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Minneapolis Teachers Retirement Fund Association

Coordinated Retirement Program

Actuarial Valuation
December 31, 1979

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Peat, Marwick, Mitchell & Co.

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Peat, Marwick, Mitchell & Co.

222 South Riverside Plaza
Chicago, Illinois 60606

March 17, 1980

Board of Trustees
Minneapolis Teachers Retirement
Fund Association
Northwestern Bank Building
Minneapolis, Minnesota 55402

Gentlemen:

We are pleased to submit the final results of our actuarial valuation of the Minneapolis Teachers Retirement Fund as of December 31, 1979. The valuation of coordinated members was performed on the basis of employee data which was not audited by us and on data and financial information provided by the Executive Secretary of the Fund.

Objectives

The principal objectives of the valuation may be summarized as follows:

1. Prepare information in accordance with Minnesota Statutes, Sections 356.20 to 356.23 (refer to page No. 1 of this Report for additional detail of methods used).

2. Summarize the actuarial status of the Fund.

Summary of Findings

The results of our valuation, which were determined under 5% interest and 3½% salary increase assumptions as required by statute, may be summarized as follows:

1. The employer's normal cost for coordinated members for the year is 3.80% of coordinated members payroll.

2. The necessary contribution to meet normal cost, and prevent the unfunded accrued liability (deficit) from increasing is 4.13% of payroll.

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Based on the above mentioned data and information, our interpretation of plan provisions and the valuation method and assumptions set forth in this report, we hereby certify that the summaries on the following pages represent the results of the valuation.

PEAT, MARWICK, MITCHELL & CO.

Donald G. Brackey

Donald G. Brackey, F.S.A.
Enrolled Actuary Number 2765

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PART I.

VALUATION METHODS AND ASSUMPTIONS

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

METHODS USED IN VALUATION

GENERAL

Actuarial liabilities for retirement and other benefits are shown in Exhibit I. Employer contribution levels are presented in Exhibit II.

ANNUITIES IN FORCE AND DEFERRED ANNUITANTS

There are no coordinated members who have terminated with a deferred benefit or any coordinated members who have annuities in force.

ACCRUED LIABILITY--ACTIVE TEACHERS (COORDINATED MEMBERS)

In the valuation performed as of December 31, 1979, the Entry Age Normal Cost Method was used for valuation of normal retirement benefits as well as ancillary benefits.

For purposes of this valuation, it was assumed that all retirements take place at age 63. At retirement, the plan provides a life annuity of 1% of the highest consecutive 5-year average salary, times years of teaching service during the first 10 years and 1.5% per year for each year of teaching service thereafter.

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

SUMMARY OF ACTUARIAL ASSUMPTIONS

	December 31, 1979
Interest	5%
Turnover	2/3 of the 1970 experience, graduated for smoothness:

Attained Age	Turnover Rate
20	.200
30	.133
40	.028
50	.017
60	.002

Retirement Age	The later of age 63 or attained age on the valuation date
Salary Scale -- Annual Increase	3½%
Mortality	The 1971 Group Annuity Mortality Table with projection to 1975 by Scale D. For males the male rates were used with age setback one year. For females, the male rates were used with age setback seven years.
Valuation Assets	For valuation purposes assets are valued at cost.
Disablement	1955 UAW rates of disablement (with separate rates for males and females).

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

ANALYSIS OF ACTUARIAL ASSUMPTIONS

Shown below is the description of the basis for each principal assumption summarized on the previous page.

INTEREST

In 1979, the Fund's earning rates were as follows:

1. Excluding realized and unrealized capital gains and losses: 7.588%
2. Including realized capital gains and losses: 8.445%

Over the last five years, the averages of the Fund's annual earning rates were as follows:

1. Excluding realized and unrealized capital gains and losses: 6.487%
2. Including realized capital gains and losses: 6.754%

RETIREMENT AGE

Over the last several years, the average retirement age has approximated age 63. In 1979, the average age at retirement was 59.99. This year's costs are calculated using an assumed retirement age of 63.

TURNOVER

Turnover rates corresponding to 2/3 of the turnover rates experienced by the Fund in 1970 were used in this year's valuation. During 1979, actual turnover rates were approximately 23% lower than the assumed rates.

ASSETS

The cost basis of the assets was used for purposes of the actuarial valuation. Unrealized appreciation on stocks increased from $8,510,195 on December 31, 1977 to $9,120,278 on December 31, 1978 and to $15,080,702 on December 31, 1979.

SALARY SCALE

A 3½% annual salary scale assumption was used. At the end of 1979, the overall average salary was $19,816 compared to $18,997 at the end of 1978 representing a 4.3% increase. Average salaries have increased approximately 7.80% a year since 1974, and approximately 8.14% a year since 1970.

MORTALITY

For active and retired lives, the 1971 Group Annuity Mortality Table with projection to 1975 was used. (Male Table for males; the mortality rates for females are equal to those for males six years younger.) To account for teacher mortality which is expected to be less than the average group mortality, an additional one year setback was used.

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

DEFINITIONS OF TERMS

NORMAL COST

Level cost, to provide for all benefits, expressed as a percentage of payroll, payable from each member's entry age to date of retirement or termination.

ACCRUED LIABILITY

The accumulation of prior Normal Costs which became due each year (theoretically) for each member since his entry date.

UNFUNDED ACCRUED LIABILITY

The portion of the Accrued Liability not covered by assets of the Fund.

ENTRY AGE NORMAL

A method for funding future benefits, using the Normal Cost and Accrued Liability defined above.

PART II.

VALUATION RESULTS AND ANALYSIS

EXHIBIT I

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

SUMMARY OF COSTS AS OF DECEMBER 31, 1979

		Assumed retirement age is 63, 5% Interest and 2/3 of 1970 Turnover	
		Normal Cost	Accrued Liability
1.	Active Members		
	Retirement benefits	$ 106,464	$ 120,534
	Disability benefits	3,146	5,379
	Refunds due to death or withdrawal	15,416	(12,947)
2.	Deferred Annuitants and Former Members Without Vested Rights	0	0
3.	Annuitants	0	0
4.	Total	$ 125,026	$ 112,966
5.	Member deposits (4½% of compensation for all coordinated plan participants)	$ 67,797	
6.	Employer normal cost	$ 57,229	
7.	Valuation assets		$ 74,365
8.	Actual unfunded accrued liability		$ 38,601
	Total Payroll		$1,506,589

EXHIBIT II

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

SUMMARY OF CONTRIBUTION LEVELS FOR 1979

	December 31, 1979
Employer normal cost	$57,229
Percentage of payroll	3.80%
Unfunded accrued liability	38,601
Employer contribution required to meet normal cost and amortize unfunded accrued liability by December 31, 2009 assuming payment at the beginning of the plan year	59,620
Percentage of payroll	3.96%
Employer contribution required to meet normal cost and prevent unfunded accrued liability from increasing, assuming payment at the end of the plan year	62,021
Percentage of payroll	4.12%
Administrative expense	218
Percentage of payroll	.01%
Employer contribution required to meet normal cost and administrative expense and amortize unfunded accrued liability by December 31, 2009 assuming payment at the beginning of the plan year	59,838
Percentage of payroll	3.97%
Employer contribution required to meet normal cost and administrative expense and prevent unfunded accrued liability from increasing, assuming payment at the end of the plan year	62,250
Percentage of payroll	4.13%

EXHIBIT III

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

COMPARISON OF CONTRIBUTIONS WITH TOTAL INCOME FROM GOVERNMENTAL UNITS

Employer contribution as of December 31, 1979 to meet normal cost and administrative expense and prevent unfunded accrued liability from increasing	$62,250
Percentage of payroll on December 31, 1979	4.13%
Total 1979 state tax revenue	37,305
Percentage of payroll on December 31, 1979	2.48%

EXHIBIT IV

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

ASSETS AND CURRENT LIABILITIES AS OF DECEMBER 31, 1978 AND 1979

Assets (Cost Basis)	December 31, 1979	December 31, 1978
Cash	$ 2,322,305	$ 1,428,024
Stock dividends receivable	388,062	456,627
Accrued interest on investments	1,132,854	1,052,472
Bonds, mortgages and equities (including real estate)	119,559,766	121,305,806*
Land under operating leases	1,410,686	-
Net investment in financing leases	3,924,925	-
Due from affiliate	7,949,257	5,087,492
Receivable for investments sold	103,089	85,229
Accounts receivable - state tax revenues	714,969	712,780
Accounts receivable leases	20,552	-
Miscellaneous receivables	725	725
Total	$137,527,190	$130,129,155
Current Liabilities		
Claims payable	$ 168,300	$ 265,951
Accounts payable	26,330	10,874
Payable for investments purchased	31,232	670,103
Deferred premiums on written options	128,816	155,683
Sub-Total	$ 354,678	$ 1,102,611
Reserve for Section 15 increases	0	**
Balance available for plan benefits	137,172,512	129,026,544
Total	$137,527,190	$130,129,155

*Includes effect of a cumulative write-up of $1,911,326 and a write-down of $92,500 in 1978.

**The present value of retirement benefits and the balance available for plan benefits is increased by $1,911,326 to include the reserve for Section 15 increases.

Note: Assets were split between the basic and coordinated members. As of December 31, 1979, the balance for the basic members was $137,098,147 and for the coordinated members was $74,365.

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

COVERED EARNINGS OF ACTIVE COORDINATED MEMBERS INCLUDED IN DECEMBER 31, 1979 VALUATION. DISTRIBUTION BY SEX AND SERVICE GROUPS

ANNUAL EARNINGS BY SERVICE GROUPS

Service Group	MALE			FEMALE			TOTAL		
	Number of Participants	Total Annual Earnings	Average Annual Earnings	Number of Participants	Total Annual Earnings	Average Annual Earnings	Number of Participants	Total Annual Earnings	Average Annual Earnings
0	0	$ 0	$ 0	0	$ 0	$ 0	0	$ 0	$ 0
1	27	307,254	11,380	100	999,755	9,998	127	1,307,009	10,291
2	2	32,695	16,348	5	44,799	8,960	7	77,494	11,071
3	1	6,751	6,751	5	50,079	10,016	6	56,830	9,472
4	0	0	0	2	14,638	7,319	2	14,638	7,319
0 - 4	30	346,700	11,557	112	1,109,271	9,904	142	1,455,971	10,253
5 - 9	1	20,247	20,247	3	23,611	7,870	4	43,858	10,965
10 - 14	0	0	0	1	6,760	6,760	1	6,760	6,760
15 - 19	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0
25 - 29	0	0	0	0	0	0	0	0	0
30 - 34	0	0	0	0	0	0	0	0	0
35 - 39	0	0	0	0	0	0	0	0	0
40 +	0	0	0	0	0	0	0	0	0
Total	31	$366,947	$ 11,837	116	$1,139,642	$ 9,825	147	$1,506,589	$ 10,249

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

COVERED EARNINGS OF ACTIVE COORDINATED MEMBERS INCLUDED IN DECEMBER 31, 1979 VALUATION. DISTRIBUTION BY SEX AND AGE GROUPS

ANNUAL EARNINGS BY AGE GROUPS

Age Group	MALE			FEMALE			TOTAL		
	Number of Participants	Total Annual Earnings	Average Annual Earnings	Number of Participants	Total Annual Earnings	Average Annual Earnings	Number of Participants	Total Annual Earnings	Average Annual Earnings
0 - 19	0	$ 0	$ 0	0	$ 0	$ 0	0	$ 0	$ 0
20 - 24	2	11,212	5,606	17	126,649	7,450	19	137,861	7,256
25 - 29	9	74,718	8,302	37	369,776	9,994	46	444,494	9,663
30 - 34	5	55,766	11,153	25	284,918	11,397	30	340,684	11,356
35 - 39	7	98,404	14,058	11	104,260	9,478	18	202,664	11,259
40 - 44	3	49,452	16,484	11	112,530	10,230	14	161,982	11,570
45 - 49	3	67,271	22,424	7	71,182	10,169	10	138,453	13,845
50 - 54	1	184	184	4	32,587	8,147	5	32,771	6,554
55 - 59	0	0	0	3	30,980	10,427	3	30,980	10,327
60 - 64	1	9,940	9,940	1	6,760	6,760	2	16,700	8,350
65 - 59	0	0	0	0	0	0	0	0	0
70 - 74	0	0	0	0	0	0	0	0	0
75 - 79	0	0	0	0	0	0	0	0	0
80 - 84	0	0	0	0	0	0	0	0	0
85 +	0	0	0	0	0	0	0	0	0
Total	31	$366,947	$ 11,837	116	$1,139,642	$ 9,825	147	$1,506,589	$ 10,249

PART III.

SUMMARY OF THE PRINCIPAL PROVISIONS OF THE PLAN

MINNEAPOLIS TEACHERS RETIREMENT FUND ASSOCIATION

SUMMARY OF THE PRINCIPAL PROVISIONS OF THE PLAN

I. ESTABLISHMENT OF PROGRAM--In accordance with the laws of the State of Minnesota, a coordinated program was established within the Association effective July 1, 1978. The coordinated program provides for retirement annuities and certain other benefits specified in the law identical in effect to the corresponding provisions applicable to coordinated members of the statewide Teachers' Retirement Association.

II. ELIGIBILITY--Teachers who became members in the Association by virtue of service commencing after July 1, 1978 shall automatically become members in the coordinated program within the Association. Teachers who became members in the Association by virtue of service commencing prior to July 1, 1978, referred to as basic members, were afforded an opportunity to elect coverage under the coordinated program. Members participating in the coordinated program are referred to as coordinated members.

III. STATE CONTRIBUTIONS--The State shall contribute to the Association an employer contribution equal to the amount, expressed as a percent of payroll, that the State is required to pay for all contributing members of the State Teachers Retirement Association.

IV. MEMBER CONTRIBUTIONS ("REQUIRED DEPOSITS")--Each coordinated member shall deposit in the Retirement Deposit Fund 4½% of all compensation.

V. NORMAL RETIREMENT BENEFITS ("FORMULA ANNUITY") FOR COORDINATED MEMBERS--

1. Eligibility--A member is eligible for the Formula Annuity if he has attained age 55 with not less than 10 years of teaching service, or has completed 30 years of teaching service regardless of age when he retires. Each member so eligible may elect to relinquish all other benefits and receive in lieu thereof the Formula Annuity.

2. Annual Amount--The annual Formula Annuity is equal to the member's average salary for the highest 5 consecutive years of formula service multiplied by 1.0% per year for each year of service during the first 10 years and 1.5% per year for each year of service thereafter. The amount of the formula annuity will be reduced by one-half of one percent for each month prior to age 60 except that for any member who has 30 or more years of allowable service credit, such reduction shall be applied only for each month such member is under age 62.

3. Normal Form of Payment--Single life annuity. Specified optional forms are available.

VI. WITHDRAWAL BENEFIT FOR COORDINATED MEMBERS--

1. Eligibility--The member ceases to be employed in teaching in the public schools of Minneapolis prior to becoming age 65.

2. Amount--The member shall receive a refund in an amount equal to his accumulated deductions without interest or a deferred retirement annuity.

VII. DISABILITY BENEFITS FOR COORDINATED MEMBERS--

1. Eligibility--A member must be totally and permanently disabled and have completed 10 years of teaching service or after age 50 have completed 5 years of teaching service to be eligible for a disability benefit. Any member whose average salary is less than $75 per month shall not be entitled to disability benefits.

2. Annual Amount--The disability benefit for members eligible for the formula annuity (under Teachers' Retirement Association Laws, Section 354.44, Subd.6) shall be the formula annuity without the reduction for each month the member is under age 65 at the time the benefit begins to accrue. The disability benefit for members eligible for the money purchase annuity shall be an amount equal to double the annuity which could be purchased by the member's accumulated deductions plus interest thereon computed as though the teacher were age 65 at the time the benefit begins to accrue and in accordance with the law in effect when the disability application is received.

3. Normal Form of Payment--A single life annuity, commencing after the Board has determined that the total disability exists, is paid during the continued existence of the disability.

VIII. DEATH BENEFITS FOR COORDINATED MEMBERS--If a member dies before retirement and is eligible for the formula annuity, there shall be paid to his surviving dependent spouse or if there is no surviving dependent to his dependent beneficiary an amount equal to his accumulated deductions credited to his account as of June 30, 1957 and from July 1, 1957 to the date of death his accumulated deductions plus interest at the rate of three and one-half percent per annum compounded annually.

IX. PRE-RETIREMENT DEATH BENEFIT PAYABLE TO A SURVIVING SPOUSE--

(a) Eligibility--A member must elect to provide the coverage and have attained age 55 with 20 years of service or received credit for 30 years of service regardless of age. After meeting the above conditions, the member must have a spouse and the member must die prior to retirement.

(b) Annual Amount--The survivor annuity shall be equal to the survivor's portion of an actuarially equivalent benefit. The joint and survivor benefit is actuarially equivalent to the benefit payable in the normal form.

(c) Normal Form of Payment--A single life annuity payable to the surviving spouse.

X. ANNUAL AUTOMATIC ANNUITY INCREASE--

(a) Eligibility--Every member entitled to receive an annuity is entitled to an Annual Automatic Annuity Increase in his annuity. All beneficiaries shall be entitled to the same Annual Automatic Annuity Increase as the member would have been entitled to receive if living and according to the age the member would have attained if living.

(b) Amount--The amount of the Annual Automatic Annuity Increase in any year shall be equal to 1½% of the benefit the member was receiving as of the end of the preceding year, which increase shall first become payable on the July 1 of the calendar year in which the member becomes age 65. If a member is entitled to a Total Disability Annuity, the Annual Automatic Annuity Increase of 1½% shall commence upon the earlier of attainment of age 60 or 9 years after the member becomes entitled to such annuity.