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Public Employees Retirement Assn.

Public Employees Retirement Association
State of Minnesota

ACTUARIAL VALUATION REPORT

November 26, 1971

A. S. Hansen, inc.

Public Employees Retirement Association
State of Minnesota

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1366-01-83

A. S. Hansen, inc.
ACTUARIES AND CONSULTANTS
1080 Green Bay Road
Lake Bluff, Illinois 60044
Telephone 312-234-3400

November 26, 1971

Board of Trustees
Public Employees Retirement Association
203 Capitol Square Building
550 Cedar Street
St. Paul, Minnesota 55101

Gentlemen:

In accordance with your request, we have made an actuarial valuation of the Public Employees Retirement Association of the State of Minnesota for the year ended June 30, 1971, 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. A copy of this report will supply the data required by the legislative commission for the year ended June 30, 1971.

Respectfully submitted,

A. S. HANSEN, INC.

Davis H Roenisch

Davis H. Roenisch
Fellow, Society of Actuaries

DHR:bm
1366-01-83

General Fund

FINANCIAL STATISTICS

AND

ACTUARIAL ASSUMPTIONS

Public Employees Retirement Association
State of Minnesota

General Fund

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

ASSETS

Cash - On Hand	$ 50.00		
On Deposit and In Transit	98,311.86	$ 98,361.86	
Minnesota Adjustable Fixed Benefit Fund		79,486,441.78	
Accounts Receivable:			
M.S. 1969, Sec. 353.36	108,130.78		
M.S. 1969 and 1971, Sec. 353.36	35,549.75		
M.S. 1969, Sec. 353.83	12,160.33		
Social Security (From Members and Units)	8,641.33		
Member Contributions	1,047,241.08		
Employer Contributions	2,605,260.89		
Interest	1,558,802.93		
Dividends	426,960.54		
From Police and Fire Fund	32,022.83		
From Social Security (Overpayments)	764.37		
From MSRS and TRA	16,406.22		
Other	14,141.75	5,866,082.80	$ 85,450,886.44
Current Liabilities:			
Accounts Payable	$ 40,188.96		
Penalties Refundable	5,722.79		
Donations Suspense	251,696.81		
Social Security Refunds - Suspense	159.90		
Social Security Employee Shortage - Suspense	185.03		
Members Contribution - Suspense	7,480.91		
Omitted Deductions - Suspense	6,541.46		311,975.86
Net Current Assets			$ 85,138,910.58

INVESTMENTS

Bonds			
U.S. Government	$11,945,000.00		
Municipal	14,408,000.00		
Corporate	71,916,742.92		
Canadian Government Insured	4,591,569.75		
Stocks			
Common	73,375,800.69		
Preferred	10,123.07	$176,247,236.43	
Miscellaneous			
Office Equipment (Less Depreciation)	$ 30,164.45		
Other	6,519.54	36,683.99	$176,283,920.42
Total Assets			$261,422,831.00

Members Accumulated Contributions - $90,247,759.74

1366-01-83

Exhibit 2

Public Employees Retirement Association
State of Minnesota

General Fund

SOURCES AND USES OF FUNDS
July 1, 1970 - June 30, 1971

Sources		Uses	
Employee Contributions	$ 15,299,079.29	Refunds	
		Employee Contributions	$ 3,551,072.10
Employer Contributions	22,564,084.92	Employer Contributions	76,572.03
Various Accounts Receivable	400,495.19	Penalties Refunded	1,438.37
Investment Income	7,586,082.26	Donations Refunded	9,187.54
Minnesota Adjustable Fixed Benefit Fund	1,141,631.88	Benefits Paid	
		Retirement	8,881,332.72
		Survivor	2,488,305.15
Transfer from Police and Fire Fund	33,805.19	Disability	250,203.27
		Direct Expense	709,632.60
Investment Sales			
Bonds	51,285,932.27	Social Security	21,386.54
Stocks	5,101,127.91		
		Investment Purchases	
Cancelled Warrants	75,617.10	Bonds	59,719,056.79
		Stocks	23,249,641.55
Miscellaneous Income	50,824.41		
Decrease in Cash Accounts	52,257.22	Payments to Minnesota Adjustable Fixed Benefit Fund	4,559,768.38
		Transfers to Police and Fire Fund	21,849.43
		Interest Paid on Refunds	51,491.17
	$103,590,937.64		$103,590,937.64
Cash Balance, 6/30/71	98,311.86		
Total (Statement of Receipts and Disbursements)	$103,689,249.50		

Public Employees Retirement Association
State of Minnesota

General Fund

RECONCILIATION OF ASSET BALANCES
(June 30, 1971)

Asset Balance, July 1, 1970			$224,083,483.44
Add:			
Employer Contributions		$ 22,329,104.40	
Employee Contributions		15,382,867.13	
Employee Contributions Transferred from Police and Fire Fund		236.57	
Minnesota Adjustable Fixed Benefit Fund Income		6,930,275.07	
Investment Earnings		7,872,618.34	
Gain on Sales of Stock		411,690.78	
Unit Matching Contributions		139,631.59	
Other Income		47,629.48	
Total Additions			53,114,053.36
			$277,197,536.80
Deduct:			
Benefits Paid			
Retirement	$ 8,718,661.11		
Survivor	2,471,660.75		
Disability	247,241.65	$ 11,437,563.51	
Refunds		3,506,233.26	
Transfers to Police and Fire Fund		4,825.95	
Interest Paid on Refunds		51,491.17	
Retroactive Social Security Payments		24,436.08	
Administrative Expenses		670,419.80	
Total Deductions			15,694,969.77
			$261,502,567.03
Current Liabilities and Accounts Payable			311,975.86
Decrease in Reserve Accounts During 1970-71 Not Affecting Current Year Income and Expenditures			79,736.03
Asset Balance, June 30, 1971			$261,734,806.86

Exhibit 4

Public Employees Retirement Association
State of Minnesota

ASSET ALLOCATION
(July 1, 1971)

	Regular Fund	Coordinated Fund	General Fund Total
Net Assets, July 1, 1970	$204,194,835.36	$ 19,888,648.08	$224,083,483.44
Accounts Payable	365,062.58	35,557.22	400,619.80
Total Assets, July 1, 1970	$204,559,897.94	$ 19,924,205.30	$224,484,103.24
Contributions and Disbursements During Year			
1. Employer Contributions	$ 15,530,645.59	$ 6,938,104.94	$ 22,468,750.53
2. Employee Contributions	10,818,551.15	4,564,538.01	15,383,089.16
3. Transfer to Police and Fire Fund	4,825.95	-	4,825.95
4. Benefits Paid			
(i) Retirement	7,065,219.85	1,653,441.26	8,718,661.11
(ii) Survivor	2,471,660.75	-	2,471,660.75
(iii) Disability	226,688.38	20,553.27	247,241.65
5. Refunds	2,628,272.64	929,451.79	3,557,724.43
6. Social Security	-	24,436.08	24,436.08
Net: Sum 1 and 2 Minus Sum 3 through 6	$ 13,952,529.17	$ 8,874,760.55	$ 22,827,289.72
Estimated Adjustment for Transfers	$ 227,344.53	$ 227,344.53	
Minnesota Adjustable Fixed Benefit Fund Income	$ 6,563,427.31	$ 366,847.76	$ 6,930,275.07
Income and Expenses During Year (Allocated on Assets at July 1, 1970 plus 1/2 net change during year)			
1. Decrease in Reserves	$ 71,463.13	$ 8,272.90	$ 79,736.03
2. Investment Income	7,424,781.62	859,527.50	8,284,309.12
3. Miscellaneous Income	42,687,75	4,941.73	47,629.48
4. Administrative Expenses Minus Increase in Accounts Payable	680,308.09	78,755.65	759,063.74
Net: Sum of 2 and 3 Minus 1 and 4	$ 6,715,698.15	$ 777,440.68	$ 7,493,138.83
Total Assets, July 1, 1971	$231,564,208.04	$ 30,170,598.82	$261,734,806.86
Accounts Payable	275,946.28	36,029.58	311,975.86
Net Assets, July 1, 1971	$231,288,261.76	$ 30,134,569.24	$261,422,831.00

Public Employees Retirement Association
State of Minnesota

General Fund

ACTUARIAL ASSUMPTIONS

The 1967 experience analysis required by law verified the appropriateness of the assumptions used in prior reports. The assumptions can be summarized as follows:

Interest:	$3\frac{1}{2}$%
Mortality Before Retirement: After Retirement:	1951 Group Annuity 1965 Group Annuity
Retirement Age:	65
Disability:	PERA Experience
Turnover:	PERA Experience
Salary Scale:	PERA Experience
1952-57 Wage Base:	Estimate based on 1952-57 contributions

Age 65 was used as the average age at retirement since it both reflected the retirement rates developed in earlier studies, and the prior calculations of the legislative commission.

A detailed statement of the mortality rates, disability rates, turnover factors, and salary scale is set out in the following pages.

Public Employees' Retirement Association
State of Minnesota

General Fund

Male Employees

MORTALITY RATES
(Per 1,000 Employees)

Age	Rate	Age	Rate
20	.616	45	3.580
21	.640	46	4.065
22	.666	47	4.599
23	.693	48	5.180
24	.724	49	5.807
25	.758	50	6.475
26	.796	51	7.187
27	.838	52	7.938
28	.885	53	8.731
29	.935	54	9.563
30	.991	55	10.436
31	1.054	56	11.346
32	1.122	57	12.298
33	1.198	58	13.302
34	1.281	59	14.379
35	1.374	60	15.555
36	1.475	61	16.866
37	1.587	62	18.353
38	1.711	63	20.068
39	1.849	64	22.067
40	2.000	65	24.418
41	2.192		
42	2.450		
43	2.769		
44	3.147		

Public Employees' Retirement Association
State of Minnesota

General Fund

Female Employees

MORTALITY RATES
(Per 1,000 Employees)

Age	Rate	Age	Rate
20	.371	45	1.994
21	.393	46	2.169
22	.416	47	2.361
23	.440	48	2.573
24	.467	49	2.809
25	.495	50	3.070
26	.524	51	3.319
27	.556	52	3.597
28	.591	53	3.908
29	.628	54	4.257
30	.669	55	4.648
31	.712	56	5.102
32	.760	57	5.637
33	.812	58	6.265
34	.868	59	6.997
35	.930	60	7.837
36	.997	61	8.788
37	1.071	62	9.848
38	1.152	63	11.010
39	1.240	64	12.264
40	1.338	65	13.597
41	1.446		
42	1.563		
43	1.694		
44	1.836		

Public Employees Retirement Association
State of Minnesota

General Fund

All Employees

DISABILITY RATES
(Per 1,000 Employees)

Age	Rate	Age	Rate
20	.69	45	3.17
21	.73	46	3.41
22	.77	47	3.67
23	.81	48	3.94
24	.86	49	4.25
25	.91	50	4.61
26	.96	51	5.01
27	1.02	52	5.48
28	1.08	53	6.00
29	1.15	54	6.53
30	1.22	55	7.12
31	1.29	56	7.76
32	1.37	57	8.45
33	1.45	58	9.17
34	1.54	59	9.91
35	1.63	60	10.69
36	1.73	61	11.53
37	1.84	62	12.38
38	1.96	63	13.25
39	2.09	64	14.15
40	2.23		
41	2.38		
42	2.55		
43	2.74		
44	2.94		

Public Employees Retirement Association
State of Minnesota

General Fund

Male Employees

SEPARATION RATES
(Per 1,000 Employees)

Age	Separation	Age	Separation
20	275.0	40	81.8
21	263.8	41	76.2
22	250.5	42	71.5
23	239.0	43	67.0
24	226.5	44	62.2
25	216.0	45	58.0
26	204.5	46	53.9
27	192.5	47	49.7
28	182.0	48	45.0
29	171.5	49	42.0
30	161.0	50	38.5
31	152.8	51	34.5
32	143.5	52	31.0
33	133.0	53	27.0
34	124.5	54	23.0
35	117.0	55	19.5
36	109.2	56	15.0
37	101.0	57	10.0
38	94.0	58	5.0
39	88.0		

Public Employees' Retirement Association
State of Minnesota

General Fund

Female Employees

SEPARATION RATES
(Per 1,000 Employees)

Age	Separation	Age	Separation
20	383.2	40	134.0
21	377.7	41	123.0
22	371.2	42	113.0
23	363.1	43	104.5
24	351.6	44	97.2
25	335.6	45	90.0
26	322.6	46	83.0
27	310.3	47	78.7
28	299.7	48	74.5
29	289.1	49	70.4
30	280.5	50	66.3
31	269.4	51	62.8
32	259.0	52	59.5
33	246.3	53	55.5
34	232.5	54	52.2
35	216.0	55	47.8
36	199.0	56	41.0
37	183.0	57	36.2
38	165.0	58	21.0
39	148.5	59	5.0

Public Employees Retirement Association
State of Minnesota

General Fund

All Employees

EARNINGS PROGRESSION

Age	Rate	Age	Rate
20	.4102	45	.6730
21	.4184	46	.6864
22	.4268	47	.7002
23	.4353	48	.7142
24	.4440	49	.7284
25	.4529	50	.7430
26	.4619	51	.7579
27	.4712	52	.7730
28	.4806	53	.7885
29	.4902	54	.8043
30	.5000	55	.8203
31	.5100	56	.8368
32	.5202	57	.8535
33	.5306	58	.8706
34	.5412	59	.8880
35	.5521	60	.9057
36	.5631	61	.9238
37	.5744	62	.9423
38	.5859	63	.9612
39	.5976	64	.9804
40	.6095	65	1.0000
41	.6217		
42	.6342		
43	.6468		
44	.6598		

Regular Employees

(Not Covered by Social Security)

ACTUARIAL REQUIREMENTS - $3\frac{1}{2}\%$

Public Employees Retirement Association
State of Minnesota

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

Regular Employees

RESERVES

Entry Age Normal Reserves			
Retirement	$313,504,184.00		
Disability	19,061,912.00		
Survivors	21,047,864.00		
Refund	17,832,312.00		
	$371,446,272.00		
Less Value of Benefits to be Earned in the Future	171,625,564.00	$199,820,708.00	
Vested Members		2,795,151.00	
Retired Members			
Retirements Payable from Minnesota Adjustable Fixed Benefit Fund	$ 74,682,935.61		
Disability	2,018,227.00		
Survivors	25,012,984.00		
Reserve for Future Old Law Survivors	11,610,722.00	113,324,868.61	$315,940,727.61
Unfunded Obligation			$ 84,652,465.85
Funded Obligation			231,288,261.76

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Regular Employees

AMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		$487,566,292
Obligation for Service Rendered to Date	$ 315,940,728	
Net Assets	231,288,262	
Accrued Unfunded Obligation	84,652,466	
Funding Ratio		73%
Amortization (26-Year) Requirement	5,011,883	
Covered Payroll	184,388,919	
Amortization (26-Year) Rate Requirement		2.72%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	$ 171,625,564	
Present Value of Future Payroll	1,483,326,000	
Normal Cost Rate Requirement	11.57%	
Employee Contribution Rate	6.00	
Employer Normal Cost Rate Requirement		5.57%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		8.50%
Amortization (26 Year) Rate Requirement	2.72%	
Normal Cost Rate Requirement	5.57	
Total Requirement	0.20	8.49%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		0.01%

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Regular Employees

AMORTIZATION RATE REQUIREMENT

	Period			
	10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	$ 84,652,466	$ 84,652,466	$ 84,652,466	$ 84,652,466
Amortization Requirement	10,178,728	5,956,239	4,602,667	3,964,044
Covered Payroll	184,388,919	184,388,919	184,388,919	184,388,919
Amortization Rate Requirement	5.52%	3.23%	2.50%	2.15%

ACTUARIAL BALANCE

	10-Year	20-Year	30-Year	40-Year
Employer Contribution Rate Set by Law	8.50%	8.50%	8.50%	8.50%
Amortization Rate Requirement	5.52%	3.23%	2.50%	2.15%
Normal Cost Rate Requirement	5.57	5.57	5.57	5.57
Allowance for Expenses	0.20	0.20	0.20	0.20
Total Requirement	11.29%	9.00%	8.27%	7.92%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	(2.79%)	(0.50%)	0.23%	0.58%

Public Employees Retirement Association
State of Minnesota

Regular Employees

STATEMENT OF REVENUE, EXPENDITURES,
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)*
(Year Ending June 30, 1971)

Revenue:		
Employer Contributions	$15,530,645.59	
Employee Contributions	10,818,551.15	
Investment Income	7,467,469.37	
Minnesota Adjustable Fixed Benefit Fund Income	6,563,427.31	
Decrease in Accounts	89,116.30	
Total Revenue		$40,469,209.72
Expenditure:		
Decrease in Reserves	$ 71,463.13	
Benefits	9,763,568.98	
Refund of Contributions	2,628,272.64	
Administrative Expense	680,308.09	
Transfer to Police and Fire Fund	4,825.95	
Estimated Transfer to Coordinated	227,344.53	
Total Expenditures		13,375,783.32
Increase in Assets (1971)		$27,093,426.40

*See Exhibit 4.

Public Employees Retirement Association
State of Minnesota

RECONCILIATION OF CHANGE IN ACTUARIAL RESERVES

Regular Employees

ALLOCATION OF CHANGE IN ACTUARIAL RESERVES

	Increase	Decrease	
Increase in Assets			$ 27,093,426
Amortization Payment		$1,981,058	
Excess Interest (1.33% x Average Invested Assets)		1,906,188	
Estimated Deficit in Rate	$ 35,416		
Transfers to Coordinated		195,918	
Amortization Payment Applied to Higher Payroll		206,885	
Increases in Compensation	2,243,900		
Totals	$2,279,316	$4,290,049	
Expected Decrease (Increase) in Unfunded			2,010,733
Net Change in Reserves			$ 25,082,693
Experience Variation Gain (Loss)			(26,051)
Total			$ 25,056,642
1971 Actuarial Reserve			$315,940,728
1970 Actuarial Reserve			290,884,086
Increase (Decrease)			$ 25,056,642

Regular Employees

(Not Covered by Social Security)

ACTUARIAL REQUIREMENTS - 3%

Public Employees Retirement Association
State of Minnesota

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

Regular Employees

RESERVES

Entry Age Normal Reserves			
Retirement	$352,251,892.00		
Disability	21,417,879.00		
Survivors	23,649,285.00		
Refund	20,036,306.00		
	$417,355,362.00		
Less Value of Benefits to be Earned in the Future	203,184,766.00	$214,170,596.00	
Vested Members		3,049,250.00	
Retired Members			
Retirements Payable from Minnesota Adjustable Fixed Benefit Fund	$ 74,682,935.61		
Disability	2,080,646.00		
Survivors	25,786,581.00		
Reserve for Future Old Law Survivors	11,969,816.00	114,519,978.61	$331,739,824.61
Unfunded Obligation			$100,451,562.85
Funded Obligation			231,288,261.76

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Regular Employees

AMORTIZATION RATE REQUIREMENT

Present Value of Benefit (For Both Past and Future Service)		$534,924,591
Obligation for Service Rendered to Date	$ 331,739,825	
Net Assets	231,288,262	
Accrued Unfunded Obligation	100,451,563	
Funding Ratio		70%
Amortization (26-Year) Requirement	5,619,089	
Covered Payroll	184,388,919	
Amortization (26-Year) Rate Requirement		3.05%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	$ 203,184,766		
Present Value of Future Payroll	1,545,131,300		
Normal Cost Rate Requirement		13.15%	
Employee Contribution Rate		6.00	
Employer Normal Cost Rate Requirement			7.15%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		8.50%
Amortization (26-Year) Rate Requirement	3.05%	
Normal Cost Rate Requirement	7.15	
Allowance for Expenses	0.20	
Total Requirement		10.40%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		(1.90%)

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Regular Employees

AMORTIZATION RATE REQUIREMENT

	Period			
	10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	$100,451,563	$100,451,563	$100,451,563	$100,451,563
Amortization Requirement	11,775,988	6,751,923	5,124,964	4,345,774
Covered Payroll	184,388,919	184,388,919	184,388,919	184,388,919
Amortization Rate Requirement	6.39%	3.66%	2.78%	2.36%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law	8.50%	8.50%	8.50%	8.50%
Amortization Rate Requirement	6.39%	3.66%	2.78%	2.36%
Normal Cost Rate Requirement	7.15	7.15	7.15	7.15
Allowance for Expenses	0.20	0.20	0.20	0.20
Total Requirement	13.74%	11.01%	10.13%	9.71%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	(5.24%)	(2.51%)	(1.63%)	(1.21%)

Regular Employees

(Not Covered by Social Security)

EMPLOYEE STATISTICS

AND

SUMMARY OF PLAN

Public Employees Retirement Association
State of Minnesota

RECONCILIATION OF ACTIVE MEMBERS

Regular Employees

As of July 1, 1970		30,001
New Entrants		224
Reinstated		188
Transfers to Coordinated Plan		-68
Total		30,345
Separations:		
a. With Refund of Contributions		
(i) Death	126	
(ii) Withdrawal	1,600	1,726
b. With Deferred Annuity		55
c. With Disability Annuity		54
d. With Normal Retirement Annuity		471
e. With Survivor Annuity		212
Total		2,518
Active as of July 1, 1971		27,827

Public Employees Retirement Association
State of Minnesota

RECONCILIATION OF ANNUITANTS

Regular Employees

Normal Retirement Annuitants	
As of July 1, 1970	5,301
Additions During Year	471
Deletions During Year	-303
Total as of July 1, 1971	5,469
Annual Annuity - July 1, 1970	$7,995,537
- July 1, 1971	8,371,476
Disability Annuitants	
As of July 1, 1970	152
Additions During Year	54
Deletions During Year	-27
Total as of July 1, 1971	179
Annual Annuity - July 1, 1970	$ 200,529
- July 1, 1971	239,262
Survivor Annuitants	
(a) Spouse Only	
As of July 1, 1970	2,579
Additional During Year	212
Deletions During Year	-132
Total as of July 1, 1971	2,659
Annual Annuity - July 1, 1970	$2,030,070
- July 1, 1971	2,084,357
(b) Children	
As of July 1, 1970	666
Additions During Year	90
Deletions During Year	-86
Total as of July 1, 1971	669
Annual Annuity - July 1, 1970	$ 423,386
- July 1, 1971	443,814
Deferred Vested Members	
As of July 1, 1970	299
Additions During Year	55
Deletions During Year	-36
Total as of July 1, 1971	318

Exhibit 13

Public Employees Retirement Association
State of Minnesota

Regular Employees

Retired Under the Law in Force Prior to July 1, 1957

Payable From Adjustable Fixed Benefit Fund

	Male		Female	
Age	Number	Monthly Annuity	Number	Monthly Annuity
60	3	$ 480.34	1	$ 148.91
61	4	846.49	10	792.69
62	12	1,622.62	13	1,025.48
63	11	2,030.26	10	1,147.87
64	14	2,159.46	20	2,643.41
65	12	2,064.54	23	3,329.53
66	47	8,771.07	26	4,417.89
67	64	12,283.80	35	4,888.27
68	67	13,294.95	33	4,969.55
69	73	13,723.97	53	8,680.17
70	107	20,295.20	50	7,988.40
71	108	20,812.98	53	8,322.30
72	120	22,064.31	53	7,601.40
73	98	18,097.30	64	10,373.47
74	127	20,078.18	59	9,105.26
75	169	28,780.90	70	10,040.29
76	159	24,760.77	69	8,256.23
77	172	27,185.06	59	7,233.91
78	131	18,400.54	48	4,874.40
79	142	18,968.01	56	4,961.22
80	126	16,232.20	42	4,518.36
81	90	12,084.26	51	4,984.18
82	119	15,674.68	51	4,871.25
83	87	10,375.26	56	5,091.03
84	69	7,837.26	30	3,112.77
85	60	6,495.69	19	2,006.59
86	43	5,190.28	19	1,156.54
87	41	5,049.56	19	2,043.70
88	33	3,547.80	7	590.58
89	12	1,501.99	13	1,236.84
90	14	1,520.18	7	487.95
91	10	816.35	4	296.65
92	7	840.33	2	75.58
93	7	750.75	1	26.23
94	2	281.57	1	121.65
95	-	-	-	-
96	2	346.77	2	154.53
97	2	208.46	1	65.79
98	1	81.08	-	-
Totals	2,365	$365,555.22	1,130	$141,640.87

Public Employees Retirement Association
State of Minnesota

Regular Employees

Retired Under Law in Force July 1, 1957 and Subsequent

Payable From Adjustable Fixed Benefit Fund

	Male		Female	
Age	Number	Monthly Annuity	Number	Monthly Annuity
57	-	$ -	1	$ 35.16
59	-	-	1	91.90
60	1	126.51	4	379.18
61	2	163.38	3	279.45
62	5	489.40	4	385.71
63	7	686.20	5	720.70
64	9	841.21	2	252.23
65	41	6,122.26	26	2,625.48
66	98	13,224.82	65	7,222.63
67	84	10,650.93	82	7,526.80
68	108	13,371.96	80	6,704.77
69	116	14,510.20	85	6,915.46
70	121	14,310.14	63	4,554.27
71	98	9,218.64	61	4,233.46
72	95	7,809.32	70	5,143.64
73	88	7,584.84	45	2,545.91
74	73	5,687.14	45	3,150.71
75	60	4,772.34	40	2,199.62
76	44	3,691.40	31	2,095.47
77	44	3,439.00	23	1,903.90
78	21	2,092.74	20	1,670.14
79	18	1,745.99	12	1,393.34
80	6	576.77	9	1,063.83
81	8	576.99	3	229.78
82	4	816.97	4	857.93
83	1	203.63	1	23.91
84	2	340.89	-	-
85	1	25.32	2	401.74
86	4	559.73	-	-
87	-	-	2	242.72
88	1	36.46	-	-
89	1	19.96	-	-
Totals	1,161	$123,695.14	789	$ 64,849.84

Public Employees Retirement Association
State of Minnesota

Regular Employees

Retired Under Combination of Law in Force Prior and Subsequent to July 1, 1957

Payable From Adjustable Fixed Benefit Fund

	Male		Female	
Age	Number	Monthly Annuity	Number	Monthly Annuity
65	1	$ 196.28	-	$ -
66	2	217.96	-	-
67	-	-	2	288.08
68	-	-	1	46.48
69	-	-	1	89.14
71	4	228.91	-	-
72	1	75.47	2	168.29
73	1	32.28	1	107.63
74	1	32.60	1	28.22
76	2	199.44	-	-
77	-	-	1	23.33
79	2	115.42	-	-
87	1	32.43	-	-
Totals	15	$1,130.79	9	$ 751.17

Public Employees Retirement Association
State of Minnesota

Regular Employees

Beneficiaries Payable From Adjustable Fixed Benefit Fund
Annuities Payable For Certain Period Not Dependent on Age

Number	Monthly Annuity
7	$707.67

	Male		Female	
Age	Number	Monthly Annuity	Number	Monthly Annuity
53	-	$ -	1	$ 33.47
59	-	-	1	30.76
61	-	-	1	126.09
62	-	-	1	49.44
64	-	-	2	97.96
65	-	-	1	34.59
66	-	-	1	134.91
67	-	-	3	218.18
68	-	-	4	594.26
69	-	-	1	65.69
70	-	-	1	67.48
71	-	-	2	287.68
72	-	-	2	143.98
74	-	-	3	251.58
75	-	-	2	431.76
76	-	-	1	45.69
78	1	99.26	-	-
Totals	1	$ 99.26	27	$2,613.52

Public Employees Retirement Association
State of Minnesota

Regular Employees

Disability Retirements

	Male		Female	
Age	Number	Monthly Annuity	Number	Monthly Annuity
44	2	$ 194.09	-	$ -
47	1	132.78	-	-
48	-	-	1	107.60
49	3	288.82	2	205.67
50	1	155.58	2	157.11
51	3	285.77	-	-
52	2	332.61	-	-
53	2	248.19	-	-
54	2	249.15	4	596.58
55	-	-	1	89.89
56	3	244.60	2	164.59
57	6	663.01	4	311.98
58	12	1,457.42	9	618.89
59	11	1,179.30	4	353.54
60	11	1,358.17	2	213.46
61	13	1,361.51	1	61.45
62	14	1,924.65	11	1,331.58
63	17	2,119.10	7	608.53
64	9	1,330.44	3	201.38
65	11	1,048.64	3	342.41
Totals	123	$14,573.83	56	$ 5,364.66

Exhibit 18

Public Employees Retirement Association
State of Minnesota

Regular Employees

Beneficiaries Under Law in Force Prior to July 1, 1957

	Male		Female	
Age	Number	Monthly Annuity	Number	Monthly Annuity
60	-	$ -	6	$ 424.42
61	-	-	8	581.45
62	-	-	14	1,256.64
63	-	-	14	1,129.34
64	-	-	21	1,491.79
65	-	-	23	1,734.17
66	-	-	36	2,613.22
67	-	-	45	3,013.17
68	-	-	47	3,569.54
69	1	84.01	63	4,774.98
70	-	-	61	4,459.54
71	-	-	48	3,581.58
72	-	-	60	3,960.25
73	-	-	76	5,278.24
74	-	-	65	4,358.07
75	-	-	76	5,640.26
76	2	148.24	67	4,377.07
77	-	-	72	4,904.24
78	-	-	82	5,158.37
79	-	-	68	4,007.77
80	-	-	56	3,166.03
81	1	20.61	51	2,720.64
82	1	65.00	49	2,606.32
83	2	49.08	49	3,375.62
84	-	-	36	1,948.67
85	1	49.89	29	1,539.15
86	2	100.49	22	1,135.99
87	-	-	23	938.63
88	3	116.75	16	903.75
89	-	-	17	806.46
90	-	-	7	364.13
91	-	-	6	291.67
92	-	-	7	372.36
93	-	-	3	146.00
94	1	42.48	1	40.00
95	-	-	1	55.00
96	-	-	-	-
97	-	-	2	108.30
Totals	14	$ 676.55	1,327	$86,832.83

Public Employees Retirement Association
State of Minnesota

Regular Employees

SURVIVOR ANNUITIES

Female

Age	Number	Montly Annuity	Age	Number	Monthly Annuity
26	-	$ -	57	49	$ 3,113.60
27	-	-	58	60	3,722.03
29	1	65.00	59	59	3,440.64
30	-	-	60	54	3,238.10
31	1	65.00	61	69	4,185.62
32	-	-	62	55	3,330.66
33	2	130.00	63	43	2,859.11
34	2	101.78	64	55	3,635.82
35	1	65.00	65	43	3,342.40
36	2	130.00	66	37	2,450.14
37	1	65.00	67	43	2,832.04
38	3	195.00	68	41	2,719.04
39	3	195.00	69	37	2,489.64
40	4	260.00	70	34	2,605.37
41	5	325.00	71	41	2,852.80
42	10	608.55	72	25	1,810.62
43	8	520.00	73	25	1,870.29
44	15	961.15	74	20	1,281.98
45	14	901.44	75	17	1,221.72
46	13	845.00	76	17	1,309.07
47	14	874.04	77	14	1,118.42
48	23	1,392.79	78	7	543.98
49	31	2,015.00	79	9	636.23
50	28	1,763.03	80	12	1,066.25
51	27	1,668.94	81	6	435.06
52	37	2,295.62	82	7	411.58
53	29	1,885.00	83	8	654.56
54	45	2,707.09	84	5	314.96
55	38	2,342.91	85	2	108.14
56	51	3,135.86	86	1	23.97
			87	2	215.00
			88	2	130.00
			89	1	65.00
			92	1	148.66
			Totals	1,309	$85,695.70

Public Employees Retirement Association
State of Minnesota

Regular Employees

Survivor Annuities

Age	Number	Monthly Annuity
53	1	$ 57.94
58	1	65.00
63	1	65.00
66	3	148.86
73	2	130.00
76	1	24.57
Totals	9	$491.37

Children

Number	Total Monthly Annuity
669	$36,984.46

Exhibit 21

Public Employees Retirement Association
State of Minnesota

Regular Employees

CONSIDERED EARNINGS

Active Male Employees
(Age and Service as of July 1, 1971)

YEARS OF SERVICE

Age	Under 1 No.	Under 1 Earnings	1 to 2 No.	1 to 2 Earnings	2 to 5 No.	2 to 5 Earnings	5 to 10 No.	5 to 10 Earnings
Under 25	11	$ 42,282	10	$ 46,614	55	$ 351,848	19	$ 129,369
25 to 30	17	64,812	24	101,885	244	1,892,111	322	2,701,877
30 to 35	11	45,263	13	72,395	271	1,984,021	639	5,395,263
35 to 40	-	-	10	37,081	230	1,675,858	699	5,984,996
40 to 45	11	42,097	10	42,705	265	1,713,768	668	5,398,233
45 to 50	17	79,739	7	32,667	219	1,415,656	691	5,432,609
50 to 55	6	20,735	8	75,393	206	1,326,145	659	4,826,258
55 to 60	14	55,206	4	15,749	177	1,100,979	549	3,744,937
60 to 65	6	18,518	1	6,232	88	505,200	262	1,629,279
65 to 70	8	25,268	1	2,604	39	151,334	115	482,958
70 & Up	3	8,910	1	2,716	37	108,003	69	203,483
Total	104	$ 402,830	89	$ 436,041	1831	$12,224,923	4692	$ 35,929,262

YEARS OF SERVICE

Age	10 to 15 No.	10 to 15 Earnings	15 to 20 No.	15 to 20 Earnings	20 to 25 No.	20 to 25 Earnings	25 to 30 No.	25 to 30 Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 30	10	94,258	-	-	-	-	-	-
30 to 35	204	1,832,439	17	165,741	-	-	-	-
35 to 40	427	3,996,152	165	1,604,922	9	97,470	-	-
40 to 45	511	4,530,878	392	3,841,985	113	1,151,023	3	28,853
45 to 50	622	5,358,510	459	4,274,370	327	3,341,296	31	304,723
50 to 55	623	5,030,790	450	4,003,939	383	3,721,958	73	757,821
55 to 60	580	4,425,186	483	3,855,763	412	3,674,288	124	1,253,255
60 to 65	329	2,369,161	343	2,551,958	398	3,537,525	123	1,148,871
65 to 70	118	707,489	100	684,707	104	839,295	42	397,916
70 & Up	45	188,060	19	95,130	22	160,389	14	110,149
Total	3469	$28,532,923	2428	$21,078,515	1768	$16,523,244	410	$ 4,001,588

YEARS OF SERVICE

Age	30 to 35 No.	30 to 35 Earnings	35 to 40 No.	35 to 40 Earnings	40 & Up No.	40 & Up Earnings	All No.	All Earnings
Under 25	-	$ -	-	$ -	-	$ -	95	$ 570,113
25 to 30	-	-	-	-	-	-	617	4,854,943
30 to 35	-	-	-	-	-	-	1155	9,495,122
35 to 40	-	-	-	-	-	-	1540	13,396,479
40 to 45	-	-	-	-	-	-	1973	16,749,542
45 to 50	1	4,429	-	-	-	-	2374	20,243,999
50 to 55	11	127,654	2	16,075	-	-	2421	19,906,768
55 to 60	60	717,531	8	118,158	1	13,496	2412	18,974,548
60 to 65	71	800,058	42	501,074	16	215,607	1679	13,283,483
65 to 70	19	202,009	10	139,335	7	83,683	563	3,716,598
70 & Up	8	94,943	8	72,896	4	47,747	230	1,092,426
Total	170	$ 1,946,624	70	$ 847,538	28	$ 360,533	15059	$122,284,021

Exhibit 22

Public Employees Retirement Association
State of Minnesota

Regular Employees

CONSIDERED EARNINGS

Active Female Employees
(Age and Service as of July 1, 1971)

	YEARS OF SERVICE							
	Under 1		1 to 2		2 to 5		5 to 10	
Age	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	19	$ 65,632	11	$ 38,156	165	$ 793,883	98	$ 522,983
25 to 30	26	105,403	12	41,488	175	1,042,197	308	2,088,085
30 to 35	16	61,552	11	32,747	190	769,760	265	1,598,272
35 to 40	6	16,564	22	67,552	375	1,349,022	425	2,045,478
40 to 45	10	28,571	16	43,532	525	1,838,835	778	3,515,963
45 to 50	7	18,974	15	32,648	564	2,019,442	1061	4,877,847
50 to 55	-	-	12	24,041	458	1,636,582	991	4,383,171
55 to 60	-	-	11	31,868	334	1,162,408	733	3,132,141
60 to 65	1	175	4	7,769	131	340,687	383	1,510,454
65 to 70	2	4,192	2	2,978	46	96,256	103	255,819
70 & Up	-	-	-	-	30	43,837	38	74,983
Total	87	$ 301,063	116	$ 322,779	2993	$11,092,909	5183	$24,005,196

	YEARS OF SERVICE							
	10 to 15		15 to 20		20 to 25		25 to 30	
Age	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 30	20	117,972	-	-	-	-	-	-
30 to 35	91	595,451	14	92,018	-	-	-	-
35 to 40	89	616,912	39	285,578	10	66,907	-	-
40 to 45	206	1,222,560	65	464,787	39	308,203	7	58,379
45 to 50	373	2,100,492	85	612,796	64	530,578	20	167,622
50 to 55	556	2,962,122	203	1,308,552	77	598,851	27	235,236
55 to 60	597	3,054,563	284	1,721,874	132	989,399	48	456,436
60 to 65	399	1,881,285	268	1,525,171	166	1,189,351	51	429,723
65 to 70	119	529,735	75	355,363	49	279,846	21	165,608
70 & Up	30	69,410	15	42,031	9	42,493	6	52,637
Total	2480	$13,150,502	1048	$ 6,408,170	546	$ 4,005,628	180	$ 1,565,641

	YEARS OF SERVICE							
	30 to 35		35 to 40		40 & Up		All	
Age	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	-	$ -	-	$ -	-	$ -	293	$ 1,420,654
25 to 30	-	-	-	-	-	-	541	3,395,145
30 to 35	-	-	-	-	-	-	587	3,149,800
35 to 40	-	-	-	-	-	-	966	4,448,013
40 to 45	-	-	-	-	-	-	1646	7,480,830
45 to 50	-	-	-	-	-	-	2189	10,360,399
50 to 55	16	140,063	-	-	-	-	2340	11,288,618
55 to 60	34	288,560	15	171,244	1	9,337	2189	11,017,830
60 to 65	32	284,551	14	162,780	7	61,737	1456	7,393,683
65 to 70	8	63,859	6	52,470	1	10,835	432	1,816,961
70 & Up	-	-	1	7,574	-	-	129	332,965
Total	90	$ 777,033	36	$ 394,068	9	$ 81,909	12768	$62,104,898

Public Employees Retirement Association
State of Minnesota

Regular Employees

SUMMARY OF PLAN

1. Name

Public Employees Retirement Association.

2. Type of Plan

Self-insured, managed by a 12 member Board of Trustees consisting of the State Auditor, State Insurance Commissioner, State Treasurer, and nine others elected from the membership of the Association.

3. Employers Included

Any county, city, village, borough, town, school district within the State, or a department or unit of the State or any other public body employing any person who is a public employee as defined by the Law.

4. Employees Included

All full-time employees who did not elect coverage under Section 218(d) of the Social Security Act, except those on a per diem basis, of an eligible employer who is not contributing to another plan.

5. Service Considered

All periods of service in which salary deductions were made or for which payments in lieu of salary deduction were deposited, including seasonal layoff and authorized sick leaves.

6. Earnings Considered

(a) For service prior to July 1, 1957, average of highest consecutive 5 years prior to such date, not to exceed $4,800.

(b) For service during the period July 1, 1957 to July 1, 1965, all earnings not to exceed $4,800 in any calendar year.

(c) For service during the period July 1, 1965 to July 1, 1967, all earnings not to exceed $6,000 in any calendar year.

(d) After July 1, 1967, all earnings.

(e) Earnings considered for determining benefit under the law in force prior to 1957 shall be the average annual earnings during the 10-year period immediately preceding retirement limited to a maximum of $4,800.

7. Employer Contributions

Amount equal to 6% of total considered earnings for current service plus 2-1/2% of total considered earnings to amortize past service cost.

8. Employee Contributions

(a) For service prior to July 1, 1957, 4% of considered earnings.

(b) After July 1, 1957, 6% of considered earnings.

9. Normal Retirement Benefit

After attainment of age 65 and completion of 10 years of service.

Annuity equal to the sum of:

1) (a) 1% of considered earnings for each of the first ten years plus;
   (b) 2% of considered earnings for each of the second ten years plus;
   (c) 2-1/2% of considered earnings for each of the third ten years plus;
   (d) 3% of considered earnings for each year over 30.

plus 2) 10% per year of service prior to July 1, 1957 (maximum 100%) of the difference (if any) between an annuity computed under item 1 and an annuity computed entirely under the old law formula.

plus 3) An increment for considered earnings after July 1, 1965 in excess of $4,800 (if any).

10. Late Retirement Benefit

Annual Annuity determined as for Normal Retirement, considering Service and Earnings to actual retirement.

11. Early Retirement Benefit

After attainment of age 58 and completion of 20 years of service.

Annual Annuity determined as for Normal Retirement considering Service and Earnings to actual retirement and reduced by 1/2 of 1% for each month between actual retirement and attainment of age 65.

12. Disability Benefit

In the event of total and permanent disability after completion of 10 years of service or attainment of age 50 and completion of 5 years of service.

Annual Annuity determined as for Normal Retirement, considering Service and Earnings to date of disablement, plus a supplement equal to $5 for each year which age at disablement is less than 65, maximum $50.

13. Death Benefit

Active -- In event of death after 18 months of service.

Annual Annuity to dependent spouse of 30% of average salary not to exceed $65 per month, plus for each dependent child under age 18, 20% of average salary not to exceed $45 per month, plus 10% of average salary not to exceed $20 per month to be divided among dependent children. Maximum family benefit equal to lesser of $250 per month or 100% of average salary.

In lieu of above benefit, if employee has attained age 58 and completed 20 years of service, a 75% survivor benefit for spouse payable at age 62. Maximum benefit $150 per month.

Any employee (including Hospital employees) not eligible for above benefits, his contributions with interest at 2% shall be paid to his beneficiary.

Retired

(a) Under law in force July 1, 1957 and prior, 50% of his annuity continued to his beneficiary provided his beneficiary is his surviving spouse and has attained age 60, and has not remarried; or is the parent of the retired member.

(b) Under law in effect July 1, 1957 and subsequent, refund of contributions less benefit paid to date of death.

14. Separation Benefit

In event of termination after 10 years of service, a deferred vested benefit payable at age 65, provided participant does not withdraw contribution.

Annual Annuity determined as for Normal Retirement considering Service and Earnings to date of termination. In lieu of annuity, participant shall receive a refund of contributions without interest.

15. Optional Benefits

A participant may elect to receive an equivalent actuarially reduced annuity in the form of a joint and survivor annuity or a period certain and life thereafter annuity.

16. Expenses

Paid by Association from retirement fund.

17. Actuarial Method

For purpose of reports to the Legislative Commission, costs for the Plan shall be determined on an "entry-age level normal cost" basis amortizing the unfunded accrued liability over 40 years from 1957, 3½% interest.

Coordinated Employees

(Covered by Social Security)

ACTUARIAL REQUIREMENTS - $3\frac{1}{2}\%$

Public Employees Retirement Association
State of Minnesota

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

Coordinated Employees

RESERVES

Entry Age Normal Reserves			
Retirement	$ 93,147,964.00		
Disability	5,100,175.00		
Refund	15,535,493.00		
	$113,783,632.00		
Less Value of Benefits to be Earned in the Future	70,505,357.00	$ 43,278,275.00	
Vested Members		664,407.00	
Retired Members			
Retirements Payable from Minnesota Adjustable Fixed Benefit Fund	$ 4,803,506.17		
Disability	177,489.00		
Survivors	-	4,980,995.17	48,923,677.17
Unfunded Obligation			$ 18,789,107.93
Funded Obligation			30,134,569.24

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Coordinated Employees

AMORTIZATION RATE REQUIREMENT

Present Value of Benefit (For Both Past and Future Service)		$119,429,034
Obligation for Service Rendered to Date	$ 48,923,677	
Net Assets	30,134,569	
Accrued Unfunded Obligation	18,789,108	
Funding Ratio		62%
Amortization (26-Year) Requirement	1,112,417	
Covered Payroll	191,867,864	
Amortization (26-Year) Rate Requirement		0.58%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	$ 70,505,357	
Present Value of Future Payroll	1,364,889,800	
Normal Cost Rate Requirement	5.17%	
Employee Contribution Rate	3.00	
Employer Normal Cost Rate Requirement		2.17%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		4.50%
Amortization (26-Year) Rate Requirement	0.58%	
Normal Cost Rate Requirement	2.17	
Allowance for Expenses	0.20	
Total Requirement		2.95%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		1.55%

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Coordinated Employees

AMORTIZATION RATE REQUIREMENT

	Period			
	10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	$ 18,789,108	$ 18,789,108	$ 18,789,108	$ 18,789,108
Amortization Requirement	2,259,228	1,322,022	1,021,589	879,843
Covered Payroll	191,867,864	191,867,864	191,867,864	191,867,864
Amortization Rate Requirement	1.18%	0.69%	0.53%	0.46%

ACTUARIAL BALANCE

	10-Year	20-Year	30-Year	40-Year
Employer Contribution Rate Set by Law	4.50%	4.50%	4.50%	4.50%
Amortization Rate Requirement	1.18%	0.69%	0.53%	0.46%
Normal Cost Rate Requirement	2.17	2.17	2.17	2.17
Allowance for Expenses	0.20	0.20	0.20	0.20
Total Requirement	3.55%	3.06%	2.90%	2.83%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	0.95%	1.44%	1.60%	1.67%

Public Employees Retirement Association
State of Minnesota

Coordinated Employees

STATEMENT OF REVENUE, EXPENDITURES,
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)*
(Year Ending June 30, 1971)

Revenue:		
Employer Contributions	$ 6,938,104.94	
Employee Contributions	4,564,538.01	
Investment Income	864,469.23	
Transfer from Regular	227,344.53	
Minnesota Adjustable Fixed Benefit Fund Income	366,847.76	
Total Revenue		$12,961,304.47
Expenditure:		
Decrease in Reserves	$ 8,272.90	
Benefits	1,673,994.53	
Refund of Contributions	929,451.79	
Social Security	24,436.08	
Administrative Expense	78,755.65	
Increase (Decrease) in Accounts	472.36	
Total Expenditures		$ 2,715,383.31
Increase in Assets (1971)		$10,245,921.16

*See Exhibit 4.

Public Employees Retirement Association
State of Minnesota

RECONCILIATION OF CHANGE IN ACTUARIAL RESERVES

Coordinated Employees

ALLOCATION OF CHANGE IN ACTUARIAL RESERVES

	Increase	Decrease	
Increase in Assets			$10,245,921
Amortization Payment		$ 415,349	
Excess Interest (1.33% x Average Invested Assets)		271,967	
Estimated Excess in Rate		2,540,227	
Transfers from Regular	$ 68,130		
Amortization Payment Applied to Larger Payroll		284,366	
Increases in Compensation *	5,740,776		
Totals	$5,808,906	$3,511,909	
Expected Decrease (Increase) In Unfunded			(2,296,997)
Net Change in Reserves			$12,542,918
Experience Variation Gain (Loss)			689,547
Total			$11,853,371
1971 Actuarial Reserve			$48,923,677
1970 Actuarial Reserve			37,070,306
Increase (Decrease)			$11,853,371

*This is particularly marked for the coordinated group because of the very small past service earnings base. As the group matures the effect of increases in compensation on the obligation for service rendered to date for active employees will steadily decline.

Coordinated Employees

(Covered by Social Security)

ACTUARIAL REQUIREMENTS - 3%

Public Employees Retirement Association
State of Minnesota

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

Coordinated Employees

RESERVES

Entry Age Normal Reserves			
Retirement	$104,660,634.00		
Disability	5,730,534.00		
Refund	17,455,610.00		
	$127,846,778.00		
Less Value of Benefits to be Earned in the Future	83,599,500.00	$44,247,278.00	
Vested Members		707,677.00	
Retired Members			
Retirements Payable from Minnesota Adjustable Fixed Benefit Fund	$ 4,803,506.17		
Disability	182,978.00		
Survivors	-	4,986,484.17	$49,941,439.17
Unfunded Obligation			$19,806,869.93
Funded Obligation			30,134,569.24

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Coordinated Employees

AMORTIZATION RATE REQUIREMENT

Present Value of Benefit (For Both Past and Future Service)		$133,540,939
Obligation for Service Rendered to Date	$ 49,941,439	
Net Assets	30,134,569	
Accrued Unfunded Obligation	19,806,870	
Funding Ratio		60%
Amortization (26-Year) Requirement	1,107,962	
Covered Payroll	191,867,864	
Amortization (26-Year) Rate Requirement		0.58%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	$ 83,599,500	
Present Value of Future Payroll	1,421,760,200	
Normal Cost Rate Requirement	5.88%	
Employee Contribution Rate	3.00	
Employer Normal Cost Rate Requirement		2.88%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		4.50%
Amortization (26-Year) Rate Requirement	0.58%	
Normal Cost Rate Requirement	2.88	
Allowance for Expenses	0.20	
Total Requirement		3.66%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		0.84%

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Coordinated Employees

AMORTIZATION RATE REQUIREMENT

	Period			
	10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	$ 19,806,870	$ 19,806,870	$ 19,806,870	$ 19,806,870
Amortization Requirement	2,321,969	1,331,333	1,010,532	856,892
Covered Payroll	191,867,864	191,867,864	191,867,864	191,867,864
Amortization Rate Requirement	1.21%	0.69%	0.53%	0.45%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law	4.50%	4.50%	4.50%	4.50%
Amortization Rate Requirement	1.21%	0.69%	0.53%	0.45%
Normal Cost Rate Requirement	2.88	2.88	2.88	2.88
Allowance for Expenses	0.20	0.20	0.20	0.20
Total Requirement	4.29%	3.77%	3.61%	3.53%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	0.21%	0.73%	0.89%	0.97%

Coordinated Employees

(Covered by Social Security)

EMPLOYEE STATISTICS

AND

SUMMARY OF PLAN

Public Employees Retirement Association
State of Minnesota

RECONCILIATION OF ACTIVE MEMBERS

Coordinated Employees

As of July 1, 1970		31,205
New Entrants		12,729
Reinstated		2,432
Transfers to Coordinated Plan		68
Total		46,434
Separations:		
a. With Refund of Contributions		
(i) Death	95	
(ii) Withdrawal	7,793	7,888
b. With Deferred Annuity		42
c. With Disability Annuity		10
d. With Normal Retirement Annuity		190
e. With Survivor Annuity		1
Total		8,131
Active as of July 1, 1971		38,303

Public Employees Retirement Association
State of Minnesota

RECONCILIATION OF ANNUITANTS

Coordinated Employees

Normal Retirement Annuitants

As of July 1, 1970	362
Additions During Year	199
Deletions During Year	-11
Total as of July 1, 1971	550
Annual Annuity - July 1, 1970	$298,367
- July 1, 1971	486,800

Disability Annuitants

As of July 1, 1970	29
Additions During Year	10
Deletions During Year	-3
Total as of July 1, 1971	36
Annual Annuity - July 1, 1970	$ 22,112
- July 1, 1971	21,648

Survivor Annuitants

Spouse Only	
As of July 1, 1970	0
Additions During Year	0
Deletions During Year	0
Total as of July 1, 1971	0
Annual Annuity - July 1, 1970	$ 0
- July 1, 1971	0

Deferred Vested Members

As of July 1, 1970	20
Additions During Year	42
Deletions During Year	-13
Total as of July 1, 1971	49

Public Employees Retirement Association
State of Minnesota

Coordinated Employees
Retired - Laws 1967, Chapter 687
Payable From Adjustable Fixed Benefit Fund

	Male		Female	
Age	Number	Monthly Annuity	Number	Monthly Annuity
62	-	$ -	1	$ 57.17
63	-	-	1	58.18
64	2	167.72	3	330.04
65	12	1,369.69	9	854.12
66	73	5,203.95	21	1,549.15
67	74	4,830.51	25	1,655.13
68	65	4,437.91	23	2,440.44
69	37	2,400.21	19	923.44
70	29	1,507.75	11	798.50
71	29	2,177.39	11	1,252.95
72	12	829.90	11	1,199.24
73	14	1,103.61	5	270.34
74	11	869.56	3	289.71
75	10	548.63	3	122.97
76	5	856.32	3	357.03
77	5	258.90	-	-
78	2	190.82	2	292.96
79	4	185.27	2	63.24
80	3	273.33	3	286.64
81	2	204.27	1	133.97
82	1	62.86	-	-
85	2	102.23	-	-
87	-	-	1	50.61
Totals	392	$27,580.83	158	$12,985.83

Annuities Payable for Certain Period Not Dependent On Age

Number	Monthly Annuity
1	$25.21

Public Employees Retirement Association
State of Minnesota

Coordinated Employees

Disability Retirements

	Male		Female	
Age	Number	Monthly Annuity	Number	Monthly Annuity
44	1	$ 70.55	-	$ -
50	1	44.91	-	-
52	1	40.86	-	-
54	2	25.01	-	-
57	2	101.46	-	-
58	2	62.91	-	-
59	1	160.02	-	-
60	2	85.71	-	-
61	3	71.55	-	-
62	4	131.48	-	-
63	4	419.67	-	-
64	6	312.15	1	43.39
65	5	224.58	1	9.73
Totals	34	$1,750.86	2	$ 53.12

Public Employees Retirement Association
State of Minnesota

Coordinated Employees

CONSIDERED EARNINGS

Active Male Employees
(Age and Service as of July 1, 1971)

YEARS OF SERVICE

Age	Under 1 No.	Under 1 Earnings	1 to 2 No.	1 to 2 Earnings	2 to 5 No.	2 to 5 Earnings	5 to 10 No.	5 to 10 Earnings
Under 25	559	$ 2,853,657	744	$ 3,557,794	374	$ 2,303,231	5	$ 28,920
25 to 30	397	2,303,515	705	4,563,154	842	6,587,595	61	501,566
30 to 35	217	1,405,694	426	2,571,730	615	4,992,721	146	1,469,917
35 to 40	184	1,130,299	347	2,273,057	610	4,742,987	130	1,413,539
40 to 45	156	909,025	350	2,115,869	612	4,546,666	162	1,648,046
45 to 50	164	900,045	274	1,638,847	644	4,757,933	197	1,766,156
50 to 55	128	753,854	318	1,794,209	634	4,415,663	262	2,202,568
55 to 60	97	465,626	225	1,156,745	568	3,590,740	289	2,222,155
60 to 65	68	325,017	132	530,410	317	1,846,065	271	1,968,680
65 to 70	37	89,365	94	199,847	123	382,005	76	437,287
70 & Up	33	80,391	40	62,400	71	147,534	9	45,042
Total	2040	$11,216,488	3655	$20,464,062	5410	$38,313,140	1608	$13,703,876

YEARS OF SERVICE

Age	10 to 15 No.	10 to 15 Earnings	15 to 20 No.	15 to 20 Earnings	20 to 25 No.	20 to 25 Earnings	25 to 30 No.	25 to 30 Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 30	-	-	-	-	-	-	-	-
30 to 35	21	222,823	2	11,868	-	-	-	-
35 to 40	101	1,193,874	8	79,453	2	17,406	-	-
40 to 45	73	833,839	55	682,027	14	169,307	1	7,343
45 to 50	119	1,176,956	70	799,617	43	522,598	1	10,072
50 to 55	152	1,366,982	87	848,015	54	564,285	7	91,301
55 to 60	207	1,714,904	113	1,028,283	50	432,249	17	176,479
60 to 65	261	2,063,439	151	1,250,977	117	968,752	14	147,035
65 to 70	97	703,645	44	369,490	49	416,860	5	60,868
70 & Up	11	78,726	6	40,712	3	26,680	2	16,910
Total	1042	$ 9,355,188	536	$ 5,110,442	332	$ 3,118,137	47	$ 510,008

YEARS OF SERVICE

Age	30 to 35 No.	30 to 35 Earnings	35 to 40 No.	35 to 40 Earnings	40 & Up No.	40 & Up Earnings	All No.	All Earnings
Under 25	-	$ -	-	$ -	-	$ -	1682	$ 8,743,602
25 to 30	-	-	-	-	-	-	2005	13,955,830
30 to 35	-	-	-	-	-	-	1427	10,674,753
35 to 40	-	-	-	-	-	-	1382	10,850,615
40 to 45	-	-	-	-	-	-	1423	10,912,122
45 to 50	-	-	-	-	-	-	1512	11,572,224
50 to 55	1	6,700	-	-	-	-	1643	12,043,577
55 to 60	4	37,696	1	20,862	-	-	1571	10,845,739
60 to 65	6	74,166	4	55,507	-	-	1341	9,230,048
65 to 70	7	78,431	1	13,470	1	8,850	534	2,760,118
70 & Up	1	7,000	-	-	1	13,166	177	518,561
Total	19	$ 203,993	6	$ 89,839	2	$ 22,016	14697	$102,107,189

Exhibit 34

Public Employees Retirement Association
State of Minnesota

Coordinated Employees

CONSIDERED EARNINGS

Active Female Employees
(Age and Service as of July 1, 1971)

	YEARS OF SERVICE							
	Under 1		1 to 2		2 to 5		5 to 10	
Age	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	1084	$ 4,021,226	2004	$ 8,612,510	1296	$ 6,554,359	15	$ 84,378
25 to 30	523	2,067,601	1018	4,454,457	1168	6,787,358	70	502,052
30 to 35	412	1,298,321	1006	3,011,125	994	3,850,194	78	469,657
35 to 40	402	1,058,003	1151	3,251,800	1271	4,394,913	64	437,939
40 to 45	389	1,140,113	1022	2,958,511	1400	4,987,232	120	671,409
45 to 50	316	908,326	865	2,590,182	1367	4,995,292	171	926,516
50 to 55	240	668,506	618	1,765,166	1070	3,749,969	172	884,718
55 to 60	158	458,132	415	1,141,142	793	2,664,353	214	1,086,450
60 to 65	58	123,155	173	446,556	397	1,141,504	157	709,057
65 to 70	20	33,495	48	86,405	101	196,599	40	146,992
70 & Up	9	25,568	33	29,562	35	54,739	5	12,351
Total	3611	$11,802,446	8353	$28,347,416	9892	$39,376,512	1106	$ 5,931,519

	YEARS OF SERVICE							
	10 to 15		15 to 20		20 to 25		25 to 30	
Age	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 30	2	15,623	-	-	-	-	-	-
30 to 35	11	69,567	3	21,327	-	-	-	-
35 to 40	9	78,939	3	16,750	-	-	-	-
40 to 45	18	130,981	7	67,230	4	31,840	-	-
45 to 50	35	238,113	20	189,035	8	87,104	4	33,773
50 to 55	63	380,167	23	185,010	11	95,505	8	70,273
55 to 60	83	476,728	36	204,012	19	157,628	4	30,155
60 to 65	88	476,827	50	354,525	20	138,740	13	127,505
65 to 70	35	129,907	20	96,074	10	68,895	2	21,262
70 & Up	2	13,055	5	20,056	2	11,785	2	9,195
Total	346	$ 2,009,907	167	$ 1,154,019	74	$ 591,497	33	$ 292,163

	YEARS OF SERVICE							
	30 to 35		35 to 40		40 & Up		All	
Age	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	-	$ -	-	$ -	-	$ -	4399	$19,272,473
25 to 30	-	-	-	-	-	-	2781	13,827,091
30 to 35	-	-	-	-	-	-	2504	8,720,191
35 to 40	-	-	-	-	-	-	2900	9,238,344
40 to 45	-	-	-	-	-	-	2960	9,987,316
45 to 50	1	5,566	-	-	-	-	2787	9,973,907
50 to 55	1	12,815	-	-	-	-	2206	7,812,129
55 to 60	5	40,952	-	-	-	-	1727	6,259,552
60 to 65	1	14,992	10	133,526	1	9,154	968	3,675,541
65 to 70	4	29,432	1	8,759	-	-	281	817,820
70 & Up	-	-	-	-	-	-	93	176,311
Total	12	$ 103,757	11	$ 142,285	1	$ 9,154	23606	$89,760,675

Public Employees Retirement Association
State of Minnesota

Coordinated Employees

SUMMARY OF PLAN

1. Name

Public Employees Retirement Association.

2. Type of Plan

Self-insured, managed by a 12 member Board of Trustees consisting of the State Auditor, State Insurance Commissioner, State Treasurer, and nine others elected from the membership of the Association.

3. Employers Included

Any county, city, village, borough, town, school district within the State, or a department or unit of the State or any other public body employing any person who is a public employee as defined by the Law.

4. Employees Included

All full-time employees who elected coverage under Section 218(d) of the Social Security Act, except those on a per diem basis, of an eligible employer who is not contributing to another plan.

5. Service Considered

All periods of service in which salary deductions were made or for which payments in lieu of salary deduction were deposited, including seasonal layoff and authorized sick leaves.

6. Earnings Considered

(a) For service prior to July 1, 1957, average of highest consecutive 5 years prior to such date, not to exceed $4,800.

(b) For service during the period July 1, 1957 to July 1, 1965, all earnings not to exceed $4,800 in any calendar year.

(c) For service during the period July 1, 1965 to July 1, 1967, all earnings not to exceed $6,000 in any calendar year.

(d) After July 1, 1967, all earnings.

7. Employer Contributions

Amount equal to 3% of total considered earnings for current service plus $1\frac{1}{2}$% of total considered earnings to amortize past service cost.

8. Employee Contributions

After coverage under Social Security commences, 3% of considered earnings.

9. Normal Retirement Benefit

After attainment of age 65 and completion of 10 years of service.

Annuity equal to the sum of:

1) (a) 0.625% of considered earnings for each of the first ten years plus;
   (b) 1.25% of considered earnings for each of the second ten years plus;
   (c) 1.70% of considered earnings for each of the third ten years plus;
   (d) 2.40% of considered earnings for each year over 30.

10. Late Retirement Benefit

Annual Annuity determined as for Normal Retirement, considering Service and Earnings to actual retirement.

11. Early Retirement Benefit

After attainment of age 58 and completion of 20 years of service.

Annual Annuity determined as for Normal Retirement considering Service and Earnings to actual retirement and reduced by 1/2 of 1% for each month between actual retirement and attainment of age 65.

12. Disability Benefit

In event of total and permanent disability after completion of 10 years of service or attainment of age 50 and completion of five years of service.

Annual Annuity determined as for Normal Retirement, considering Service and Earnings to date of disablement.

13. Death Benefit

Active - In event of death an employee's contributions with interest at 2% shall be paid to his beneficiary.

Retired - Refund of contributions less benefit paid to date of death.

14. Separation Benefit

In event of termination after 10 years of service, a deferred vested benefit payable at age 65, provided participant does not withdraw contribution.

Annual Annuity determined as for Normal Retirement considering Service and Earnings to date of termination. In lieu of annuity, participant shall receive a refund of contributions without interest.

15. Optional Benefits

A participant may elect to receive an equivalent actuarially reduced annuity in the form of a joint and survivor annuity or a period certain and life thereafter annuity.

16. Expenses

Paid by Association from retirement fund.

17. Actuarial Method

For purpose of reports to the Legislative Commission, costs for the Plan shall be determined on an "entry-age level normal cost" basis amortizing the unfunded accrued liability over 40 years from 1957, 3-1/2% interest.

Police and Fire Fund

FINANCIAL STATISTICS

AND

ACTUARIAL ASSUMPTIONS

Public Employees Retirement Association
State of Minnesota

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

Police and Fire Fund

ASSETS

Cash - On Hand	$ -		
On Deposit	7,154.84		
In Transit	5,557.33	$ 12,712.17	
Minnesota Adjustable Fixed Benefit Fund		3,693,494.09	
Accounts Receivable			
M.S. 1969, Section 353.36, Subd. 8 and 9	$ 4,260.96		
M.S. 1969, Section 353.83	48.49		
Member Contributions	103,618.40		
Employer Contributions	241,117.88		
Interest	201,327.26		
Dividends	49,034.83		
From Regular Fund	4,949.40		
Others	-	604,357.22	$ 4,310,563.48
Less Current Liabilities			32,094.60
Net Current Assets			$ 4,278,468.88

INVESTMENTS

Bonds		
U.S. Government	$1,948,000.00	
Municipal	-	
Corporate	9,983,597.64	
Canadian Government Insured	654,258.35	
Stocks		
Common	9,122,296.29	
Preferred	1,410.68	
Prepaid Interest	130.83	21,709,693.79
Total Assets		$25,988,162.67

Members accumulated contributions $6,620,835.71

Exhibit 2

Public Employees Retirement Association
State of Minnesota

Police and Fire Fund

SOURCES AND USES OF FUNDS
(July 1, 1970 - June 30, 1971)

Sources		Uses	
Employee Contributions	$ 1,368,700.07	Refunds	
		Employee Contributions	$ 280,210.04
Employer Contributions	2,858,752.33	Employer Contributions	1,756.80
Various Accounts Receivable	11,370.26	Benefits Paid	
		Retirement	330,701.59
Investment Income	971,640.99	Survivor	121,499.83
		Disability	5,653.66
Transfers from Regular Fund	21,849.43		
		Direct Expense	137.63
Minnesota Adjustable Fixed Benefit Fund	146,301.89	Investment Purchases	
		Bonds	8,264,973.20
Investment Sales		Stocks	3,150,746.38
Bonds	6,893,391.97		
Stocks	574,083.12	Payments to Minnesota Adjustable Fixed Benefit Fund	
Cancelled Warrants	2,264.35		721,770.59
Miscellaneous Receipts	5,182.81	Transfers to Regular Fund	33,805.19
Decrease in Cash Account	59,632.18	Interest Paid on Refunds	1,914.49
	$12,913,169.40		$12,913,169.40
Cash Balance, June 30, 1971	12,712.17		
Total (Statement of Receipts and Disbursements)	$12,925,881.57		

Exhibit 3

Public Employees Retirement Association
State of Minnesota

Police and Fire Fund

RECONCILIATION OF ASSET BALANCES
(June 30, 1971)

Asset Balance - July 1, 1970			$21,357,000.66
Add:			
Employer Contributions		$ 2,639,841.16	
Employees Contributions		1,380,728.89	
Transfers from Regular Fund		4,825.95	
Investment Earnings		997,942.57	
Minnesota Adjustable Fixed Benefit Fund Income		280,454.08	
Gain on Sale of Stocks and Bonds		100,242.56	
Other Income		5,532.63	
Total Additions			5,409,567.84
			$26,766,568.50
Deduct:			
Benefits Paid			
Retirement	$ 328,830.03		
Survivor	120,813.73		
Disability	5,571.41	$ 455,215.17	
Refunds		280,210.04	
Transfers to Regular Fund		236.57	
Interest Paid on Refunds		1,914.49	
Administrative Expenses		28,764.44	
Total Deductions			766,340.71
			$26,000,227.79
Current Liabilities and Accounts Payable			32,094.60
Decrease in Reserve Accounts During 1970-71 Not Affecting Current Year Income and Expenditures			12,065.12
Asset Balance, June 30, 1971			$26,020,257.27

Police and Fire Fund

ACTUARIAL ASSUMPTIONS

The 1967 experience analysis required by law verified the appropriateness of the assumptions used in prior reports. The assumptions can be summarized as follows:

Interest:	3.5%
Mortality - Before Retirement:	1951 Group Annuity
After Retirement:	1965 Group Annuity
Retirement Age:	62
Disability:	See Following Table
Turnover:	See Following Table
Salary Scale:	See Following Table
1952-57 Wage Base:	Estimate based on 1952-57 contributions

Age 62 was used as the average age at retirement to allow for the lowering of the earliest retirement age from 58 to 55. Prior to this change age 64 was the retirement age assumption.

A detailed statement of the mortality rates, disability rates, turnover factors, and salary scale is set out in the following pages.

Public Employees' Retirement Association
State of Minnesota

Police and Fire Fund

All Employees

MORTALITY RATES

(Per 1,000 Employees)

Age	Rate	Age	Rate
20	.616	45	3.580
21	.640	46	4.056
22	.666	47	4.599
23	.693	48	5.180
24	.724	49	5.807
25	.758	50	6.475
26	.796	51	7.187
27	.838	52	7.938
28	.885	53	8.731
29	.935	54	9.563
30	.991	55	10.436
31	1.054	56	11.346
32	1.122	57	12.298
33	1.198	58	13.302
34	1,281	59	14.379
35	1.374	60	15.555
36	1.475	61	16.866
37	1.587	62	18.353
38	1.711		
39	1.849		
40	2.000		
41	2.192		
42	2.450		
43	2.769		
44	3.147		

Public Employees' Retirement Association
State of Minnesota

Police and Fire Fund

All Employees

DISABILITY RATES

(Per 1,000 Employees)

Age	Rate	Age	Rate
20	1.70	45	10.40
21	1.75	46	11.60
22	1.80	47	12.95
23	1.86	48	14.50
24	1.92	49	16.10
25	1.98	50	17.70
26	2.05	51	19.60
27	2.12	52	21.60
28	2.19	53	23.70
29	2.27	54	25.95
30	2.35	55	28.25
31	2.50	56	30.65
32	2.70	57	33.25
33	2.95	58	36.05
34	3.20	59	38.85
35	3.50	60	41.65
36	3.90	61	44.50
37	4.30		
38	4.75		
39	5.25		
40	5.90		
41	6.60		
42	7.40		
43	8.30		
44	9.25		

Public Employees' Retirement Association
State of Minnesota

Police and Fire Fund

All Employees

SEPARATION RATES

(Per 1,000 Employees)

Age	Separation	Age	Separation
20	70.0	40	24.5
21	70.0	41	21.3
22	70.0	42	18.5
23	69.9	43	16.0
24	69.8	44	13.7
25	69.7	45	11.8
26	69.4	46	10.2
27	68.9	47	8.7
28	68.0	48	7.3
29	67.0	49	6.1
30	65.8	50	5.0
31	64.3	51	3.9
32	62.4	52	2.9
33	59.8	53	2.2
34	56.1	54	1.5
35	51.1	55	1.1
36	45.4	56	.7
37	39.5	57	.5
38	33.6	58	.3
39	28.7	59	.1

Public Employees Retirement Association
State of Minnesota

Police and Fire Fund

All Employees

EARNINGS PROGRESSION

Age	Rate	Age	Rate
20	.4353	45	.7142
21	.4440	46	.7284
22	.4529	47	.7430
23	.4619	48	.7579
24	.4712	49	.7730
25	.4806	50	.7885
26	.4902	51	.8043
27	.5000	52	.8203
28	.5100	53	.8368
29	.5202	54	.8535
30	.5306	55	.8706
31	.5412	56	.8880
32	.5521	57	.9057
33	.5631	58	.9238
34	.5744	59	.9423
35	.5859	60	.9612
36	.5976	61	.9804
37	.6095	62	1.0000
38	.6217		
39	.6342		
40	.6468		
41	.6598		
42	.6730		
43	.6864		
44	.7002		

Police and Fire Fund

ACTUARIAL REQUIREMENTS - $3\frac{1}{2}\%$

Public Employees Retirement Association
State of Minnesota

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

Police and Fire Fund

LIABILITIES

Accounts Payable	$ 32,094.60		
Retirement	-		
Survivor	-		
Refunds	-		
Expenses	-		
Suspense Items	-	$ 32,094.60	
Less Offset Against Current Assets		32,094.60	$ 0

RESERVES

Entry Age Normal Reserves			
Retirement	$48,016,620.00		
Disability	16,370,735.00		
Survivors	6,004.725.00		
Refund	2,966,281.00		
	$73,358,361.00		
Less Value of Benefits to be Earned in the Future	50,853,307.00	$22,505,054.00	
Vested Members		394,923.00	
Retired Members			
Retirements - Payable from Minnesota Adjustable Fixed Benefit Fund	$ 3,693,494.09		
Disability	61,778.00		
Survivors	1,362,881.00		
Reserve for Future Old Law Survivors	515,331.00	5,633,484.09	28,533,461.09
Unfunded Obligation			$ 2,545,298.42
Funded Obligation			25,988,162.67

Exhibit 5
3½%
Retirement
Age 62

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Police and Fire Fund

AMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		$79,386,768
Obligation for Service Rendered to Date	$ 28,533,461	
Net Assets	25,988,163	
Accrued Unfunded Obligation	2,545,298	
Funding Ratio		91%
Amortization (26-Year) Requirement	150,695	
Covered Payroll	24,263,426	
Amortization (26-Year) Rate Requirement		0.62%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	$ 50,853,307	
Present Value of Future Payroll	283,745,100	
Normal Cost Rate Requirement	17.92%	
Employee Contribution Rate	7.00	
Employer Normal Cost Rate Requirement		10.92%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		12.00%
Amortization (26-Year) Rate Requirement	0.62%	
Normal Cost Rate Requirement	10.92	
Allowance for Expenses	0.12	
Total Requirement		11.66%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		0.34%

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Police and Fire Fund

AMORTIZATION RATE REQUIREMENT

	Period			
	10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	$ 11,106,823	$ 11,106,823	$ 11,106,823	$ 11,106,823
Amortization Requirement	1,335,500	781,488	603,893	520,102
Covered Payroll	24,263,426	24,263,426	24,263,426	24,263,426
Amortization Rate Requirement	5.50%	3.22%	2.49%	2.14%

ACTUARIAL BALANCE

	10-Year	20-Year	30-Year	40-Year
Employer Contribution Rate Set by Law	12.00%	12.00%	12.00%	12.00%
Amortization Rate Requirement	5.50%	3.22%	2.49%	2.14%
Normal Cost Rate Requirement	7.90	7.90	7.90	7.90
Allowance for Expenses	0.12	0.12	0.12	0.12
Total Requirement	13.52%	11.24%	10.51%	10.16%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	(1.52%)	0.76%	1.49%	1.84%

Exhibit 6
$3\frac{1}{2}\%$
Retirement
Age 62

Public Employees Retirement Association
State of Minnesota

Police and Fire Fund

STATEMENT OF REVENUE, EXPENDITURES, CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
(Year Ending June 30, 1971)

Revenue:		
Employer Contributions	$2,639,826.62	
Employee Contributions	1,380,506.86	
Investment Income	1,098,185.13	
Miscellaneous Income	5,532.63	
Transfer from General Fund	4,825.95	
Minnesota Adjustable Fixed Benefit Fund Income	280,454.08	
Total Revenue		$5,409,331.27
Expenditure:		
Benefits	$ 455,215.17	
Refund of Contributions	282,124.53	
Expense - General	28,764.44	
Decrease in Reserve Account	12,065.12	
Total Expenditure		778,169.26
Increase in Net Assets (1971)		$4,631,162.01

Public Employees Retirement Association
State of Minnesota

Police and Fire Fund

RECONCILIATION OF CHANGE IN ACTUARIAL RESERVES

Allocation of Change in Actuarial Reserves

	Increase	Decrease	
Increase in Assets			$ 4,631,162
Amortization Payment		$ 29,244	
Excess Interest (1.33% x Average Invested Assets)		524,897	
Estimated Excess in Rate		1,034,638	
Amortization Payment Applied to Larger Payroll		13,446	
Amendment and Revised Actuarial Assumptions	$2,929,703		
Totals	$2,929,703	$1,602,225	(1,327,478)
Expected Decrease (Increase) in Unfunded			5,958,640
Experience Variation Gain (Loss)			61,893
Net Change in Reserves			$ 5,896,747
1971 Actuarial Reserve			$28,533,461
1970 Actuarial Reserve			22,636,714
Increase (Decrease)			$ 5,896,747

Police and Fire Fund

ACTUARIAL REQUIREMENTS - 3%

Public Employees Retirement Association
State of Minnesota

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

Police and Fire Fund

LIABILITIES

Accounts Payable	$ 32,094.60		
Retirement	-		
Survivor	-		
Refunds	-		
Expenses	-		
Suspense Items	-	$ 32,094.60	
Less Offset Against Current Assets		32,094.60	$ 0

RESERVES

Entry Age Normal Reserves			
Retirement	$53,951,258.00		
Disability	18,394,084.00		
Survivors	6,746,882.00		
Refund	3,332,900.00		
	$82,425,124.00		
Less Value of Benefits to be Earned in the Future	60,177,607.00	$22,247,517.00	
Vested Members		436,776.00	
Retired Members			
Retirements - Payable from Minnesota Adjustable Fixed Benefit Fund	$ 3,693,494.09		
Disability	63,689.00		
Survivors	1,405,032.00		
Reserve for Future Old Law Survivors	531,269.00	5,693,484.09	28,377,777.09
Unfunded Obligation			$ 2,389,614.42
Funded Obligation			25,988,162.67

Exhibit 9
3%
Retirement
Age 62

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Police and Fire Fund

AMORTIZATION RATE REQUIREMENT

Present Value of Benefit (For Both Past and Future Service)		$88,555,384
Obligation for Service Rendered to Date	$ 28,377,777	
Net Assets	25,988,163	
Accrued Unfunded Obligation	2,389,614	
Funding Ratio		92%
Amortization (26-Year) Requirement	133,671	
Covered Payroll	24,263,426	
Amortization (26-Year) Rate Requirement		0.55%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	$ 60,177,607	
Present Value of Future Payroll	295,567,800	
Normal Cost Rate Requirement	20.36%	
Employee Contribution Rate	7.00	
Employer Normal Cost Rate Requirement		13.36%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		12.00%
Amortization (26-Year) Rate Requirement	0.55%	
Normal Cost Rate Requirement	13.36	
Allowance for Expenses	0.12	
Total Requirement		14.03%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		(2.03%)

Public Employees Retirement Association
State of Minnesota

ACTUARIAL REQUIREMENTS
(July 1, 1971)

Police and Fire Fund

AMORTIZATION RATE REQUIREMENT

	Period			
	10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	$ 2,389,614	$ 2,389,614	$ 2,389,614	$ 2,389,614
Amortization Requirement	280,136	160,620	121,916	103,380
Covered Payroll	24,263,426	24,263,426	24,263,426	24,263,426
Amortization Rate Requirement	1.15%	0.66%	0.50%	0.43%

ACTUARIAL BALANCE

	10-Year	20-Year	30-Year	40-Year
Employer Contribution Rate Set by Law	12.00%	12.00%	12.00%	12.00%
Amortization Rate Requirement	1.15%	0.66%	0.50%	0.43%
Normal Cost Rate Requirement	13.36	13.36	13.36	13.36
Allowance for Expenses	0.12	0.12	0.12	0.12
Total Requirement	14.63%	14.14%	13.98%	13.91%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	(2.63%)	(2.14%)	(1.98%)	(1.91%)

Police and Fire Fund

EMPLOYEE STATISTICS

AND

SUMMARY OF PLAN

Public Employees Retirement Association
State of Minnesota

RECONCILIATION OF ACTIVE MEMBERS

Police and Fire Fund

As of July 1, 1970		2,619
New Entrants		414
Reinstated		95
Total		3,128
Separations:		
(a) With Refund of Contributions		
(i) Death	6	
ii) Withdrawal	232	238
(b) With Deferred Annuity		5
(c) With Disability Annuity		3
(d) With Normal Retirement Annuity		33
(e) With Survivor Annuity		12
Total		291
Active as of July 1, 1971		2,837

Public Employees Retirement Association
State of Minnesota

RECONCILIATION OF ANNUITANTS

Police and Fire Fund

Normal Retirement Annuitants	
As of July 1, 1970	164
Additions During Year	33
Deletions During Year	-12
Totals as of July 1, 1971	185
Annual Annuity - July 1, 1970	$291,522
- July 1, 1971	351,174
Disability Annuitants	
As of July 1, 1970	5
Additions During Year	5
Deletions During Year	-6
Total as of July 1, 1971	4
Annual Annuity - July 1, 1970	$ 8,532
- July 1, 1971	6,288
Survivor Annuitants	
(a) Spouse Only	
As of July 1, 1970	82
Additions During Year	12
Deletions During Year	-3
Total as of July 1, 1971	91
Annual Annuity - July 1, 1970	$ 65,127
- July 1, 1971	74,234
(b) Children	
As of July 1, 1970	80
Additions During Year	16
Deletions During Year	-8
Total as of July 1, 1971	88
Annual Annuity - July 1, 1970	$ 49,319
- July 1, 1971	55,079
Deferred Annuitants	
As of July 1, 1970	27
Additions During Year	3
Deletions During Year	-
Total as of July 1, 1971	30

Public Employees Retirement Association
State of Minnesota

Police and Fire Fund

Retired Under the Law in Force Prior to July 1, 1957
Payable From Adjustable Fixed Benefit Fund

Age	Male Number	Male Monthly Annuity	Female Number	Female Monthly Annuity
63	2	$ 647.03	-	$ -
64	2	573.72	-	-
65	1	206.48	-	-
66	10	2,469.46	-	-
67	6	1,137.36	1	123.37
68	7	1,084.10	-	-
69	12	2,329.50	-	-
70	10	2,391.52	1	162.07
71	10	2,079.94	-	-
72	10	2,150.95	1	44.10
73	4	811.43	1	168.38
74	6	1,059.06	-	-
75	7	1,319.02	-	-
76	3	699.42	1	199.89
77	4	610.66	-	-
78	3	545.84	-	-
80	1	108.13	-	-
82	1	155.39	-	-
83	1	34.32	1	276.10
93	1	111.96	-	-
Totals	101	$20,525.29	6	$ 973.91

Public Employees Retirement Association
State of Minnesota

Police and Fire Fund

Retired Under Law in Force July 1, 1957 and Subsequent

Payable From Adjustable Fixed Benefit Fund

	Male		Female	
Age	Number	Monthly Annuity	Number	Monthly Annuity
59	5	$ 830.79	-	$ -
60	1	167.27	-	-
61	3	554.20	-	-
62	7	1,243.89	-	-
63	5	656.33	-	-
64	4	303.10	-	-
65	2	208.81	-	-
66	4	364.37	1	66.89
67	7	438.36	1	24.99
68	3	250.90	-	-
69	6	588.60	-	-
70	6	473.86	-	-
71	4	202.84	-	-
72	2	57.32	-	-
73	2	240.28	-	-
74	4	298.28	-	-
75	3	268.67	-	-
76	2	129.47	-	-
77	3	194.35	-	-
78	1	52.14	-	-
85	1	41.72	-	-
Totals	75	$7,565.55	2	$ 91.88

Retired Under Combination of Law in Force Prior and Subsequent to July 1, 1957

Age	Males Number	Monthly Annuity
71	1	$107.84

Survivor Annuities

Age	Females Number	Monthly Annuity
62	1	$177.32
75	1	26.28
Totals	2	$203.60

Public Employees Retirement Association
State of Minnesota

Police and Fire Fund

Survivor Annuities

Widows			Widows		
Age	Number	Total Monthly Annuity	Age	Number	Total Monthly Annuity
31	1	$ 65.00	58	4	$ 260.00
33	3	195.00	59	1	65.00
34	1	65.00	60	1	65.00
35	1	65.00	61	3	195.00
36	1	65.00	62	4	260.00
38	2	130.00	63	5	384.50
39	1	65.00	64	2	130.00
40	1	65.00	65	2	130.00
41	1	65.00	66	3	259.79
42	1	65.00	67	1	65.00
44	1	65.00	68	1	44.74
45	1	65.00	69	1	100.00
47	3	195.00	71	2	130.00
48	2	130.00	72	5	351.91
51	2	130.00	73	1	90.32
52	1	65.00	74	1	100.00
53	7	455.00	75	2	170.19
54	2	130.00	76	1	65.00
55	5	325.00	80	2	99.14
57	7	455.00	81	1	65.00
			83	2	91.98
			Totals	89	$5,982.57

Children

Number	Total Monthly Annuity
88	$4,589.90

Disability Retirement Annuities

Age	Number	Monthly Annuity
44	1	$162.30
56	1	179.53
59	2	182.15
Totals	4	$523.98

Exhibit 15

Public Employees Retirement Association
State of Minnesota

Police and Fire Employees

CONSIDERED EARNINGS

Active Male Employees
(Age and Service as of July 1, 1971)

	YEARS OF SERVICE							
	Under 1		1 to 2		2 to 5		5 to 10	
Age	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	61	$ 409,493	78	$ 531,448	67	$ 534,202	-	$ -
25 to 30	89	616,258	96	674,683	271	2,354,535	62	593,683
30 to 35	45	336,404	55	360,576	216	1,861,740	155	1,594,303
35 to 40	19	123,601	36	210,720	121	1,075,608	103	993,420
40 to 45	23	143,907	16	92,523	59	480,316	73	668,542
45 to 50	10	67,950	11	60,291	44	354,151	74	624,833
50 to 55	14	86,132	10	51,107	39	280,931	59	490,333
55 to 60	2	12,978	8	34,091	28	183,922	48	339,667
60 to 65	3	36,311	5	23,676	17	128,326	25	179,860
65 to 70	3	19,168	1	1,502	7	35,203	10	64,233
70 & Up	1	6,075	-	-	2	3,350	4	14,570
Total	270	$ 1,858,277	316	$ 2,040,617	871	$ 7,292,284	613	$ 5,563,444

	YEARS OF SERVICE							
	10 to 15		15 to 20		20 to 25		25 to 30	
Age	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 30	-	-	-	-	-	-	-	-
30 to 35	27	268,165	1	9,558	-	-	-	-
35 to 40	58	595,994	21	217,979	3	34,589	-	-
40 to 45	63	678,661	44	500,530	12	140,719	8	88,674
45 to 50	59	636,031	41	407,933	29	293,953	12	112,185
50 to 55	34	300,321	32	319,202	23	261,830	7	67,060
55 to 60	19	154,433	28	248,882	33	343,117	9	93,178
60 to 65	23	181,507	10	83,654	21	204,357	8	66,471
65 to 70	9	48,570	7	55,533	10	157,676	3	27,217
70 & Up	-	-	-	-	1	5,475	-	-
Total	292	$ 2,863,682	184	$ 1,843,271	132	$ 1,441,716	47	$ 454,785

	YEARS OF SERVICE							
	30 to 35		35 to 40		40 & Up		All	
Age	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	-	$ -	-	$ -	-	$ -	206	$ 1,475,143
25 to 30	-	-	-	-	-	-	518	4,239,159
30 to 35	-	-	-	-	-	-	499	4,430,746
35 to 40	-	-	-	-	-	-	361	3,251,911
40 to 45	-	-	-	-	-	-	298	2,793,872
45 to 50	2	26,013	-	-	-	-	282	2,583,340
50 to 55	6	67,367	2	26,206	-	-	226	1,950,489
55 to 60	8	78,106	9	102,409	2	23,093	194	1,613,876
60 to 65	4	49,063	2	20,524	1	11,970	119	985,719
65 to 70	-	-	3	33,310	-	-	53	442,412
70 & Up	-	-	-	-	-	-	8	29,470
Total	20	$ 220,549	16	$ 182,449	3	$ 35,063	2764	$23,796,137

Exhibit 16

Public Employees Retirement Association
State of Minnesota

Police and Fire Employees

CONSIDERED EARNINGS

Active Female Employees
(Age and Service as of July 1, 1971)

YEARS OF SERVICE

Age	Under 1 No.	Under 1 Earnings	1 to 2 No.	1 to 2 Earnings	2 to 5 No.	2 to 5 Earnings	5 to 10 No.	5 to 10 Earnings
Under 25	2	$ 9,580	1	$ 6,146	-	$ -	-	$ -
25 to 30	2	3,840	3	20,572	5	31,067	1	6,239
30 to 35	5	30,833	-	-	1	6,586	1	9,878
35 to 40	1	1,776	2	12,447	3	18,566	-	-
40 to 45	-	-	1	6,386	8	51,008	2	11,902
45 to 50	1	2,921	2	10,200	5	35,522	2	15,820
50 to 55	-	-	1	6,113	4	21,739	4	34,096
55 to 60	-	-	-	-	3	20,767	4	36,782
60 to 65	-	-	-	-	1	3,725	3	20,186
65 to 70	-	-	-	-	-	-	-	-
70 & Up	-	-	-	-	-	-	-	-
Total	11	$ 48,950	10	$ 61,864	30	$188,980	17	$134,903

YEARS OF SERVICE

Age	10 to 15 No.	10 to 15 Earnings	15 to 20 No.	15 to 20 Earnings	20 to 25 No.	20 to 25 Earnings	25 to 30 No.	25 to 30 Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 30	-	-	-	-	-	-	-	-
30 to 35	-	-	-	-	-	-	-	-
35 to 40	-	-	-	-	-	-	-	-
40 to 45	-	-	-	-	-	-	-	-
45 to 50	2	13,823	-	-	-	-	-	-
50 to 55	-	-	-	-	-	-	-	-
55 to 60	-	-	-	-	1	5,115	-	-
60 to 65	-	-	-	-	-	-	-	-
65 to 70	1	9,114	1	4,540	-	-	-	-
70 & Up	-	-	-	-	-	-	-	-
Total	3	$ 22,937	1	$ 4,540	1	$ 5,115	-	-

YEARS OF SERVICE

Age	30 to 35 No.	30 to 35 Earnings	35 to 40 No.	35 to 40 Earnings	40 & Up No.	40 & Up Earnings	All No.	All Earnings
Under 25	-	$ -	-	$ -	-	$ -	3	$ 15,726
25 to 30	-	-	-	-	-	-	11	61,718
30 to 35	-	-	-	-	-	-	7	47,297
35 to 40	-	-	-	-	-	-	6	32,789
40 to 45	-	-	-	-	-	-	11	69,296
45 to 50	-	-	-	-	-	-	12	78,286
50 to 55	-	-	-	-	-	-	9	61,948
55 to 60	-	-	-	-	-	-	8	62,664
60 to 65	-	-	-	-	-	-	4	23,911
65 to 70	-	-	-	-	-	-	2	13,654
70 & Up	-	-	-	-	-	-	-	-
Total	-	$ -	-	$ -	-	$ -	73	$467,289

SUMMARY OF PLAN

1. Name

Public Employees Police and Fire Fund.

2. Type of Plan

Self-insured, managed by a 12 member Board of Trustees consisting of the State Auditor, State Insurance Commissioner, State Treasurer, and nine others elected from the membership of the Association.

3. Employers Included

Any county, city, village, borough, town, school district within the State, or a department or unit of the State or any other public body employing any person who is a public employee as defined by the law.

4. Employees Included

All full-time police officers and fire fighters, except those on a per diem basis, of an eligible employer who is not contributing to another plan.

5. Service Considered

All periods of service in which salary deductions were made or for which payments in lieu of salary deduction were deposited, including seasonal layoff and authorized sick leaves.

6. Earnings Considered

(a) For service prior to July 1, 1957, average of highest consecutive 5 years prior to such date, not to exceed $4,800.

(b) For service during the period July 1, 1957 to July 1, 1965, all earnings, not to exceed $4,800 in any calendar year.

(c) For service during the period July 1, 1965 to July 1, 1967, all earnings, not to exceed $6,000 in any calendar year.

(d) After July 1, 1967, all earnings.

7. Employer Contributions

Police and Fire - after July 1, 1971 an amount equal to $10\frac{1}{2}$% of total considered earnings for current service plus $1\frac{1}{2}$% of total considered earnings to amortize past service costs.

8. Employee Contributions

(a) For service prior to July 1, 1957, 4% of considered earnings.

(b) July 1, 1957 to July 1, 1971, 6% of considered earnings.

(c) After July 1, 1971, 7% of considered earnings.

9. Normal Retirement Benefit

After Attainment of age 55 and completion of 10 years of service.

Police and Fire - Annuity equal to the sum of:

(a) $2\frac{1}{2}$% of considered earnings for each of the first twenty years; plus

(b) 2% of considered earnings for each year of service in excess of twenty years, plus

(c) Any annuity additional from the "Old Law" as determined for each employee as of June 30, 1971.

10. Late Retirement Benefit

Annual annuity determined as for Normal Retirement, considering Service and Earnings to actual retirement.

11. Disability Benefit

In event of total and permanent disability after completion of 5 years of service.

Annual Annuity determined as for Normal Retirement, considering Service and Earnings to date of disablement except if service is under 10 years, the benefit shall be the same as though the employee had 10 years service.

In event of duty disablement of Police or Firemen, a minimum of 50% of average salary, regardless of age or service plus 2% for each year of service in excess of 20 years.

12. Death Benefit

Active - In event of death.

Annual Annuity to dependent spouse of 20% of average salary plus for each dependent child under 18, 8% of average salary, plus $20 per month to be divided among dependent children. Maximum benefit for dependent children shall not exceed $200 per month.

Any employee not eligible for above benefits, his contributions with interest at 2% shall be paid to his beneficiary.

Retired

(a) Under law in force July 1, 1957 and prior, 50% of his annuity continued to his beneficiary provided his beneficiary is his surviving spouse and has attained age 60, and has not remarried; or is the parent of the retired member.

(b) Under law in effect July 1, 1957 and subsequent, refund of contributions less benefit paid to date of death.

13. Separation Benefit

In event of termination after 10 years of service and after July 1, 1971, a deferred vested benefit payable at age 55, provided participant does not withdraw contribution.

Annual Annuity determined as for Normal Retirement considering Service and Earnings to date of termination. In lieu of annuity, participant shall receive a refund of contributions without interest.

14. Optional Benefits

A participant may elect to receive an equivalent actuarially reduced annuity in the form of a joint and survivor annuity or a period certain and life thereafter annuity.

15. Expenses

Paid by Association from retirement fund.

16. Actuarial Method

For purpose of reports to the Legislative Commission, costs for the Plan shall be determined on an "entry-age level normal cost" basis amortizing the unfunded accrued liability over 40 years from 1957, $3\frac{1}{2}$% interest.

Public Employees Retirement Association
State of Minnesota

ACTUARIAL SURVEY
1971

A. S. HANSEN, INC.

Atlanta . Boston . Chicago . Dallas . Denver . Fort Worth . Houston . Lake Bluff
Los Angeles . Memphis . Milwaukee . New York . Tulsa

A. S. Hansen, inc.
ACTUARIES AND CONSULTANTS
1080 Green Bay Road
Lake Bluff, Illinois 60044
Telephone 312-234-3400

November 26, 1971

Mr. O. M. Ousdigian, Secretary
State of Minnesota
Public Employees Retirement Association
Capitol Square Building
550 Cedar Street
St. Paul, Minnesota 55101

Dear Mike:

1971 Actuarial Survey

We are pleased to enclose 30 copies of the Actuarial Survey for the Public Employees Retirement Association.

The form of this survey is in accordance with the provisions of Subdivision 5 of the 1965 Minnesota Statutes, Section 356.21. For ease in analyzing the survey, we have numbered the paragraphs in the same manner as called for by the subdivision.

You will observe that we are using an assumption of retirement age at 65 for the General Fund; under Section 10 the average retirement age has been equal to or in excess of age 66. The trend in recent years has been for employees to retire at an earlier age and the average age at retirement of all retirees decreased from 67.4 in 1967 to 66.7 as of July 1, 1971. It is our belief that as more and more of your members come under the coordinated program and become eligible for a full social security benefit at age 65, your retirement pattern may well change and average age at retirement will continue the decline towards age 65.

The retirement age for the Police and Fire Fund was changed from age 64 to age 62 in anticipation of earlier retirements under the amended plan.

Should there be any question concerning the figures presented in this report or these comments, we would be pleased to discuss them with you at your convenience.

Sincerely yours,

A. S. HANSEN, INC.

Davis H Roenisch

Davis H. Roenisch

DHR:lh
1366-01-83
Enc.

Public Employees Retirement Association
State of Minnesota

Information for the Year Ending June 30, 1972

GENERAL FUND*

5(1)	Normal Cost of Program	8.31%	$ 31,253,367
	Obligation for Service Rendered to Date		$364,864,405
5(2)	Not Applicable		
5(3)	Interest Assumption	3-1/2%	
5(4)	Retirement Age	65	
	Mortality after Retirement	1965 Projection of 1951 Group Annuity Table	
	Mortality before Retirement	See attached schedules	
	Disability	See attached schedule	
	Turnover	See attached schedules	
	Salary Scale	See attached schedule	

*Breakdown between regular and coordinated employees contained in valuation report.

Public Employees' Retirement Association
State of Minnesota

General Fund

Male Employees

MORTALITY RATES
(Per 1,000 Employees)

Age	Rate	Age	Rate
20	.616	45	3.580
21	.640	46	4.065
22	.666	47	4.599
23	.693	48	5.180
24	.724	49	5.807
25	.758	50	6.475
26	.796	51	7.187
27	.838	52	7.938
28	.885	53	8.731
29	.935	54	9.563
30	.991	55	10.436
31	1.054	56	11.346
32	1.122	57	12.298
33	1.198	58	13.302
34	1.281	59	14.379
35	1.374	60	15.555
36	1.475	61	16.866
37	1.587	62	18.353
38	1.711	63	20.068
39	1.849	64	22.067
40	2.000	65	24.418
41	2.192		
42	2.450		
43	2.769		
44	3.147		

Public Employees' Retirement Association
State of Minnesota

General Fund

Female Employees

MORTALITY RATES
(Per 1,000 Employees)

Age	Rate	Age	Rate
20	.371	45	1.994
21	.393	46	2.169
22	.416	47	2.361
23	.440	48	2.573
24	.467	49	2.809
25	.495	50	3.070
26	.524	51	3.319
27	.556	52	3.597
28	.591	53	3.908
29	.628	54	4.257
30	.669	55	4.648
31	.712	56	5.102
32	.760	57	5.637
33	.812	58	6.265
34	.868	59	6.997
35	.930	60	7.837
36	.997	61	8.788
37	1.071	62	9.848
38	1.152	63	11.010
39	1.240	64	12.264
40	1.338	65	13.597
41	1.446		
42	1.563		
43	1.694		
44	1.836		

Public Employees Retirement Association
State of Minnesota

General Fund

All Employees

DISABILITY RATES
(Per 1,000 Employees)

Age	Rate	Age	Rate
20	.69	45	3.17
21	.73	46	3.41
22	.77	47	3.67
23	.81	48	3.94
24	.86	49	4.25
25	.91	50	4.61
26	.96	51	5.01
27	1.02	52	5.48
28	1.08	53	6.00
29	1.15	54	6.53
30	1.22	55	7.12
31	1.29	56	7.76
32	1.37	57	8.45
33	1.45	58	9.17
34	1.54	59	9.91
35	1.63	60	10.69
36	1.73	61	11.53
37	1.84	62	12.38
38	1.96	63	13.25
39	2.09	64	14.15
40	2.23		
41	2.38		
42	2.55		
43	2.74		
44	2.94		

Public Employees Retirement Association
State of Minnesota

General Fund

Male Employees

SEPARATION RATES
(Per 1,000 Employees)

Age	Separation	Age	Separation
20	275.0	40	81.8
21	263.8	41	76.2
22	250.5	42	71.5
23	239.0	43	67.0
24	226.5	44	62.2
25	216.0	45	58.0
26	204.5	46	53.9
27	192.5	47	49.7
28	182.0	48	45.0
29	171.5	49	42.0
30	161.0	50	38.5
31	152.8	51	34.5
32	143.5	52	31.0
33	133.0	53	27.0
34	124.5	54	23.0
35	117.0	55	19.5
36	109.2	56	15.0
37	101.0	57	10.0
38	94.0	58	5.0
39	88.0		

Public Employees' Retirement Association
State of Minnesota

General Fund

Female Employees

SEPARATION RATES
(Per 1,000 Employees)

Age	Separation	Age	Separation
20	383.2	40	134.0
21	377.7	41	123.0
22	371.2	42	113.0
23	363.1	43	104.5
24	351.6	44	97.2
25	335.6	45	90.0
26	322.6	46	83.0
27	310.3	47	78.7
28	299.7	48	74.5
29	289.1	49	70.4
30	280.5	50	66.3
31	269.4	51	62.8
32	259.0	52	59.5
33	246.3	53	55.5
34	232.5	54	52.2
35	216.0	55	47.8
36	199.0	56	41.0
37	183.0	57	36.2
38	165.0	58	21.0
39	148.5	59	5.0

Public Employees Retirement Association
State of Minnesota

General Fund

All Employees

EARNINGS PROGRESSION

Age	Rate	Age	Rate
20	.4102	45	.6730
21	.4184	46	.6864
22	.4268	47	.7002
23	.4353	48	.7142
24	.4440	49	.7284
25	.4529	50	.7430
26	.4619	51	.7579
27	.4712	52	.7730
28	.4806	53	.7885
29	.4902	54	.8043
30	.5000	55	.8203
31	.5100	56	.8368
32	.5202	57	.8535
33	.5306	58	.8706
34	.5412	59	.8880
35	.5521	60	.9057
36	.5631	61	.9238
37	.5744	62	.9423
38	.5859	63	.9612
39	.5976	64	.9804
40	.6095	65	1.0000
41	.6217		
42	.6342		
43	.6468		
44	.6598		

Public Employees Retirement Association
State of Minnesota

General Fund*

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

ASSETS

Cash - On Hand	$ 50.00		
On Deposit and In Transit	98,311.86	$ 98,361.86	
Minnesota Adjustable Fixed Benefit Fund		79,486,441.78	
Accounts Receivable:			
M.S. 1969, Sec. 353.36	108,130.78		
M.S. 1969 and 1971, Sec. 353.36	35,549.75		
M.S. 1969, Sec. 353.83	12,160.33		
Social Security (From Members and Units)	8,641.33		
Member Contributions	1,047,241.08		
Employer Contributions	2,605,260.89		
Interest	1,558,802.93		
Dividends	426,960.54		
From Police and Fire Fund	32,022.83		
From Social Security (Overpayments)	764.37		
From MSRS and TRA	16,406.22		
Other	14,141.75	5,866,082.80	$ 85,450,886.44
Current Liabilities:			
Accounts Payable	$ 40,188.96		
Penalties Refundable	5,722.79		
Donations Suspense	251,696.81		
Social Security Refunds - Suspense	159.90		
Social Security Employee Shortage - Suspense	185.03		
Members Contribution - Suspense	7,480.91		
Omitted Deductions - Suspense	6,541.46		311,975.86
Net Current Assets			$ 85,138,910.58

INVESTMENTS

Bonds			
U.S. Government	$11,945,000.00		
Municipal	14,408,000.00		
Corporate	71,916,742.92		
Canadian Government Insured	4,591,569.75		
Stocks			
Common	73,375,800.69		
Preferred	10,123.07	$176,247,236.43	
Miscellaneous			
Office Equipment (Less Depreciation)	$ 30,164.45		
Other	6,519.54	36,683.99	$176,283,920.42
Total Assets			$261,422,831.00

Members Accumulated Contributions - $90,247,759.74

*Breakdown between regular and coordinated employees contained in valuation report.

Public Employees Retirement Association
State of Minnesota

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

(General Fund)*

RESERVES

Entry Age Normal Reserves at 3-1/2% - Active Members			
Retirement	$406,652,148.00		
Disability	24,162,087.00		
Survivors	21,047,864.00		
Refund	33,367,805.00		
	$485,229,904.00		
Less Value of Benefits to be Earned in the Future	242,130,921.00	$243,098,983.00	
Vested Members		2,405,992.00	
Members without Vested Rights		1,053,566.00	
Retired Members			
Retirements - Payable from Minnesota adjustable Fixed Benefit Fund	$ 79,486,441.78		
Disability	2,195,716.00		
Widows	23,579,020.00		
Children	1,433,964.00		
Reserve for Future Old Law Survivors	11,610,722.00	118,305,863.78	$364,864,404.78
Unfunded Obligation			$103,441,573.78
Funded Obligation			261,422,831.00

*Breakdown between regular and coordinated employees contained in valuation report.

1366-01-81

Public Employees Retirement Association
State of Minnesota

Information for the Year Ending June 30, 1972

GENERAL FUND*
(Continued)

5(6)	Normal Cost Requirement	8.31%	$ 31,253,367
	Amortization Requirement	1.63	6,124,300
	Total	9.94%	$ 37,377,667

5(7) No changes will be in force during the following fiscal year.

5(9)	Average Entry Age	
	All Actives	37.5
	New Entrants	
	July 1, 1967	34.6
	July 1, 1968	37.1
	July 1, 1969	35.9
	July 1, 1970	35.4
	July 1, 1971	35.4

5(10)	Average Retirement Age	
	All Retirees	66.7
	1967	67.4
	1968	67.1
	1969	66.6
	1970	66.0
	1971	66.9

5(11)	Administrative Expense	0.20%	$ 752,513
	Normal Cost	8.31%	$ 31,253,367

*Breakdown between regular and coordinated employees contained in valuation report.

Public Employees Retirement Association
State of Minnesota

Information for the Year Ending June 30, 1972

POLICE AND FIRE FUND

5(1)	Normal Cost of Program	17.92%	$ 4,348,006
	Obligation for Service Rendered to Date		$28,533,461
5(2)	Not Applicable		
5(3)	Interest Assumption	3-1/2%	
5(4)	Retirement Age	62	
	Mortality after Retirement	1965 Projection of 1951 Group Annuity Table	
	Mortality before Retirement	See attached schedule	
	Disability	See attached schedule	
	Turnover	See attached schedule	
	Salary Scale	See attached schedule	

Public Employees' Retirement Association
State of Minnesota

Police and Fire Fund

All Employees

MORTALITY RATES

(Per 1,000 Employees)

Age	Rate	Age	Rate
20	.616	45	3.580
21	.640	46	4.056
22	.666	47	4.599
23	.693	48	5.180
24	.724	49	5.807
25	.758	50	6.475
26	.796	51	7.187
27	.838	52	7.938
28	.885	53	8.731
29	.935	54	9.563
30	.991	55	10.436
31	1.054	56	11.346
32	1.122	57	12.298
33	1.198	58	13.302
34	1,281	59	14.379
35	1.374	60	15.555
36	1.475	61	16.866
37	1.587	62	18.353
38	1.711		
39	1.849		
40	2.000		
41	2.192		
42	2.450		
43	2.769		
44	3.147		

Public Employees' Retirement Association
State of Minnesota

Police and Fire Fund

All Employees

DISABILITY RATES

(Per 1,000 Employees)

Age	Rate	Age	Rate
20	1.70	45	10.40
21	1.75	46	11.60
22	1.80	47	12.95
23	1.86	48	14.50
24	1.92	49	16.10
25	1.98	50	17.70
26	2.05	51	19.60
27	2.12	52	21.60
28	2.19	53	23.70
29	2.27	54	25.95
30	2.35	55	28.25
31	2.50	56	30.65
32	2.70	57	33.25
33	2.95	58	36.05
34	3.20	59	38.85
35	3.50	60	41.65
36	3.90	61	44.50
37	4.30		
38	4.75		
39	5.25		
40	5.90		
41	6.60		
42	7.40		
43	8.30		
44	9.25		

Public Employees' Retirement Association
State of Minnesota

Police and Fire Fund

All Employees

SEPARATION RATES

(Per 1,000 Employees)

Age	Separation	Age	Separation
20	70.0	40	24.5
21	70.0	41	21.3
22	70.0	42	18.5
23	69.9	43	16.0
24	69.8	44	13.7
25	69.7	45	11.8
26	69.4	46	10.2
27	68.9	47	8.7
28	68.0	48	7.3
29	67.0	49	6.1
30	65.8	50	5.0
31	64.3	51	3.9
32	62.4	52	2.9
33	59.8	53	2.2
34	56.1	54	1.5
35	51.1	55	1.1
36	45.4	56	.7
37	39.5	57	.5
38	33.6	58	.3
39	28.7	59	.1

Public Employees Retirement Association
State of Minnesota

Police and Fire Fund

All Employees

EARNINGS PROGRESSION

Age	Rate	Age	Rate
20	.4353	45	.7142
21	.4440	46	.7284
22	.4529	47	.7430
23	.4619	48	.7579
24	.4712	49	.7730
25	.4806	50	.7885
26	.4902	51	.8043
27	.5000	52	.8203
28	.5100	53	.8368
29	.5202	54	.8535
30	.5306	55	.8706
31	.5412	56	.8880
32	.5521	57	.9057
33	.5631	58	.9238
34	.5744	59	.9423
35	.5859	60	.9612
36	.5976	61	.9804
37	.6095	62	1.0000
38	.6217		
39	.6342		
40	.6468		
41	.6598		
42	.6730		
43	.6864		
44	.7002		

Public Employees Retirement Association
State of Minnesota

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

Police and Fire Fund

ASSETS

Cash - On Hand	$ -		
On Deposit	7,154.84		
In Transit	5,557.33	$ 12,712.17	
Minnesota Adjustable Fixed Benefit Fund		3,693,494.09	
Accounts Receivable			
M.S. 1969, Section 353.36, Subd. 8 and 9	$ 4,260.96		
M.S. 1969, Section 353.83	48.49		
Member Contributions	103,618.40		
Employer Contributions	241,117.88		
Interest	201,327.26		
Dividends	49,034.83		
From Regular Fund	4,949.40		
Others	-	604,357.22	$ 4,310,563.48
Less Current Liabilities			32,094.60
Net Current Assets			$ 4,278,468.88

INVESTMENTS

Bonds		
U.S. Government	$1,948,000.00	
Municipal	-	
Corporate	9,983,597.64	
Canadian Government Insured	654,258.35	
Stocks		
Common	9,122,296.29	
Preferred	1,410.68	
Prepaid Interest	130.83	21,709,693.79
Total Assets		$25,988,162.67

Members accumulated contributions $6,620,835.71

1366-01-83

Public Employees Retirement Association
State of Minnesota

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1971)

Police and Fire Fund

RESERVES

Entry Age Normal Reserves at 3-1/2% - Active Members			
Retirement	$48,016,620.00		
Disability	16,370,735.00		
Survivors	6,004,725.00		
Refund	2,966,281.00		
	$73,358,361.00		
Less Value of Benefits to be Earned in the Future	50,853,307.00	$22,505,054.00	
Vested Members		338,633.00	
Members without Vested Rights		56,290.00	
Retired Members			
Retirements - Payable from Minnesota Adjustable Fixed Benefit Fund	$ 3,693,494.09		
Disability	61,778.00		
Widows	1,087,902.00		
Children	274,979.00		
Reserve for Future Old Law Survivors	515,331.00	5,633,484.09	$28,533,461.09
Unfunded Obligation			$ 2,545,298.42
Funded Obligation			25,988,162.67

1366-01-81

POLICE AND FIRE FUND
(Continued)

5(6)	Normal Cost Requirement	17.92%	$ 4,348,006
	Amortization Requirement	0.62%	150,695
	Total	18.54%	$ 4,498,701

5(7) The Police and Fire Fund was amended effective July 1, 1971. The amendment lowered the retirement age from age 58 to age 55; increased the benefit percent from 2% to 2-1/2% for the first twenty years of service and from 1% to 2% for each year of service over 30 years; provided for an additional "locked in" benefit as of July 1, 1971 for the "Old Law" benefit; and revised the benefits upon disability or death in active service. The Normal Cost and Amortization Requirement in Item 5(6) plus the Obligation for Service Rendered to Date in Item 5(1) are based on the amended plan and revised actuarial assumptions which lowered the expected average age at retirement from age 64 to age 62.

5(9)	Average Entry Age	
	All Actives	32.2
	New Entrants	
	July 1, 1967	35.4
	July 1, 1968	32.5
	July 1, 1969	31.5
	July 1, 1970	32.3
	July 1, 1971	32.4

5(10)	Average Retirement Age	
	All Retirees	65.2
	1967	64.8
	1968	65.0
	1969	65.2
	1970	65.3
	1971	64.4

5(11)	Administrative Expense	0.12%	$ 29,116
	Normal Cost	17.92%	$ 4,348,006