Normal Rate Requirement	4.4141	
Expenses Rate Requirement	<u>0.3214</u>	
Total Rate Requirement		21.0858%
Deficit of Statutory Rate over Rate Requirement		(9.5345%)

* Rate established by Minnesota Teachers Retirement Association.

Teachers' Retirement Fund Association
St. Paul, MinnesotaACTUARIAL REQUIREMENTS
(December 31, 1977)TOTAL REQUIREMENTS

Expected Future Contributions on Behalf of Active Teachers	\$ 62,173,987
Accumulated Contribution Assuming Full Funding During Prior Service Period	<u>153,000,503</u>
Total - Value of All Benefits Payable to Present Members	\$215,174,490

AMORTIZATION RATE REQUIREMENT

Accumulated Contribution Requirement	\$153,000,503	
Assets on Hand	<u>61,492,282</u>	
Amount to be Amortized	\$ 91,508,221	
Contribution Requirement for Amortization Period of 30 Years	\$ 5,952,741	
Current Payroll	\$ 44,909,545	
Amortization Rate Requirement		13.2550%

LEVEL CONTRIBUTION (ENTRY AGE NORMAL) RATE REQUIREMENT

Expected Future Contributions on Behalf of Active Teachers	\$ 62,173,987	
Expected Future Payroll	500,834,600	
Total Entry Age Normal Rate Requirement	12.4141%	
Teacher Contribution Rate	<u>8.0000</u>	
Employer Entry Age Normal Rate Requirement		4.4141%

ACTUARIAL BALANCE

Employer Statutory Contribution Rate*		11.5513%
Rate Requirements		
Amortization Rate Requirement	13.2550%	
Entry Age Normal Rate Requirement	4.4141	
Expenses Rate Requirement	<u>0.3214</u>	
Total Rate Requirement		17.9905
Deficit of Statutory Rate over Rate Requirement		(6.4392%)

* Rate established by Minnesota Teachers Retirement Association.

Teachers' Retirement Fund Association
St. Paul, Minnesota

STATEMENT OF REVENUE, EXPENDITURES, CHANGES IN
UNFUNDED ACCUMULATED CONTRIBUTION REQUIREMENT
(Year Ended December 31, 1977)

Revenue:

Employer Contributions	\$ 5,009,228.18	
Employee Contributions	3,859,769.90	
Net Investment Income	<u>3,921,156.18</u>	
Total Revenue		\$12,790,154.26

Expenditure:

Benefits	\$ 5,048,851.08	
Refund of Dues	585,116.77	
Administrative Expense	<u>144,321.74</u>	
Total Expenditures		<u>\$ 5,778,289.59</u>

Increase in Assets (1977)	\$ 7,011,864.67	
Increase in Accumulated Contribution Requirement	<u>17,034,290.00</u>	
Increase (Decrease) in Unfunded Accumulated Contribution Requirement		<u><u>\$10,022,425.33</u></u>

Teachers' Retirement Fund Association
St. Paul, Minnesota

INCREASE (DECREASE) IN UNFUNDED REQUIREMENTS

Unfunded	December 31, 1976	\$81,485,796
Unfunded	December 31, 1977	<u>91,508,221</u>
Increase (Decrease)		\$10,022,425

ALLOCATION OF INCREASE (DECREASE) IN UNFUNDED REQUIREMENT

(1) Change in Actuarial Assumptions		\$ -
(2) Amendment		10,307,781
(3) Net Actuarial Loss (Gain)		(2,285,972)
(4) Principal of Unfunded Anticipated in Total Rate Requirement	\$2,281,285	
Deficiency in Total Rate Require- ment over Statutory Rate	<u>4,281,901</u>	
Increase Due to Amortization		<u>2,000,616</u>
Total Increase (Decrease)		<u><u>\$10,022,425</u></u>

ALLOCATION OF NET ACTUARIAL LOSS (GAIN)

(1) Decrease in Average Earnings	\$ (1,371,475)
Investment Income in excess of 5%: Loss (Gain)	(1,021,839)
Experience Variation: Loss (Gain)	<u>107,342</u>
<u>Total Increases</u>	<u><u>\$ (2,285,972)</u></u>

EMPLOYEE STATISTICS

Teachers' Retirement Fund Association
St. Paul, Minnesota

RECONCILIATION OF MEMBERS

ACTIVE

Active (Including 87 on Leave) December 31, 1976	2,612
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Additions:

New Appointments 1977	243	
Reappointments	<u>33</u>	<u>276</u>

Total	2,888
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Separations:

Retirements	63	
Deaths	4	
Terminations	<u>136</u>	<u>203</u>

Active (Including 78 on Leave) December 31, 1977	<u><u>2,685</u></u>
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Substitutes	<u><u>282</u></u>
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Inactive Members	<u><u>10</u></u>
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RETIRED

Retired Members December 31, 1976	<u>824</u>
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Additions During 1977:

Retirement	57	
Disability	<u>6</u>	<u>63</u>

Total	887
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Separations - Deaths	<u>30</u>
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Retired Members December 31, 1977	<u><u>857</u></u>
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Beneficiaries:

Reversionary	13	
Survivor	27	
Children	<u>22</u>	

Total	<u><u>62</u></u>
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Teachers' Retirement Fund Association
St. Paul, Minnesota

RETIRED ON SERVICE PENSION

AGE	MALE		FEMALE	
	NUMBER	ANNUAL PENSION	NUMBER	ANNUAL PENSION
55	-	\$ -	1	\$ 4,787
56	-	-	1	6,508
57	-	-	1	8,088
59	1	15,996	1	8,641
60	-	-	4	27,405
61	7	95,760	8	59,424
62	9	109,287	11	72,515
63	7	100,939	10	84,794
64	6	67,982	8	58,212
65	13	154,431	20	140,608
66	8	105,548	15	135,333
67	5	44,885	25	180,980
68	11	107,925	20	159,242
69	4	31,968	22	148,766
70	5	53,153	23	163,676
71	3	27,384	34	225,376
72	5	46,687	25	146,328
73	6	51,381	33	190,760
74	2	14,256	36	204,420
75	8	51,076	39	187,573
76	3	18,860	18	85,580
77	4	20,128	27	112,978
78	4	18,598	20	83,933
79	3	12,807	27	113,108
80	2	9,875	24	94,738
81	1	4,294	25	93,173
82	2	5,488	26	94,176
83	5	19,771	24	94,155
84	1	4,238	24	93,984
85	1	4,222	18	64,814
86	-	-	13	52,171
87	-	-	9	33,159
88	-	-	14	52,642
89	1	3,362	10	36,925
90	-	-	8	24,410
91	1	3,462	3	10,542
92	-	-	7	23,168
93	-	-	5	11,819
94	-	-	4	11,974
95	-	-	2	6,391
97	1	2,856	-	-
102	-	-	1	3,351
Total	<u>129</u>	<u>\$1,206,619</u>	<u>646</u>	<u>\$3,415,627</u>

Teachers' Retirement Fund Association
St. Paul, Minnesota

RETIRED ON LIMITED PENSION

<u>AGE</u>	<u>MALE</u>		<u>FEMALE</u>	
	<u>NUMBER</u>	<u>ANNUAL PENSION</u>	<u>NUMBER</u>	<u>ANNUAL PENSION</u>
65	2	\$ 7,122	4	\$ 14,565
66	1	3,538	8	22,346
67	1	470	3	8,263
68	-	-	4	16,661
69	-	-	1	2,925
71	-	-	3	14,328
72	1	3,132	1	3,912
73	-	-	1	2,256
74	1	3,180	3	11,016
75	-	-	1	2,460
77	-	-	2	4,476
80	-	-	4	10,136
81	1	2,312	-	-
82	-	-	2	5,056
83	1	2,544	1	2,458
84	-	-	1	2,546
86	-	-	1	2,294
90	-	-	2	4,110
<u>TOTALS</u>	<u>8</u>	<u>\$22,298</u>	<u>42</u>	<u>\$129,808</u>

Teachers' Retirement Fund Association
St. Paul, Minnesota

RETIRED WITH REVERSIONARY PENSIONS

<u>AGE</u>	<u>MALE</u>		<u>FEMALE</u>	
	<u>NUMBER</u>	<u>ANNUAL PENSION</u>	<u>NUMBER</u>	<u>ANNUAL PENSION</u>
77	1	\$ 2,636	-	\$ -
78	1	4,403	1	3,758
81	1	4,355	1	4,129
86	<u>2</u>	<u>7,646</u>	<u>-</u>	<u>-</u>
<u>TOTALS</u>	<u>5</u>	<u>\$19,040</u>	<u>2</u>	<u>\$7,887</u>

Teachers' Retirement Fund Association
St. Paul, Minnesota

RETIRED ON DISABILITY PENSION

<u>AGE</u>	<u>MALE</u>		<u>FEMALE</u>	
	<u>NUMBER</u>	<u>ANNUAL PENSION</u>	<u>NUMBER</u>	<u>ANNUAL PENSION</u>
36	-	\$ -	1	\$ 9,709
44	-	-	1	14,929
48	1	13,548	-	-
49	1	11,268	-	-
50	-	-	2	13,169
55	2	17,952	-	-
56	1	3,324	-	-
57	-	-	1	14,748
58	1	14,739	1	7,803
60	-	-	1	4,716
61	2	33,279	1	12,804
63	1	19,541	1	16,569
64	2	18,468	-	-
65	1	4,188	-	-
68	-	-	1	3,744
71	-	-	1	3,239
74	-	-	1	3,099
76	-	-	1	3,482
<u>TOTALS</u>	<u>12</u>	<u>\$136,307</u>	<u>13</u>	<u>\$108,011</u>

Teachers' Retirement Fund Association
St. Paul, Minnesota

SURVIVOR ANNUITIES

CHILDREN

<u>Number</u>	<u>Annual Pension</u>
<u>22</u>	<u>\$80,704</u>

MALE

<u>Age</u>	<u>Number</u>	<u>Annual Pension</u>
49	1	\$ 3,477
53	1	3,900
69	1	1,548
72	1	7,404
73	1	2,964
77	1	6,228
79	1	4,296
81	1	5,232
<u>Totals</u>	<u>8</u>	<u>\$35,049</u>

FEMALE

<u>Age</u>	<u>Reversionary Survivors</u>		<u>Regular Survivors</u>	
	<u>Number</u>	<u>Annual Pension</u>	<u>Number</u>	<u>Annual Pension</u>
41	-	\$ -	1	\$ 4,291
53	-	-	2	10,796
54	-	-	1	2,520
56	-	-	1	2,760
58	-	-	3	20,832
60	-	-	2	5,538
66	-	-	2	8,203
67	1	1,371	1	2,280
68	-	-	1	2,259
70	-	-	2	5,069
71	1	1,441	-	-
72	-	-	1	3,852
73	1	1,045	1	3,405
75	1	2,685	-	-
77	5	12,298	-	-
78	-	-	1	4,734
81	1	1,814	-	-
82	1	1,479	-	-
83	1	1,338	-	-
96	-	-	1	4,428
<u>TOTALS</u>	<u>12</u>	<u>\$23,471</u>	<u>20</u>	<u>\$80,967</u>

Teachers' Retirement Fund Association
St. Paul, Minnesota

CONSIDERED EARNINGS
(Year Ended December 31, 1977)

Active Male Employees
(Age and Credited Service as of December 31, 1977)

AGE	YEARS OF SERVICE							
	Under 1		1 to 2		2 to 5		5 to 10	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	12	\$ 100,350	8	\$ 67,600	-	\$ -	-	\$ -
25 to 30	35	306,103	29	255,817	20	215,855	52	633,940
30 to 35	19	198,006	17	157,404	18	234,787	126	1,767,279
35 to 40	8	80,700	8	84,900	7	97,147	71	1,274,442
40 to 45	-	-	3	33,639	4	59,950	47	916,633
45 to 50	-	-	1	5,200	-	-	27	521,634
50 to 55	4	27,700	1	5,000	3	37,500	8	180,042
55 to 60	3	15,600	1	20,900	-	-	6	119,665
60 to 65	1	5,200	-	-	1	16,500	1	16,400
65 & Up	3	25,625	-	-	-	-	-	-
<u>TOTAL</u>	<u>85</u>	<u>\$ 759,284</u>	<u>68</u>	<u>\$ 630,660</u>	<u>53</u>	<u>\$ 661,739</u>	<u>338</u>	<u>\$ 5,430,035</u>

AGE	YEARS OF SERVICE							
	10 to 15		15 to 20		20 to 25		25 to 30	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 30	-	-	-	-	-	-	-	-
30 to 35	33	536,980	-	-	-	-	-	-
35 to 40	74	1,400,156	17	343,594	-	-	-	-
40 to 45	51	1,036,924	57	1,246,967	17	392,642	-	-
45 to 50	25	517,323	41	840,691	79	1,742,923	12	285,258
50 to 55	15	286,572	17	338,868	27	596,359	65	1,435,574
55 to 60	10	195,150	8	157,850	15	314,482	30	658,678
60 to 65	2	36,700	5	88,450	3	57,900	9	204,102
65 & Up	-	-	-	-	-	-	-	-
<u>TOTAL</u>	<u>210</u>	<u>\$4,009,805</u>	<u>145</u>	<u>\$3,016,420</u>	<u>141</u>	<u>\$3,104,306</u>	<u>116</u>	<u>\$ 2,583,612</u>

AGE	YEARS OF SERVICE							
	30 to 35		35 to 40		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	20	\$ 167,950
25 to 30	-	-	-	-	-	-	136	1,411,715
30 to 35	-	-	-	-	-	-	213	2,894,456
35 to 40	-	-	-	-	-	-	185	3,280,939
40 to 45	-	-	-	-	-	-	179	3,686,755
45 to 50	-	-	-	-	-	-	185	3,913,029
50 to 55	21	525,085	-	-	-	-	161	3,432,900
55 to 60	32	804,012	3	73,316	-	-	108	2,359,653
60 to 65	4	80,220	8	190,993	-	-	34	696,465
65 & Up	-	-	-	-	-	-	3	25,625
<u>TOTAL</u>	<u>57</u>	<u>\$1,409,317</u>	<u>11</u>	<u>\$ 264,309</u>	<u>-</u>	<u>\$ -</u>	<u>1224</u>	<u>\$21,869,487</u>

Teachers' Retirement Fund Association
St. Paul, Minnesota

CONSIDERED EARNINGS
(Year Ended December 31, 1977)

Active Female Employees
(Age and Credited Service as of December 31, 1977)

AGE	YEARS OF SERVICE							
	Under 1		1 to 2		2 to 5		5 to 10	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	91	\$ 714,975	38	\$ 255,614	6	\$ 60,475	-	\$ -
25 to 30	67	739,854	38	421,860	98	1,013,755	108	1,280,600
30 to 35	32	354,075	27	276,450	38	444,268	183	2,443,939
35 to 40	23	211,755	21	189,825	21	252,517	75	1,222,988
40 to 45	21	168,060	18	150,100	18	232,200	60	973,286
45 to 50	14	98,550	10	65,400	17	205,454	53	836,794
50 to 55	6	46,100	6	31,200	11	118,275	26	440,615
55 to 60	8	51,440	9	52,900	3	15,600	10	163,762
60 to 65	2	10,400	1	5,200	8	64,000	4	64,000
65 & Up	-	-	2	10,400	-	-	-	-
<u>TOTAL</u>	<u>264</u>	<u>\$2,395,209</u>	<u>170</u>	<u>\$1,458,949</u>	<u>220</u>	<u>\$2,406,544</u>	<u>519</u>	<u>\$ 7,425,984</u>

AGE	YEARS OF SERVICE							
	10 to 15		15 to 20		20 to 25		25 to 30	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 30	-	-	-	-	-	-	-	-
30 to 35	36	565,691	-	-	-	-	-	-
35 to 40	48	872,475	17	331,950	-	-	-	-
40 to 45	38	698,064	29	549,116	8	152,500	-	-
45 to 50	26	467,495	18	357,639	19	399,078	12	240,370
50 to 55	22	393,600	20	405,334	20	407,422	12	241,692
55 to 60	19	342,815	23	462,971	17	348,820	15	295,771
60 to 65	12	217,502	13	240,825	10	203,540	11	223,166
65 & Up	-	-	1	20,300	-	-	-	-
<u>TOTAL</u>	<u>201</u>	<u>\$3,557,642</u>	<u>121</u>	<u>\$2,368,135</u>	<u>74</u>	<u>\$1,511,360</u>	<u>50</u>	<u>\$ 1,000,999</u>

AGE	YEARS OF SERVICE							
	30 to 35		35 to 40		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	135	\$ 1,031,064
25 to 30	-	-	-	-	-	-	311	3,456,069
30 to 35	-	-	-	-	-	-	316	4,084,423
35 to 40	-	-	-	-	-	-	205	3,081,510
40 to 45	-	-	-	-	-	-	192	2,923,326
45 to 50	-	-	-	-	-	-	169	2,670,780
50 to 55	6	128,550	-	-	-	-	129	2,212,788
55 to 60	18	350,450	4	100,225	-	-	126	2,184,754
60 to 65	11	199,500	7	136,510	-	-	79	1,364,643
65 & Up	-	-	-	-	-	-	3	30,700
<u>TOTAL</u>	<u>35</u>	<u>\$ 678,500</u>	<u>11</u>	<u>\$ 236,735</u>	<u>-</u>	<u>\$ -</u>	<u>1665</u>	<u>\$23,040,057</u>

SUMMARY OF PLAN

Teachers' Retirement Fund Association
St. Paul, Minnesota

SUMMARY OF PLAN
(As Amended Effective July 1, 1977)

1. Name

Teachers' Retirement Fund Association St. Paul, Minnesota.

2. Type of Plan

Self-insured, managed by a Board of Trustees consisting of the Mayor, the President of the Council of the City of St. Paul, Chairman of the Board of Independent School District Number 625, and nine others elected by and from members of the Teachers' Association.

3. Employers Included

Board of Education - City of St. Paul.

4. Employees Included

All employees regularly appointed to the St. Paul Public Schools in a position covered by a certificate issued by the Minnesota State Department of Education.

5. Service Considered for Benefits

All periods of service for which salary deductions were made or for which payments in lieu of salary deductions were deposited including military, governmental, outside, and previous St. Paul service, 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 shall not be recomputed.

6. Earnings Considered

Annual contract salary. Average salary based on the five years during the last 10 years of St. Paul Service which produces the highest average. For any member employed on a part-time basis during any of the 10 years, the average is computed on the basis of the amount earned in the time required to complete one full year of service.

7. Employer Contributions

Based on Contribution Requirements set by State Teachers Retirement Association including social security taxes.

8. Employee Contributions

8% of annual contract salary including contract salary otherwise payable to a member on sabbatical leave.

If an employee elects to purchase eligible outside service, he may do so pursuant to Article IV, Section 2, Paragraph 2 (d) of the Articles of Incorporation and By-Laws as amended effective May 31, 1976.

9. Normal Retirement Benefit

On or after attainment of age 60 and completion of 25 years of service.

Pension equal to 2% of average salary multiplied by the number of years of accredited service; such accredited service limited to a maximum of 40 years.

10. Limited Service Benefit

Employees compelled to retire upon attainment of a specified age after completion of 10 years of service but less than 25 years of service. Annuity determined as for Normal Retirement considering service and earnings to actual retirement.

11. Early Retirement Benefit

After attainment of age 55 and completion of 25 years of service. Annuity determined as for Normal Retirement considering service and earnings to actual retirement and reduced by 1/2 of 1% for each month or major fraction thereof between actual retirement and attainment of age 60.

12. Disability Benefit

In the event of total and permanent disability after completion of five years of accredited St. Paul service.

Until age 65 the pension is equal to 75% of annual contract salary for last full year of service minus any Social Security and/or Workmen's Compensation benefits being received.

At age 65 the benefit is recomputed as for Normal Retirement considering average salary and accredited service the disabled member would have had if he had continued to teach in his latest position during his period of disability.

13. Deferred Vested Benefit

In the event of termination after completion of ten years of service. Annuity determined as for Normal Retirement payable at age 65.

14. Death Benefit

Active

- (a) In the event of death prior to retirement and after completion of three years of service, an annuity is payable:

- (i) for each dependent child, subject to a maximum of two at one time, equal to 25% of the maximum salary payable to a teacher holding a B.A. degree for the year in which the member died, and
- (ii) to the surviving spouse, maintaining a home and having legal custody of the dependent child or children equal to 15% of the maximum salary in (i) above.

If the surviving spouse is also eligible for the benefits in (b) next following, such spouse may elect either benefits under (b) or the 15% benefit in (ii) above. All benefits attributable to one deceased member are limited to 90% of such member's final pay.

- (b) In the event of death after completion of 10 years of accredited service, the survivor, as defined in the plan, becomes entitled to a benefit based on the annuity earned to the date of the member's death and payable for life or until remarriage, equal to a joint-and-last survivorship annuity under which 100% of the reduced benefit is payable to the survivor.

Retired

In the event of death after retirement, the survivor receives a life annuity equal to the amount earned by the member to the date of his retirement after reduction to a 100% joint-and-last survivorship form of annuity.

15. Cash Refund of Dues

- (a) Upon termination or death of an active member prior to eligibility for any other pension, the full amount of his dues, without interest, paid since January 1, 1940, will be returned to him or to his beneficiary.
- (b) Upon the death of an active member eligible for a dependent children's benefit, but no other benefit under the Plan, the amount of the dues paid since January 1, 1940 which is in excess of the amount payable to the dependent children, without interest, shall be returned to his beneficiary.
- (c) Upon the death of a retired member, who was not survived by a survivor entitled to any other pension under the plan, the amount of dues paid since January 1, 1940, without interest, in excess of that amount already paid in pension, will be returned to his beneficiary.

In all cases above if the member has completed the probationary employment period under the applicable teacher tenure law, all amounts payable are credited with interest in a manner to be determined by the Board of Trustees.

16. Savings Provision

Any member who retires after December 31, 1954 on a Normal, Limited, Early, or Disability Pension, shall receive a pension not less than the maximum amount payable to any member who retired before January 1, 1955 for an equal period of service, including all increases of the pension of such previously retired member becoming effective after December 31, 1954.

17. Proportionate Annuity

At age 65 or earlier under a mandatory retirement statute or uniformly applied compulsory retirement policy. Annuity determined as for Normal Retirement based on service prior to termination.

18. Combined Service

Service totaling 10 or more years in any Minnesota funds with the same provision shall be entitled to an annuity from each fund based on their respective service in each fund.

19. Increases to Prior Retirees

Minnesota Statutes Law 1976, Chapter 326 provided increases to certain retirees based on service at retirement and years of retirement. The cost of these increases was provided by an appropriation from the general fund in the State Treasury.

Teachers' Retirement Fund Association
St. Paul, Minnesota

STATEMENT OF ACTUARIAL ASSUMPTIONS

Based on the experience analysis through December 31, 1975, the following assumptions have been used in determining the actuarial liabilities of the Fund:

Interest:	5% per annum, compounded annually.
Mortality:	Group Annuity Table for 1951 projected through 1965. See following tables.
Retirement Age:	Age 65.
Disability:	See following tables.
Separation:	See following tables.
Salary Scale:	3-1/2% per annum, compounded annually. See following tables.

A detailed statement of the mortality rates, disability rates, turnover rates and salary progression is set forth on the following pages.

Teachers' Retirement Fund Association
St. Paul, Minnesota

MORTALITY RATES

(Per 1,000 Employees)

Male Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.517	45	3.002
21	.537	46	3.409
22	.558	47	3.856
23	.581	48	4.344
24	.607	49	4.869
25	.636	50	5.429
26	.667	51	6.027
27	.703	52	6.656
28	.742	53	7.321
29	.784	54	8.019
30	.831	55	8.751
31	.884	56	9.514
32	.941	57	10.312
33	1.005	58	11.154
34	1.074	59	12.057
35	1.152	60	13.043
36	1.237	61	14.143
37	1.331	62	15.390
38	1.435	63	16.828
39	1.550	64	18.504
40	1.677	65	20.475
41	1.838		
42	2.054		
43	2.322		
44	2.639		

Teachers' Retirement Fund Association
St. Paul, Minnesota

MORTALITY RATES

(Per 1,000 Employees)

Female Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.311	45	1.672
21	.330	46	1.819
22	.349	47	1.980
23	.369	48	2.158
24	.392	49	2.355
25	.415	50	2.574
26	.439	51	2.783
27	.466	52	3.016
28	.496	53	3.277
29	.527	54	3.570
30	.561	55	3.898
31	.597	56	4.278
32	.637	57	4.727
33	.681	58	5.253
34	.728	59	5.867
35	.780	60	6.572
36	.836	61	7.369
37	.898	62	8.258
38	.966	63	9.232
39	1.040	64	10.284
40	1.122	65	11.402
41	1.213		
42	1.311		
43	1.420		
44	1.540		

Teachers' Retirement Fund Association
St. Paul, Minnesota

DISABILITY RATES

(Per 1,000 Employees)

All Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.70	45	1.62
21	.71	46	1.76
22	.72	47	1.91
23	.73	48	2.07
24	.74	49	2.23
25	.75	50	2.40
26	.76	51	2.60
27	.78	52	2.86
28	.80	53	3.18
29	.82	54	3.56
30	.84	55	4.00
31	.86	56	4.59
32	.88	57	5.34
33	.90	58	6.10
34	.93	59	7.20
35	.96	60	8.43
36	.99	61	9.75
37	1.03	62	11.30
38	1.07	63	13.05
39	1.11	64	14.90
40	1.15		
41	1.20		
42	1.27		
43	1.36		
44	1.48		

Teachers' Retirement Fund Association
St. Paul, Minnesota

SEPARATION RATES

(Per 1,000 Employees)

Male Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	191	40	25
21	177	41	23
22	163	42	21
23	149	43	19
24	135	44	17
25	122	45	16
26	112	46	16
27	102	47	15
28	92	48	14
29	83	49	13
30	74	50	12
31	67	51	12
32	61	52	11
33	55	53	11
34	49	54	10
35	43	55	9
36	39	56	7
37	35	57	5
38	31	58	3
39	28	59	1

Teachers' Retirement Fund Association
St. Paul, Minnesota

SEPARATION RATES

(Per 1,000 Employees)

Female Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	275	40	80
21	271	41	72
22	267	42	64
23	263	43	56
24	259	44	49
25	255	45	42
26	247	46	37
27	239	47	32
28	231	48	27
29	222	49	23
30	213	50	19
31	199	51	16
32	185	52	14
33	171	53	12
34	157	54	10
35	142	55	8
36	129	56	6
37	116	57	4
38	104	58	2
39	92	59	1

Teachers' Retirement Fund Association
St. Paul, Minnesota

EARNINGS PROGRESSION

All Employees

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.2127	45	.5026
21	.2201	46	.5202
22	.2278	47	.5384
23	.2358	48	.5572
24	.2440	49	.5767
25	.2526	50	.5969
26	.2614	51	.6178
27	.2706	52	.6394
28	.2800	53	.6618
29	.2898	54	.6849
30	.3000	55	.7089
31	.3105	56	.7337
32	.3213	57	.7594
33	.3326	58	.7860
34	.3442	59	.8135
35	.3563	60	.8420
36	.3687	61	.8714
37	.3817	62	.9019
38	.3950	63	.9335
39	.4088	64	.9662
40	.4231	65	1.0000
41	.4380		
42	.4533		
43	.4692		
44	.4856		