REPORT ON ACTUARIAL VALUATION STATE EMPLOYEES' RETIREMENT ASSOCIATION OF MINNESOTA

DECEMBER 31, 1965

May 26, 1966

COATES, HERFURTH & ENGLAND, CONSULTING ACTUARIES

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May 26, 1966

Board of Trustees
State Employees' Retirement
Association of Minnesota
Centennial Office Building
St. Paul, Minnesota 55101

Gentlemen:

We are pleased to transmit herewith our report on the actuarial valuation of your Retirement System made as of December 31, 1965.

Pursuant to Contract No. E-9211, under which this valuation was authorized, the actuarial valuation was carried out on the basis of a 3% interest rate assumption and on the basis of the other actuarial assumptions set forth in our report submitted to the Board on November 12, 1965. Also, in accordance with the above noted contract, we utilized the entry age normal cost method of funding to determine the unfunded accrued liability of the System.

We hereby certify that the actuarial valuation of the State Employees' Retirement Association of Minnesota made as of December 31, 1965 was carried out on the basis of accepted actuarial methods and procedures and that the results of that valuation indicate that the contributions required from the employees and from the State under Minnesota Statutes 1961, Chapter 352, as presently constituted are adequate to provide the benefits that will be paid from the System.

We look forward to the opportunity of discussing this report with you at your convenience.

Very truly yours,

COATES, HERFURTH & ENGLAND
Consulting Actuaries

By ______________________
Robert H. Little, F.S.A.

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REPORT ON

ACTUARIAL VALUATION

OF THE

STATE EMPLOYEES' RETIREMENT ASSOCIATION

OF

MINNESOTA

AS OF

DECEMBER 31, 1965

SECTION I

INTRODUCTION

In accordance with Contract No. E-9211 between the State of Minnesota and this firm, we have completed the actuarial valuation of the State Employees' Retirement Association of Minnesota as of December 31, 1965.

The Executive Secretary of the Association furnished us with detailed employee information on all active members, inactive members and retired members of the Association as of December 31, 1965. The following schedule shows a summary of the membership on which the valuation was based:

SUMMARY OF MEMBERSHIP

DECEMBER 31, 1965

ACTIVE MEMBERS

	Number	Annual Salary
Male	16,854	$ 88,114,648
Female	14,542	47,490,070
Total	31,396	$135,604,718

INACTIVE MEMBERS

	Number	Accumulated Contributions
With Vested Rights	322	$568,083.67
Without Vested Rights	4,743	365,043.86
Total	5,065	$933,127.53

RETIRED MEMBERS

	Number	Annual Allowance
Age and Service Retirement	3,237	$3,299,146.44
Disability Retirement	115	88,967.28
Survivors	42	36,287.64
Deferred Retirements	7	1,872.84
Total	3,401	$3,426,274.20

The Executive Secretary and his staff are to be complimented on the accuracy and completeness of the aforementioned data.

The Executive Secretary also furnished us with a Financial Report setting forth the assets and liabilities of the Fund as of December 31, 1965. No physical audit of these assets was made by us and our calculations are based upon the Financial Report as submitted.

The following Section II sets forth the results of the actuarial valuation and Section III contains our conclusions. The schedule attached at the end of the report shows a summary of the active members of the System by sex and attained age.

SECTION II

RESULTS OF ACTUARIAL VALUATION

The contract under which this valuation was authorized specified that the actuarial valuation be carried out on the basis of a 3% interest rate assumption and upon the actuarial assumptions developed during the course of the actuarial investigation carried out as of December 31, 1964 which was summarized in our Report to the Board dated November 12, 1965. We were also instructed to carry out the actuarial valuation on the basis of an entry age normal cost method of funding. The current valuation was carried out in accordance with the stipulations contained in the aforementioned contract.

The valuation was carried out on the basis of the $7, 200 maximum annual participating salary that became effective July 1, 1965.

The entry age normal cost method of funding requires the determination of the level contribution rate which, if contributed on behalf of all new employees from their dates of employment to their dates of separation from service, will be adequate to provide all of their benefits. Under this funding method, the unfunded accrued liability is taken as the total liability of the System for benefits earned in the past as well as those earnable in the future, less the assets on hand, less the present value of future employee contributions and less the present value of future State entry age normal cost contributions.

In order to develop the entry age normal cost contribution rate for new employees, we carried out a complete valuation of presently active members who were employed during the preceding five-year period. The results of these calculations indicate that the total entry age normal cost rate amounts to 5.11% of participating salary. This rate may be compared to the 5.12% rate developed during the course of the December 31, 1964 valuation made on the basis of the old actuarial assumptions and it is apparent that the net effect of the changes in actuarial assumptions has been quite nominal.

Employees are required by law to contribute 3% and, accordingly, the State's share of the entry age normal cost contribution rate amounts to 2.11%. We expect the entry age normal cost rate to remain fairly stable unless there is a change in employment practices or in the Retirement Law.

The law requires that the State make the following contributions to the Fund with respect to members contributing at a 3% rate:

(1) A "matching" contribution equal to 3% of the members' participating salaries, and

(2) An "additional" contribution equal to two-thirds of members' contributions, or 2% of participating salary.

In the case of members contributing at a 6% rate, the required contributions by the State are:

(1) A "matching" contribution equal to 6% of the members' participating salaries, and

(2) An "additional" contribution equal to one-sixth of members' contributions, or 1% of participating salary.

We have been advised that it is the intent of the Minnesota Legislature to pay the "additional" contributions referred to above for a limited time only. Inasmuch as there were only 38 active employees who were contributing at the 6% level as of December 31, 1965, we will hereinafter refer only to the State's contribution totaling 5% of participating salary which applies to members contributing at the 3% rate.

The Accounting Balance Sheet shown on the following page was furnished by the Executive Secretary. The Reserves for benefits already granted in the amount of $31, 040, 647. 00 reflects the balances shown on the System records before making the adjustments which will result from the current valuation.

The Actuarial Balance Sheet shown on the page following the Accounting Balance Sheet summarizes the results of the valuation.

STATE EMPLOYEES' RETIREMENT ASSOCIATION
OF
MINNESOTA

ACCOUNTING BALANCE SHEET AS OF DECEMBER 31, 1965

ASSETS

Cash in Office	$ 25.00
Deposits in Banks	30,162.70
Short Term Investments	1,165,533.23
Accounts Receivable:	
(a) Accrued Employee Contributions	141,367.80
(b) Accrued Employer Contributions	225,491.77
(c) Past Due Employer Contributions	772,554.38
(d) Employee Back Payments	12,710.77
(e) Investment Maturities and Sales	83,909.91
(f) Other	855.53
Accrued Interest on Investments	755,745.14
Dividends on Stocks, Declared But Not Yet Received	4,151.90
Investment in Bonds at Amortized Cost	64,829,878.80
Investment in Stocks at Cost	17,545,633.60
Equipment at Cost, Less Depreciation	10,234.04
Prepaid Postage	1,000.00
Total Assets	$85,579,254.57

LIABILITIES AND RESERVES

LIABILITIES

Accounts Payable:	
(a) Annuities	$ 3,986.00
(b) Survivor Benefits	7,344.50
(c) Refundments	1,970.84
(d) Accrued Expenses	15,362.76
Suspense Items:	
(a) Withdrawals Account (Undelivered Refund Warrants Canceled)	664.36
(b) Unredeemed 6-year old Warrants (Canceled by State Auditor)	2,044.05
Total Current Liabilities	$ 31,372.51

RESERVES

Employee Contribution Reserve	$30,724,611.87
Retirement and Disability Reserve	30,599,870.00
Survivor Benefit Reserve	440,777.00
State Contribution Reserve	23,782,623.19
Total Reserves	$85,547,882.06
Total Liabilities and Reserves	$85,579,254.57

STATE EMPLOYEES' RETIREMENT ASSOCIATION
OF
MINNESOTA

ACTUARIAL BALANCE SHEET AS OF DECEMBER 31, 1965

ASSETS

1.	Assets on Hand from Accounting Balance Sheet		$ 85,579,254.57
2.	Present Value of Employees' Future Contributions (3% of Participating Salary)		37,555,935.00
3.	Present Value of State Future Contributions Applicable to:		
	(a) Entry Age Normal Cost (2.11% of Participating Salary)	$26,414,341.00	
	(b) Unfunded Accrued Liability (Balance of 3% "Matching" Contribution or .89% of Participating Salary)	11,141,594.00	
	(c) Unfunded Accrued Liability (Portion to be funded by 2% "Additional" Contribution)	19,822,458.94	57,378,393.94
4.	TOTAL ASSETS		$180,513,583.51

LIABILITIES

5.	Current Liabilities from Accounting Balance Sheet		$ 31,372.51
6.	Present Value of Earned and Earnable Benefits Payable to Presently Active Members:		
	(a) Retirement Benefits	$115,644,679.00	
	(b) Disability Benefits	9,406,020.00	
	(c) Refundments due to death or withdrawal	21,636,659.00	146,687,358.00
7.	Present Value of Benefits for Deferred Annuitants:		
	(a) Retirement Benefits	$ 1,818,491.00	
	(b) Refundments due to death or withdrawal	88,980.00	
	(c) Benefits already Authorized	22,867.00	1,930,338.00
8.	Present Value of Refundments to former members without vested rights		365,044.00
9.	Present Value of Benefits Payable to Annuitants:		
	(a) Retirement Benefits	$ 30,049,018.00	
	(b) Disability Benefits	1,013,294.00	
	(c) Survivors' Benefits	437,159.00	31,499,471.00
10.	TOTAL LIABILITIES		$180,513,583.51

The Actuarial Balance Sheet is a convenient device to present the results of an actuarial valuation. The following comments are intended to assist you in your understanding of the items contained in the Actuarial Balance Sheet.

Item 1 shows the assets on hand and was taken directly from the Accounting Balance Sheet.

Item 2 shows the present value of members' future contributions required by law equal to 3% of the members participating salaries.

Item 3 shows the present value of State future contributions to the System. We have divided the present value applicable to the State's contributions as follows:

Item 3(a) The portion attributable to the State's share of the total entry age normal cost contribution of 5.11% of members' participating salaries. After deducting the members' share of 3%, the State's share of the entry age normal cost contribution amounts to 2.11% of members' participating salaries.

Item 3(b) The portion attributable to the balance of the State's "matching" 3% contribution (.89% of members' participating salaries) which is being used to pay a portion of the State's share of the cost.

Item 3(c) The portion attributable to the State's "additional" 2% contribution. On the basis of present levels of participating salaries, this 2% "additional" contribution amounts to approximately $2,579,000 per year and the full amount of the contribution will amortize the $19,822,458.94 shown in Item 3(c) in about 8-3/4 years. The level annual contribution required to amortize $19,822,458.94 over the 32 year period ending on December 31, 1997 is $957,926.00.

Item 5 shows the current liabilities and was taken directly from the Accounting Balance Sheet.

Item 6 shows the actuarially computed present value of all benefits earned to December 31, 1965 and earnable after that date that will be paid from the System to presently active members.

Item 7 shows the actuarially computed present value of all benefits payable from the System to members who have terminated service with vested benefits.

Item 8 shows the actuarially computed present value of refundments that will be paid from the System to members who have terminated service without vested benefits.

Item 9 shows the actuarially computed present value of all benefits payable from the System with respect to members who have retired. The System's account "Reserve for Benefits Already Granted" should be adjusted to $31,522,338.00 as of January 1, 1966. This is the sum of Item 7(c) and Item 9.

Minnesota Statutes 1965, Chapter 359, requires, in Section 1, Subdivision 4(1), that the actuary of the System prepare an exhibit setting forth certain specified information with regard to the System as of the valuation date, including "Reserves Required" under the System. In an earlier conference with representatives of the State's Employee Retirement System's Interim Commission, we were advised that "Reserve Required", as contemplated in the aforementioned statute, may be defined as the actuarially computed present value applicable to a specified benefit reduced by the actuarially computed present value of any portion of the total entry age normal cost contribution under the System which is applicable to the specified benefit.

The exhibit required by Section 1, Subdivision 4(1) of Minnesota Statutes 1965, Chapter 359, is presented on the following pages of this Section II and we hereby certify that the Reserves Required set forth therein have been computed in accordance with the Entry Age Normal Cost (level Normal Cost) basis in the manner outlined in the definition referred to above.

STATE EMPLOYEES' RETIREMENT ASSOCIATION OF MINNESOTA

EXHIBIT REQUIRED BY MINNESOTA STATUTES 1965, CHAPTER 359, SECTION 1, SUBDIVISION 4(1) AS OF DECEMBER 31, 1965

ASSETS AND UNFUNDED ACCRUED LIABILITY

	Assets		
1.	Cash in Office		$ 25.00
2.	Deposits in Banks		30,162.70
3.	Short Term Investments		1,165,533.23
4.	Accounts Receivable:		
	(a) Members' Contributions	$154,078.57	
	(b) Employer Contributions	998,046.15	
	(c) Other	84,765.44	1,236,890.16
5.	Accrued Interest on Investments		755,745.14
6.	Dividends declared but not received		4,151.90
7.	Bonds at Amortized Cost		64,829,878.80
8.	Stocks at Cost (Market Value 12/31/65 - $20,420,134.00)		17,545,633.60
9.	Equipment at Cost, less depreciation		10,234.04
10.	Other - Prepaid Postage		1,000.00
11.	TOTAL ASSETS		$ 85,579,254.57
	Unfunded Accrued Liability		
12.	Unfunded Accrued Liability to be funded by portion of State's 3% "Matching Contribution" in excess of State's share of entry age normal cost contribution		$ 11,141,594.00
13.	Unfunded Accrued Liability to be funded by State's 2% "Additional" contribution		19,822,458.94
14.	Total Unfunded Accrued Liability		$ 30,964,052.94
15.	TOTAL ASSETS AND UNFUNDED ACCRUED LIABILITY		$116,543,307.51

CURRENT LIABILITIES AND RESERVES REQUIRED

	Current Liabilities		
16.	Accounts payable:		
	(a) Annuity Payments	$ 3,986.00	
	(b) Survivor Payments	7,344.50	
	(c) Refunds to members	1,970.84	
	(d) Accrued expenses	15,362.76	$ 28,664.10
17.	Suspense items		2,708.41
18.	Total Current Liabilities		$ 31,372.51
	Reserves Required		
19.	Total Reserves Required per attached schedule		116,511,935.00
20.	TOTAL CURRENT LIABILITIES AND RESERVES REQUIRED		$116,543,307.51

Note: Accumulated contributions, without interest, of members not yet retired amounted to $30,724,611.87 as of December 31, 1965.

STATE EMPLOYEES' RETIREMENT ASSOCIATION OF MINNESOTA

DETERMINATION OF RESERVES REQUIRED AS OF DECEMBER 31, 1965

Benefits For:	(1) Present Value of Benefits	(2) Present Value of Applicable Portion of Normal Cost Contribution	(3) Reserves Required (1) - (2)
1. Active Members			
(a) Retirement Benefits	$115,644,679.00	$42,062,647.00	$ 73,582,032.00
(b) Disability Benefits	9,406,020.00	5,633,390.00	3,772,630.00
(c) Refundments due to death or withdrawal	21,636,659.00	16,274,239.00	5,362,420.00
2. Deferred Annuitants	1,930,338.00	-	1,930,338.00
3. Former Members Without Vested Rights	365,044.00	-	365,044.00
4. Annuitants			
(a) Retirement Benefits	30,049,018.00	-	30,049,018.00
(b) Disability Benefits	1,013,294.00	-	1,013,294.00
(c) Survivors' Benefits	437,159.00	-	437,159.00
5. TOTAL	$180,482,211.00	$63,970,276.00	$116,511,935.00

Minnesota Statutes 1965, Chapter 359, requires, in Section 1, Subdivision 4(2) and (3), that there be submitted annually an analysis of the System's income and deductions from income with increases in total reserves required being specifically referred to as a deduction from income. The exhibit required by Section 1, Subdivision 4(2) and (3) is presented on the following pages of this Section II. Items of income and deductions from income with the exception of increases in total reserves required were taken directly from statements prepared by the Executive Secretary.

Inasmuch as any excess of "deductions from income" over "income" must be equal to the increase in the Unfunded Accrued Liability of the System over the period covered by the analysis, we have confirmed that fact in Item 12 of the exhibit. Two additional valuations of the System would have been required to determine the portion of the $10,191,903.75 increase in Unfunded Accrued Liability which could be attributed to the change in actuarial assumptions. While we were not authorized to make the additional valuations, we are satisfied that the portion of the increase in Unfunded Accrued Liability attributable to the change in assumptions is relatively small and that the major portion of the increase can be attributed to the increase in maximum participating salaries from $4,800 to $7,200 per year.

STATE EMPLOYEES' RETIREMENT ASSOCIATION OF MINNESOTA

EXHIBIT REQUIRED BY MINNESOTA STATUTES 1965, CHAPTER 359, SECTION 1, SUBDIVISION 4(2) and (3) FISCAL YEAR ENDING DECEMBER 31, 1965

ANALYSIS OF INCOME AND DEDUCTIONS FROM INCOME

INCOME			
1.	From Members:		
	(a) Employee Contributions		$ 3,829,654.51
	(b) Employee Accrued Contributions Receivable		141,367.80
	(c) Employee Contributions Applied to Past Due Payments		8,346.55
2.	From Employers:		
	(a) Employer Contributions		3,829,231.21
	(b) Employer Additional Contributions		2,520,196.59
	(c) Employer Accrued Contributions Receivable		225,491.77
	(d) Employer Past Due Contributions Receivable		28,957.56
3.	From Investments:		
	(a) Interest on Bonds and Notes (Net)		2,563,047.77
	(b) Dividends on Corporate Stock		535,436.12
	(c) Premiums on Bonds Called		1,284.53
4.	Other Revenues:		
	(a) Interest on Back Payments by Members		4,742.35
	(b) Gain on Sale of Assets		14.25
	(c) Adjustment in Prior Year Benefit Payments		374.24
	(d) Unclaimed Contributions and Benefits Canceled		713.24
5.	TOTAL INCOME		$13,688,858.49
DEDUCTIONS FROM INCOME			
6.	Benefits:		
	(a) Annuities, Disability and Retirement Allowances		$ 3,277,665.95
	(b) Survivor Benefits		37,638.45
	(c) Interest Paid on Deposits of Deceased Members		42,233.70
7.	Refundments:		
	(a) Left Service		1,090,164.01
	(b) Members of Other Retirement Systems		227,391.90
	(c) Member Deaths		222,026.87
	(d) Annuitant Deaths		45,942.55
	(e) Erroneous Deductions		12,161.62
8.	Operating Expenses		240,684.71
9.	Net Loss on Sale of Investments		129,761.48
10.	Increase in Total Reserves Required:		
	(a) Reserves Required 12-31-64	$ 97,956,844.00	
	(b) Reserves Required 12-31-65	116,511,935.00	18,555,091.00
11.	TOTAL DEDUCTIONS FROM INCOME		$23,880,762.24
12.	EXCESS OF DEDUCTIONS FROM INCOME OVER INCOME		$10,191,903.75
13.	INCREASE IN UNFUNDED ACCRUED LIABILITY:		
	(a) Unfunded Accrued Liability 12-31-64	$ 20,772,149.19	
	(b) Unfunded Accrued Liability 12-31-65	30,964,052.94	
			$10,191,903.75

Minnesota Statutes 1965, Chapter 359, requires, in Section 1, Subdivision 4(4), that there be submitted annually an analysis of changes in the membership of the System. The exhibit required by Section 1, Subdivision 4(4) is presented on the following pages of this Section II. All of the information was taken directly from an exhibit prepared by the Executive Secretary.

STATE EMPLOYEES' RETIREMENT ASSOCIATION OF MINNESOTA

EXHIBIT REQUIRED BY MINNESOTA STATUTES 1965, CHAPTER 359, SECTION 1, SUBDIVISION 4(4)
FISCAL YEAR ENDING DECEMBER 31, 1965

ANALYSIS OF CHANGES IN MEMBERSHIP

Active Members

1.	Active Members as of January 1, 1965		29,553
2.	Increases:		
	(a) New Members	6,885	
	(b) Former members who returned after taking a refundment	821	
	(c) Former members who returned after an inactive period:		
	Restored from the Inactive Account	126	
	Restored after transfer of account to Retirement Fund	57	
3.	Total Increases	7,889	
4.	Decreases:		
	(a) Refundments:		
	Termination of service	4,192	
	Deductions taken in error	162	
	Less accounts in which a balance remained	(20)	
	(b) Deaths	139	
	(c) Members becoming annuitants	338	
	(d) Transferred to inactive status	1,235	
5.	Total Decreases	6,046	
6.	Net Increase		1,843
7.	Active Members as of December 31, 1965		31,396

Inactive Members

1.	Inactive Members as of January 1, 1965		6,687
2.	Increases:		
	(a) Accounts transferred to inactive status	1,238	
3.	Total Increases	1,238	
4.	Decreases:		
	(a) Returned to active membership	126	
	(b) Refunds	326	
	(c) Deaths	9	
	(d) Became Annuitants	30	
	(e) Transferred to the Retirement Fund	2,369	
5.	Total Decreases	2,860	
6.	Net Increase		(1,622)
7.	Inactive Members as of December 31, 1965		5,065

Annuitants and Beneficiaries

1.	Annuitants and Beneficiaries as of January 1, 1965		3,130
2.	Increases:		
	(a) Disability Retirement	29	
	(b) Service Retirement	298	
	(c) Deferred Retirement	41	
	(d) Beneficiaries of reversionary and optional type annuities who began receiving	14	
3.	Total Increases	382	
4.	Decreases:		
	(a) Deaths	152	
	(b) Disability who recovered	1	
5.	Total Decreases	153	
6.	Net Increase		229
7.	Annuitants and Beneficiaries as of December 31, 1965		3,359

SECTION III

CONCLUSIONS

In a Retirement System such as yours where both the benefits and contributions are specified in the Retirement Law, the major purpose of an actuarial valuation is to determine whether or not the prescribed contributions are adequate to provide the benefits that will ultimately be paid under the System. The results of the current valuation show that the benefits to be provided under the System can be financed by the 3% members' contributions and the State's "matching" 3% contributions plus the State's "additional" 2% contribution for approximately 8-3/4 years.

STATE EMPLOYEES' RETIREMENT ASSOCIATION
OF
MINNESOTA

NUMBER OF ACTIVE MEMBERS AND ANNUAL SALARIES AS OF DECEMBER 31, 1965 BY SEX AND ATTAINED AGE

	MALE		FEMALE		TOTAL	
Age	Number	Annual Salary	Number	Annual Salary	Number	Annual Salary
20 and Under	564	$ 906,470	1,885	$ 3,088,055	2,449	$ 3,994,525
21	268	631,836	646	1,545,098	914	2,176,934
22	304	741,830	675	1,706,747	979	2,448,577
23	434	1,265,280	786	2,183,407	1,220	3,448,687
24	462	1,613,727	569	1,812,872	1,031	3,426,599
25	424	1,599,314	437	1,392,663	861	2,991,977
26	364	1,510,875	366	1,251,207	730	2,762,082
27	427	1,987,092	282	959,522	709	2,946,614
28	388	1,858,722	235	757,990	623	2,616,712
29	375	1,863,540	193	645,010	568	2,508,550
30	369	1,896,666	188	624,147	557	2,520,813
31	369	1,940,375	162	555,032	531	2,495,407
32	344	1,869,592	155	506,850	499	2,376,442
33	383	2,113,378	133	457,079	516	2,570,457
34	385	2,283,250	160	542,089	545	2,825,339
35	355	2,100,909	124	455,613	479	2,556,522
36	350	1,987,556	149	523,148	499	2,510,704
37	341	1,957,828	152	534,208	493	2,492,036
38	330	1,922,864	164	531,649	494	2,454,513
39	323	1,891,749	197	696,303	520	2,588,052
40	359	2,142,403	195	659,333	554	2,801,736
41	381	2,239,813	215	733,568	596	2,973,381
42	374	2,226,814	215	723,540	589	2,950,354
43	341	1,980,774	232	806,340	573	2,787,114
44	384	2,132,018	234	823,794	618	2,955,812
45	382	2,268,647	248	882,844	630	3,151,491
46	365	2,094,155	245	883,766	610	2,977,921
47	385	2,240,073	255	950,201	640	3,190,274
48	363	2,120,462	267	967,691	630	3,088,153
49	343	1,925,872	283	1,008,765	626	2,934,637
50	360	1,872,702	282	1,017,347	642	2,890,049
51	330	1,857,094	351	1,257,177	681	3,114,271
52	361	1,978,820	312	1,153,799	673	3,132,619
53	330	1,847,056	356	1,454,665	686	3,301,721
54	336	1,927,612	296	1,114,312	632	3,041,924

STATE EMPLOYEES' RETIREMENT ASSOCIATION
OF
MINNESOTA

NUMBER OF ACTIVE MEMBERS AND ANNUAL SALARIES AS OF DECEMBER 31, 1965 BY SEX AND ATTAINED AGE

	MALE		FEMALE		TOTAL	
Age	Number	Annual Salary	Number	Annual Salary	Number	Annual Salary
55	349	$2,047,526	315	$1,267,859	664	$3,315,385
56	323	1,838,275	299	1,200,855	622	3,039,130
57	367	2,183,280	276	1,123,268	643	3,306,548
58	351	2,053,613	296	1,249,743	647	3,303,356
59	332	1,918,335	270	1,154,406	602	3,072,741
60	316	1,816,927	262	1,112,039	578	2,928,966
61	338	2,000,815	210	880,657	548	2,881,472
62	275	1,622,669	221	982,727	496	2,605,396
63	257	1,513,160	174	722,577	431	2,235,737
64	228	1,416,644	158	692,657	386	2,109,301
65	207	1,306,360	128	546,672	335	1,853,032
66	157	917,211	95	448,785	252	1,365,996
67	102	668,554	66	282,257	168	950,811
68	81	538,062	52	240,504	133	778,566
69	78	580,449	31	165,458	109	745,907
70	40	270,702	29	127,883	69	398,585
71	21	138,211	6	24,272	27	162,483
72	19	102,250	4	23,240	23	125,490
73	19	118,361	2	7,868	21	126,229
74	11	77,688	1	3,714	12	81,402
75	8	32,215	2	16,429	10	48,644
76	3	15,611	-	-	3	15,611
77	5	23,052	1	10,369	6	33,421
78	4	34,520	-	-	4	34,520
79	3	23,762	-	-	3	23,762
80	2	7,789	-	-	2	7,789
81	3	17,308	-	-	3	17,308
82	1	12,042	-	-	1	12,042
83	-	-	-	-	-	-
84	-	-	-	-	-	-
85	-	-	-	-	-	-
86	1	22,089	-	-	1	22,089
Total	16,854	$88,114,648	14,542	$47,490,070	31,396	$135,604,718

REPORT ON

ACTUARIAL VALUATION

STATE EMPLOYEES'

RETIREMENT ASSOCIATION

OF MINNESOTA

DECEMBER 31, 1965

3-1/2% INTEREST RATE ASSUMPTION

May 27, 1966

COATES, HERFURTH & ENGLAND, CONSULTING ACTUARIES

COATES, HERFURTH & ENGLAND
CONSULTING ACTUARIES
301 EAST COLORADO BLVD.
PASADENA, CALIFORNIA 91101

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SAN FRANCISCO
DENVER
PASADENA

TELEPHONE
AREA CODE 213 681-4455

May 27, 1966

Board of Trustees
State Employees' Retirement
Association of Minnesota
Centennial Office Building
St. Paul, Minnesota 55101

Gentlemen:

We are pleased to transmit herewith our report on the actuarial valuation of your Retirement System made as of December 31, 1965 on the basis of a 3-1/2% interest rate assumption.

This valuation was authorized under Contract No. E-9557.

We look forward to the opportunity of discussing this report with you at your convenience.

Very truly yours,

COATES, HERFURTH & ENGLAND
Consulting Actuaries

By ____________________
Robert H. Little, F.S.A.

RHL:th

REPORT ON

ACTUARIAL VALUATION

OF THE

STATE EMPLOYEES' RETIREMENT ASSOCIATION

OF

MINNESOTA

AS OF

DECEMBER 31, 1965

ON THE BASIS OF 3-1/2% INTEREST RATE ASSUMPTION

The supplemental contract under which this valuation was authorized specified that the actuarial valuation be carried out on the basis of a 3-1/2% interest rate assumption and upon the actuarial assumptions developed during the course of the December 31, 1964 actuarial investigation. The valuation was carried out on the basis of the $7,200 maximum annual participating salary which became effective July 1, 1965.

In order to develop the entry age normal cost contribution rate for new employees, we carried out a complete valuation of presently active members who were employed during the preceding five-year period. The results of these calculations indicate that the total entry age normal cost rate amounts to 4.69% of participating salary. This rate compares with a 5.11% rate developed on the basis of a 3% interest assumption.

Employees are required by law to contribute 3% and, accordingly, the State's share of the entry age normal cost contribution rate amounts to 1.69%. We expect the entry age normal cost rate to remain fairly stable unless there is a change in employment practices or in the Retirement Law.

The law requires that the State make the following contributions to the Fund with respect to members contributing at a 3% rate:

(1) A "matching" contribution equal to 3% of the members' participating salaries, and

(2) An "additional" contribution equal to two-thirds of members' contributions, or 2% of participating salaries.

In the case of members contributing at a 6% rate, the required contributions by the State are:

(1) A "matching" contribution equal to 6% of the members' participating salaries, and

(2) An "additional" contribution equal to one-sixth of members' contributions, or 1% of participating salaries.

We have been advised that it is the intent of the Minnesota Legislature to pay the "additional" contributions referred to above for a limited time only. Inasmuch as there were only 38 active employees who were contributing at the 6% level as of December 31, 1965, we will hereinafter refer only to the State's contribution totaling 5% of participating salary which applies to members contributing at the 3% rate.

The Actuarial Balance Sheet shown on the following page summarizes the results of the valuation. An Accounting Balance Sheet has not been included in this report because it would duplicate the Accounting Balance Sheet included in our report on the 3% valuation required by law.

STATE EMPLOYEES' RETIREMENT ASSOCIATION
OF
MINNESOTA

ACTUARIAL BALANCE SHEET AS OF DECEMBER 31, 1965

3-1/2% INTEREST RATE ASSUMPTION

ASSETS

1.	Assets on Hand from Accounting Balance Sheet		$ 85,579,254.57
2.	Present Value of Employees' Future Contributions (3% of Participating Salary)		36,114,055.00
3.	Present Value of State Future Contributions Applicable to:		
	(a) Entry Age Normal Cost (1.69% of Participating Salary)	$20,344,251.00	
	(b) Unfunded Accrued Liability (Balance of 3% "Matching" Contribution or 1.31% of Participating Salary)	15,769,804.00	
	(c) Unfunded Accrued Liability (Portion to be funded by 2% "Additional" Contribution)	7,390,477.94	43,504,532.94
4.	TOTAL ASSETS		$165,197,842.51

LIABILITIES

5.	Current Liabilities from Accounting Balance Sheet		$ 31,372.51
6.	Present Value of Earned and Earnable Benefits Payable to Presently Active Members:		
	(a) Retirement Benefits	$103,113,156.00	
	(b) Disability Benefits	8,552,610.00	
	(c) Refundments due to death or withdrawal	20,926,937.00	132,592,703.00
7.	Present Value of Benefits for Deferred Annuitants:		
	(a) Retirement Benefits	$ 1,685,134.00	
	(b) Refundments due to death or withdrawal	88,980.00	
	(c) Benefits already Authorized	21,626.00	1,795,740.00
8.	Present Value of Refundments to former members without vested rights		365,044.00
9.	Present Value of Benefits Payable to Annuitants:		
	(a) Retirement Benefits	$ 29,012,913.00	
	(b) Disability Benefits	972,092.00	
	(c) Survivors' Benefits	427,978.00	30,412,983.00
10.	TOTAL LIABILITIES		$165,197,842.51

The Actuarial Balance Sheet is a convenient device to present the results of an actuarial valuation. The following comments are intended to assist you in your understanding of the items contained in the Actuarial Balance Sheet.

Item 1 shows the assets on hand and was taken directly from the Accounting Balance Sheet.

Item 2 shows the present value of members' future contributions required by law equal to 3% of the members' participating salary.

Item 3 shows the present value of State future contributions to the System. We have divided the present value applicable to the State's contributions as follows:

Item 3(a) The portion attributable to the State's share of the total entry age normal cost contribution of 4.69% of members' participating salaries. After deducting the members' share of 3%, the State's share of the entry age normal cost contribution amounts to 1.69% of members' participating salaries.

Item 3(b) The portion attributable to the balance of the State's "matching" 3% contribution (1.31% of members' participating salaries) which is being used to pay a portion of the State's share of the cost.

Item 3(c) The portion attributable to the State's "additional" 2% contribution. On the basis of present levels of participating salaries, this 2% "additional" contribution amounts to approximately \$2,579,000 per year and the full amount of the contribution will amortize the \$7,390,477.94 shown in Item 3(c) in about 3 years. The level annual contribution required to amortize \$7,390,477.94 over the 32 year period ending on December 31, 1997 is \$380,940.00.

Item 5 shows the current liabilities and was taken directly from the Accounting Balance Sheet.

Item 6 shows the actuarially computed present value of all benefits earned to December 31, 1965 and earnable after that date that will be paid from the System to presently active members.

Item 7 shows the actuarially computed present value of all benefits payable from the System to members who have terminated service with vested benefits.

Item 8 shows the actuarially computed present value of refundments that will be paid from the System to members who have terminated service without vested benefits.

Item 9 shows the actuarially computed present value of all benefits payable from the System with respect to members who have retired.

The three exhibits presented on the following pages of this report are those which conform to the requirements of Minnesota Statutes 1965, Chapter 359, Section 1, Subdivisions (1), (2) and (3), except for the fact that they reflect a 3-1/2% interest assumption rather than the 3% assumption required by Chapter 359.

STATE EMPLOYEES' RETIREMENT ASSOCIATION OF MINNESOTA

EXHIBIT REQUIRED BY MINNESOTA STATUTES 1965, CHAPTER 359, SECTION 1, SUBDIVISION 4(1)
AS OF
DECEMBER 31, 1965

3-1/2% INTEREST RATE ASSUMPTION

ASSETS AND UNFUNDED ACCRUED LIABILITY

Assets			
1.	Cash in Office		$ 25.00
2.	Deposits in Banks		30,162.70
3.	Short Term Investments		1,165,533.23
4.	Accounts Receivable:		
	(a) Members' Contributions	$154,078.57	
	(b) Employer Contributions	998,046.15	
	(c) Other	84,765.44	1,236,890.16
5.	Accrued Interest on Investments		755,745.14
6.	Dividends declared but not received		4,151.90
7.	Bonds at Amortized Cost		64,829,878.80
8.	Stocks at Cost (Market Value 12-31-65 - $20,420,134.00)		17,545,633.60
9.	Equipment at Cost, less depreciation		10,234.04
10.	Other - Prepaid Postage		1,000.00
11.	TOTAL ASSETS		$ 85,579,254.57
Unfunded Accrued Liability			
12.	Unfunded Accrued Liability to be funded by portion of State's 3% "Matching Contribution" in excess of State's share of entry age normal cost contribution		$ 15,769,804.00
13.	Unfunded Accrued Liability to be funded by State's 2% "Additional" contribution		7,390,477.94
14.	Total Unfunded Accrued Liability		$ 23,160,281.94
15.	TOTAL ASSETS AND UNFUNDED ACCRUED LIABILITY		$108,739,536.51

CURRENT LIABILITIES AND RESERVES REQUIRED

Current Liabilities			
16.	Accounts payable:		
	(a) Annuity Payments	$ 3,986.00	
	(b) Survivor Payments	7,344.50	
	(c) Refunds to members	1,970.84	
	(d) Accrued expenses	15,362.76	$ 28,664.10
17.	Suspense items		2,708.41
18.	Total Current Liabilities		$ 31,372.51
Reserves Required			
19.	Total Reserves Required per attached schedule		108,708,164.00
20.	TOTAL CURRENT LIABILITIES AND RESERVES REQUIRED		$108,739,536.51

Note: Accumulated contributions, without interest, of members not yet retired amounted to $30,724,611.87 as of December 31, 1965.

STATE EMPLOYEES' RETIREMENT ASSOCIATION OF MINNESOTA

DETERMINATION OF RESERVES REQUIRED AS OF DECEMBER 31, 1965

3-1/2% INTEREST RATE ASSUMPTION

Benefits For:	(1) Present Value of Benefits	(2) Present Value of Applicable Portion of Normal Cost Contribution	(3) Reserves Required (1) - (2)
1. Active Members			
(a) Retirement Benefits	$103, 113, 156. 00	$35, 873, 294. 00	$ 67, 239, 862. 00
(b) Disability Benefits	8, 552, 610. 00	5, 055, 968. 00	3, 496, 642. 00
(c) Refundments due to death or withdrawal	20, 926, 937. 00	15, 529, 044. 00	5, 397, 893. 00
2. Deferred Annuitants	1, 795, 740. 00	-	1, 795, 740. 00
3. Former Members Without Vested Rights	365, 044. 00	-	365, 044. 00
4. Annuitants			
(a) Retirement Benefits	29, 012, 913. 00	-	29, 012, 913. 00
(b) Disability Benefits	972, 092. 00	-	972, 092. 00
(c) Survivors' Benefits	427, 978. 00	-	427, 978. 00
5. TOTAL	$165, 166, 470. 00	$56, 458, 306. 00	$108, 708, 164. 00

STATE EMPLOYEES' RETIREMENT ASSOCIATION OF MINNESOTA

EXHIBIT REQUIRED BY MINNESOTA STATUTES 1965, CHAPTER 359, SECTION 1, SUBDIVISION 4(2) and (3)
FISCAL YEAR ENDING DECEMBER 31, 1965

3-1/2% INTEREST RATE ASSUMPTION

ANALYSIS OF INCOME AND DEDUCTIONS FROM INCOME

INCOME			
1.	From Members:		
	(a) Employee Contributions		$ 3,829,654.51
	(b) Employee Accrued Contributions Receivable		141,367.80
	(c) Employee Contributions Applied to Past Due Payments		8,346.55
2.	From Employers:		
	(a) Employer Contributions		3,829,231.21
	(b) Employer Additional Contributions		2,520,196.59
	(c) Employer Accrued Contributions Receivable		225,491.77
	(d) Employer Past Due Contributions Receivable		28,957.56
3.	From Investments:		
	(a) Interest on Bonds and Notes (Net)		2,563,047.77
	(b) Dividends on Corporate Stock		535,436.12
	(c) Premiums on Bonds Called		1,284.53
4.	Other Revenues:		
	(a) Interest on Back Payments by Members		4,742.35
	(b) Gain on Sale of Assets		14.25
	(c) Adjustment in Prior Year Benefit Payments		374.24
	(d) Unclaimed Contributions and Benefits Canceled		713.24
5.	TOTAL INCOME		$13,688,858.49
DEDUCTIONS FROM INCOME			
6.	Benefits:		
	(a) Annuities, Disability and Retirement Allowances		$ 3,277,665.95
	(b) Survivor Benefits		37,638.45
	(c) Interest Paid on Deposits of Deceased Members		42,233.70
7.	Refundments:		
	(a) Left Service		1,090,164.01
	(b) Members of Other Retirement Systems		227,391.90
	(c) Member Deaths		222,026.87
	(d) Annuitant Deaths		45,942.55
	(e) Erroneous Deductions		12,161.62
8.	Operating Expenses		240,684.71
9.	Net Loss on Sale of Investments		129,761.48
10.	Increase in Total Reserves Required:		
	(a) Reserves Required 12-31-64	$ 97,956,844.00	
	(b) Reserves Required 12-31-65	108,708,164.00	10,751,320.00
11.	TOTAL DEDUCTIONS FROM INCOME		$16,076,991.24
12.	EXCESS OF DEDUCTIONS FROM INCOME OVER INCOME		$ 2,388,132.75
13.	INCREASE IN UNFUNDED ACCRUED LIABILITY:		
	(a) Unfunded Accrued Liability 12-31-64	$ 20,772,149.19	
	(b) Unfunded Accrued Liability 12-31-65	23,160,281.94	
			$ 2,388,132.75