PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL VALUATION REPORT
(Based on a June 30, 1981 Census)

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

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COMPENSATION & CAPITAL
INCORPORATED

125 SOUTH WACKER DRIVE CHICAGO, ILLINOIS 60606 TELEPHONE 312 332-4420

November 28, 1981

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, 1981, 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 therein, 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, 1981.

Respectfully submitted,

COMPENSATION & CAPITAL INCORPORATED

Davis H. Roenisch

Davis H. Roenisch
Enrolled Actuary No. 174

DHR:kc

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

SUMMARY OF ACTUARIAL REQUIREMENTS
(July 1, 1981)

	General Fund Exhibit 8 Page 18	Police and Fire Fund Exhibit 21 Page 36
AMORTIZATION REQUIREMENTS		
Present Value of Benefits (For Both Past and Future Service)	$1,939,887,631	$ 347,258,505
Obligation for Service Rendered to Date	1,427,498,580	187,934,297
Net Assets	1,101,847,894	174,896,238
Accrued Unfunded Obligation	325,650,686	13,038,059
Funding Ratio	77%	93%
Amortization (28-Year) Requirement	21,858,498	875,148
Covered Payroll	1,037,047,955	85,810,155
Amortization (28-Year) Rate Requirement	2.108%	1.020%
ENTRY AGE NORMAL RATE REQUIREMENTS		
Value of Benefits to be Earned in the Future	$ 512,389,051	$ 159,324,208
Present Value of Future Payroll	6,375,853,600	1,033,376,300
Normal Cost Rate Requirement	8.036%	15.418%
Employee Contribution Rate	4.663*	8.000
Employer Normal Cost Rate Requirement	3.373%	7.418%
ACTUARIAL BALANCE		
Employer Contribution Rate Set by Law	6.329%*	12.000%
Amortization (28-Year) Rate Requirement	2.108%	1.020%
Normal Cost Rate Requirement	3.373	7.418
Allowance for Expenses	0.148	0.089
Total Requirement	5.629%	8.527%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	0.700%	3.473%

* Weighted by Covered Payroll 16.57% Basic and 83.43% Coordinated.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Value of Benefits Earned to June 30, 1981

	General Fund	
	Without Augmentation*	With Augmentation
Benefits Payable to Retired Members and their Beneficiaries	$ 405,021,256	$ 405,021,256
Deferred Annuitants	12,962,162	12,962,162
Former Members without Vested Rights	7,708,033	7,708,033
Active Members:		
a. Eligible for Normal Retirement	65,405,690	65,405,690
b. Eligible for Early Retirement	151,026,296	151,026,296
c. Eligible for Deferred Benefits	450,891,136	658,144,192
d. Under 10 years service (Refund of Contributions only)	68,391,510	68,391,510
Total	$1,161,406,083	$1,368,659,139

	Police and Fire Fund	
Benefits Payable to Retired Members and their beneficiaries	$ 41,847,708	$ 41,847,708
Deferred Annuitants	2,245,199	2,245,199
Former Members without Vested Rights	409,082	409,082
Active Members:		
a. Eligible for Normal Retirement	23,823,360	23,823,360
b. Eligible for Early Retirement	-	-
c. Eligible for Deferred Benefits	78,071,632	103,689,392
d. Under 10 years service (Refund of Contribution only)	14,995,535	14,995,535
Total	$ 161,392,516	$ 187,010,276

* Applies only to present active with 10 or more years of service. The value for Deferred Vested Benefits of inactive members includes augmentation to Normal Retirement Date and refund of contributions to inactive members with less than 10 years of service.

EXHIBIT 1

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Accounting Balance Sheet

June 30, 1981

Assets		
Cash:		
On hand	$ 100.00	
On deposit	818,077.36	$ 818,177.36
Accounts Receivable:		
Employer contributions	$ 33,153.87	
From Police and Fire Fund	107,585.46	
Interest on late employer contributions and delinquent payrolls	12,458.27	
Other	72,288.98	225,486.58
Accrued interest on investments		10,542,420.62
Accrued dividends		1,413,051.94
Prepaid interest		329,377.97
Prepaid expense		31,896.69
Total Current Assets		$ 13,360,411.16
Investments:		
Bonds - at amortized cost	$ 367,088,539.88	
Common stock - at cost	256,641,287.83	
Short-term	118,272,062.40	742,001,890.11
Minnesota Post-Retirement Investment Fund - at participation value	$ 331,335,088.14	
Annuity stabilization	8,142,045.24	339,477,133.38
Deferred yield adjustment		7,347,457.90
Equipment, furniture and fixtures - less accumulated depreciation		490,912.99
Total Assets		$1,102,677,805.54
Current Liabilities and Reserves		
Liabilities:		
Accounts payable	$ 78,190.31	
Security purchases payable	751,721.00	$ 829,911.31
Reserves:		
Member accumulated contributions		288,843,039.79
Benefit reserves		473,527,721.06
Reserve for participation in Minnesota Post-Retirement Investment Fund		331,335,088.14
Reserve for annuity stabilization		8,142,045.24
Total Liabilities and Reserves		$1,102,677,805.54

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Regular Fund

Sources and Uses of Funds

- July 1, 1980 - June 30, 1981 -

SOURCES

Employee Contributions	$ 48,766,567.95
Employer Contributions	65,924,362.36
Investment Income	80,498,225.34
Investment Sales and Redemptions	
Bonds and Notes	1,362,953,699.14
Stocks Sold	119,403,302.10
Cancelled Warrants	226,693.54
Interest Other than Investment Interest	260,064.44
Transfers from Police and Fire Fund	51,190.49
Miscellaneous Receipts	8,597.37
	$1,678,092,702.73
Add Cash Balance, July 1, 1980	1,645,319.03
Less Cash Balance, July 1, 1981	(818,077.36)
	$1,678,919,944.40

USES

Refunds	
Employee	$ 9,306,467.46
Employer	256,337.78
Interest Paid on Refunds	561,270.69
Net Payments to Minnesota Post-Retirement Investment Fund	24,915,183.91
Benefits Paid	
Retirement	37,703,294.75
Survivor	5,882,865.48
Disability	2,534,597.94
Direct Expense	2,212,584.64
Investment Purchases	
Bonds	1,458,881,270.29
Stocks	136,378,395.88
Net Transfers to State General Fund	287,675.58
	$1,678,919,944.40

EXHIBIT 3

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Accounting Statement of Income and Expense

July 1, 1980 to June 30, 1981

Income			
Employer contributions 8%		$ 14,236,848.49	
Employer contributions 2½%		4,449,055.94	
Employer contributions 4%		34,290,736.62	
Employer contributions 1½%		12,859,053.02	
Additional employer contributions		148,894.11	$ 65,984,588.18
Member contributions			48,714,123.65
Transferred from Police and Fire Fund:			
Member contributions		$ 5,550.61	
Employer contributions		7,311.46	
Other		4,745.99	17,608.06
Minnesota Post-Retirement Investment Fund income			23,401,718.00
Investment income			58,406,241.51
Gain on sale of stock			39,246,614.94
Interest on refunds repaid			195,518.08
Interest on delinquent employer contributions and late payrolls			66,431.41
Unit matching contribution			23,454.88
Other income			187,760.09
Total Income			$ 236,244,058.80
Expense			
Retirement annuities paid		$ 37,584,022.76	
Survivor benefits paid:			
Old Law	$2,484,709.23		
With children	659,526.04		
Without children	2,080,639.23	5,224,874.50	
Disability benefits paid		2,486,135.26	
Disability survivors paid:			
With children	$ 140,035.16		
Without children	485,891.27	625,926.43	
Refunds of Deposits:			
Active members due to withdrawal	$8,673,389.95		
Active members due to death	441,706.72	9,115,096.67	
Deferred members due to withdrawal	$ 72,950.88		
Deferred members due to death	16,363.28	89,314.16	
Annuitants due to death	$ 27,846.68		
Disabilitants due to death	13,274.90		
Survivors due to death	34,614.26	75,735.84	

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Accounting Income and Expense (Continued)

Expense (Continued)

Interest paid on refunds		$ 561,343.81	
Refunds of employer contributions		250,146.41	
Transfers to Police and Fire Fund:			
Member contributions	$ 5,589.12		
Employer contributions	3,197.91		
Other	1,930.29	10,717.32	
Loss on sales of bonds	$ 922,654.79		
Loss on sales of stocks	10,334,336.83	11,256,991.62	
Administrative expense		1,776,229.43	
Transfer to State General Fund		341,797.08	
Total Expense			$ 69,398,331.29
Excess of Income over Deductions			$ 166,845,727.51

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Reconciliation of Asset Balances

- June 30, 1981 -

Asset Balance, July 1, 1980			$ 923,152,291.86
Adjustment for Supplemental Payment			(7,187.38)
Add:			
Employer contributions		$66,008,043.06	
Employee contributions		48,714,123.65	
Employer and employee contributions transferred from Police and Fire Fund		17,608.06	
Realized income of the Minnesota Post-Retirement Fund		23,401,718.00	
Investment earnings		58,406,241.51	
Gains on sales of stock		39,246,614.94	
Interest on omitted contributions delinquent employer contributions and refunds repaid		261,949.49	
Net adjustment to Annuity Stabilization Reserve account		11,857,062.24	
Other income		187,760.09	
Total Additions			$ 248,101,121.04
			$1,171,246,225.52
Deduct:			
Benefits paid -			
Retirement	$37,584,022.76		
Survivor	5,850,800.93		
Disability	2,486,135.26	$45,920,958.95	
Refunds		9,530,293.08	
Interest paid on refunds		561,343.81	
Transfers to Police and Fire Fund		10,717.32	
Losses on sales of bonds and stock		11,256,991.62	
Administrative expenses		1,776,229.43	
Transfer to State General Fund		341,797.08	
Total Deductions			69,398,331.29
			$1,101,847,894.23
Current Liabilities and Accounts Payable			829,911.31
Asset Balance, June 30, 1981			$1,102,677,805.54

EXHIBIT 5

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ASSET ALLOCATION
(July 1, 1981)

	Basic Fund	Coordinated Fund	General Fund Total
Asset Balance July 1, 1980	$504,458,259.19	$418,694,032.67	$923,152,291.86
MPRF	238,580,403.55	40,722,765.68	279,303,169.23
General Fund	265,877,855.64	377,971,266.99	643,849,122.63
1. Employer Contributions	18,685,904.43	47,322,138.63	66,008,043.06
2. Employee Contributions	14,291,574.50	34,422,549.15	48,714,123.65
3. Transfer to State General Fund	(298,300.84)	(43,496.24)	(341,797.08)
4. Transfers from Police and Fire Fund	6,890.74	-	6,890.74
5. Benefits Paid			
i. Survivors	(5,733,321.06)	(117,479.87)	(5,850,800.93)
ii. Disability and Death	(2,141,309.24)	(344,826.02)	(2,486,135.26)
6. MPRF Annuity Stabilization Reserve	10,166,791.56	1,690,270.68	11,857,062.24
7. Refunds	(196,786.92)	(9,894,849.97)	(10,091,636.89)
8. Net (Items 1 to 7)	34,781,443.17	73,034,306.36	107,815,749.53
9. Benefits Paid from MPRF	(32,202,542.17)	(5,381,480.59)	(37,584,022.76)
10. Income from MPRF	19,873,969.40	3,527,748.60	23,401,718.00
11. Investment Income	35,859,960.54	50,978,426.49	86,838,387.03
12. Administrative Expenses	(469,691.03)	(1,306,538.40)	(1,776,229.43)
13. Net (Items 9 to 12)	23,061,696.74	47,818,156.10	70,879,852.84
14. Increase for Year (Sum of Items 8 and 13)	57,843,139.91	120,852,462.46	178,695,602.37
15. Asset Balance July 1, 1981	$562,301,399.10	$539,546,495.13	$1,101,847,894.23
i. MPRF	280,005,712.18	51,329,375.96	331,335,088.14
ii. General Fund	282,295,686.92	488,217,119.17	770,512,806.09

Public Employees Retirement Association

General Fund

ACTUARIAL ASSUMPTIONS

The assumptions can be summarized as follows:

Interest:	5%
Mortality:	1965 Group Annuity
Retirement Age:	65 for employees who have less than 30 years of service. For employees with 30 or more years of service - 30% at age 62, 15% at ages 63 and 64, and 100% at age 65.
Disability:	PERA Experience
Turnover:	PERA Experience
Salary Scale:	3 1/2% per year

A detailed statement of the mortality rates, disability rates, turnover factors, and salary scale is set out in the following Tables 1 through 4.

Public Employees Retirement Association

General Fund

Male Employees

MORTALITY RATES
(Per 1,000 Employees)

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

TABLE 1f

Public Employees Retirement Association

General Fund

Female Employees

MORTALITY RATES
(Per 1,000 Employees)

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

Public Employees Retirement Association

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

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

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

General Fund

ALL EMPLOYEES

EARNINGS PROGRESSION

Age	Rate	Age	Rate
20	.2127	45	.5024
21	.2201	46	.5200
22	.2278	47	.5382
23	.2358	48	.5570
24	.2441	49	.5765
25	.2526	50	.5967
26	.2614	51	.6176
27	.2705	52	.6392
28	.2800	53	.6616
29	.2898	54	.6848
30	.2999	55	.7088
31	.3104	56	.7336
32	.3213	57	.7593
33	.3325	58	.7859
34	.3441	59	.8134
35	.3561	60	.8419
36	.3686	61	.8714
37	.3815	62	.9019
38	.3949	63	.9335
39	.4087	64	.9662
40	.4230	65	1.0000
41	.4378		
42	.4531		
43	.4690		
44	.4854		

EXHIBIT 7

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1981)

General Fund

RESERVES

Entry Age Normal Reserve			
Retirement	$1,192,145,956		
Vesting	146,822,568		
Disability	76,086,457		
Survivors	34,405,665		
Refund	64,735,534		
	$1,514,196,180		
Less Value of Benefits Earned in the Future	512,389,051	$1,001,807,129	
Deferred Annuitants		12,962,162	
Former Members without Vested Rights		7,708,033	
Retired Members: Minnesota Post-Retirement Fund Admitted Assets	$ 331,335,088*		
Disability	17,704,951		
Survivors	48,170,383		
Reserve for Future Old Law Survivors	6,056,229		
Plus Net Mortality Loss Payable to Minnesota Post-Retirement Fund	1,754,605	405,021,256	$1,427,498,580
Unfunded Obligation			325,650,686
Funded Obligation			$1,101,847,894

* Includes Annuity Stabilization Reserve. Retired Life Reserves are $341,236,738.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL REQUIREMENTS
(July 1, 1981)

General Fund

AMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		$1,939,887,631	
Obligation for Service Rendered to Date	$1,427,498,580		
Net Assets	1,101,847,894		
Accrued Unfunded Obligation	325,650,686		
Funding Ratio			77%
Amortization (28-Year) Requirement	$ 21,858,498		
Covered Payroll	1,037,047,955		
Amortization (28-Year) Rate Requirement			2.108%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	$ 512,389,051		
Present Value of Future Payroll	6,375,853,600		
Normal Cost Rate Requirement		8.036%	
Employee Contribution Rate*		4.663	
Employer Normal Cost Rate Requirement			3.373%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law*		6.329%
Amortization (28-Year) Rate Requirement	2.108%	
Normal Cost Rate Requirement	3.373	
Allowance for Expenses	0.148	
Total Requirement		5.629%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		0.700%

* Weighted by Covered Payroll 16.57% Basic and 83.43% Coordinated

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL REQUIREMENTS
(July 1, 1981)

General Fund

AMORTIZATION RATE REQUIREMENT

	Period			
	10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	$ 325,650,686	$ 325,650,686	$ 325,650,686	$ 325,650,686
Amortization Requirement	42,173,254	26,131,053	21,184,044	18,978,323
Covered Payroll	1,037,047,955	1,037,047,955	1,037,047,955	1,037,047,955
Amortization Rate Requirement	4.067%	2.520%	2.043%	1.830%

ACTUARIAL BALANCE

	10-Year	20-Year	30-Year	40-Year
Employer Contribution Rate Set by Law*	6.329%	6.329%	6.329%	6.329%
Amortization Rate Requirement	4.067%	2.520%	2.043%	1.830%
Normal Cost Rate Requirement	3.373	3.373	3.373	3.373
Allowance for Expenses	0.148	0.148	0.148	0.148
Total Requirement	7.588%	6.041%	5.564%	5.351%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	(1.259%)	0.288%	0.765%	0.978%

* Weighted by Covered Payroll

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

General Fund

STATEMENT OF REVENUE, EXPENDITURES, CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
(Year Ending June 30, 1981)

Revenue:		
Employer Contributions	$66,008,043.06	
Member Contributions	48,714,123.65	
Transfer from Police and Fire Fund	6,890.74	
Annuity Stabilization Reserve Adjustment	11,857,062.24	
Investment Income	86,838,387.03	
Minnesota Post-Retirement Investment Fund Income	23,401,718.00	
Total Revenue		$236,826,224.72
Expenditure:		
Benefits	$45,920,958.95	
Refund of Contributions	10,091,636.89	
Transfer to State General Fund	341,797.08	
Administrative Expense	1,776,229.43	
Total Expenditures		58,130,622.35
Increase in Assets (1981)		$178,695,602.37

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

General Fund

ALLOCATION OF CHANGE IN ACTUARIAL RESERVES

Item	Assets	Reserves	Change in Unfunded Increase (Decrease)
Contribution Income	$114,722,167	$ 91,431,731[1]	$(23,290,436)
Investment Income	110,240,105[2]	46,157,615	(64,082,490)
Annuity Stabilization Reserve	11,857,063	11,857,063	-
Total Income	236,819,335	149,446,409	(87,372,926)
Benefit Payments and Transfers	(58,123,732)	(58,123,732)	-
Increase in Reserves Based on Salary Change	-	74,902,571	74,902,571
Mortality Loss	-	1,754,605	1,754,605
Other Experience Variation[3]	-	(2,980,625)	(2,980,625)
Net Change	$178,695,603	$164,999,228	$(13,696,375)

1 Normal Cost Plus Interest on the Unfunded
2 Includes MPRF Income
3 Includes Actual Less Estimated Income Gain

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

General Fund

ESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income Less Reserves		$87,372,926
Estimated Sources of Gain:		
Amortization Payment	$ 6,303,585	
Excess Interest (5.9% x Average Invested Assets)	59,737,506	
Contribution Rates Applied to Larger Payroll	10,221,030	
Excess in Contribution Rate	5,510,105	81,772,226
Actual Less Estimated Gain		$5,600,700

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ACTIVE MEMBERS

General Fund

As of July 1, 1980	93,787
New Entrants	13,368
Reinstated	4,358
Transfer	-
TOTAL	111,513
Separations:	
a. With Refund of Contributions	
(i) Death	135
(ii) Withdrawal	13,619
b. With Deferred Annuity	189
c. With Disability Annuity	151
d. With Normal Retirement Annuity	1,256
e. With Survivor Annuity	209
TOTAL	15,559
Members as of July 1, 1981	95,954
Inactive Members*	8,097
Members Included in Entry Age Normal Cost Calculation	87,857

* Members with no contributions for 12 months or more. The resulting obligation was included with vested inactive members.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ANNUITANTS

General Fund

Normal Retirement Annuitants	
As of July 1, 1980	11,296
Additions During Year	1,445
Deletions During Year	-489
Total as of July 1, 1981	12,252
Annual Annuity - July 1, 1980	$32,049,940
- July 1, 1981	$36,538,317
Disability Annuitants	
As of July 1, 1980	622
Additions During Year	137
Deletions During Year	-135
Total as of July 1, 1981	624
Annual Annuity - July 1, 1980	$ 2,208,764
- July 1, 1981	$ 2,400,679
Survivor Annuitants	
(a) Spouse Only as of July 1, 1980	3,064
Optional Survivors as of July 1, 1980	184
Additional Spouse Only During Year*	170
Additional Optional Survivors During Year	41
Deletions During Year	-127
Total as of July 1, 1981	3,332
Annual Annuity - July 1, 1980	$ 4,863,045
- July 1, 1981	$ 5,835,625
(b) Survivor with Children as of July 1, 1980	163
Additions During Year	15
Deletions During Year	-21
Total as of July 1, 1981	157
Annual Annuity - July 1, 1980	$ 446,762
- July 1, 1981	$ 479,205
(c) Children as of July 1, 1980	287
Additions During Year	-
Deletions During Year	-37
Total as of July 1, 1981	250
Annual Annuity - July 1, 1980	$ 319,312
- July 1, 1981	$ 302,707
Deferred Vested Members	
As of July 1, 1980	1,539
Additions During Year	189
Deletions During Year	-20
Total as of July 1, 1981	1,708

* Includes Survivors with children at initial commencement date who have no dependent children at June 30, 1981.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

Accounting Balance Sheet

June 30, 1981

Assets		
Cash on deposit		$ 98,748.32
Accounts Receivable:		
From Regular Fund	$ 10,753.32	
Employer contributions	1,185.99	
Police State Aid	91,040.86	
New units	495,456.18	
Interest from new units	23,985.85	
Interest on late contributions	3,753.00	
Other	7,488.61	633,663.81
Accrued interest on investments		1,941,184.40
Accrued dividends		259,990.94
Prepaid interest		71,391.55
Total Current Assets		$ 3,004,979.02
Investments:		
Bonds - at amortized cost	$ 69,436,350.63	
Common stock - at cost	44,684,932.76	
Short-term	22,710,978.08	136,832,261.47
Minnesota Post-Retirement Investment Fund	$ 33,985,996.34	
Annuity stabilization	434,075.30	34,420,071.64
Deferred yield adjustment		871,840.31
Total Assets		$175,129,152.44
Current Liabilities and Reserves		
Liabilities:		
Accounts payable	$ 107,585.46	
Security purchases payable	125,329.00	$ 232,914.46
Reserves:		
Members accumulated contributions		38,999,677.09
Benefit reserves		101,476,489.25
Reserve for participation in Minnesota Post-Retirement Investment Fund		33,985,996.34
Reserve for annuity stabilization		434,075.30
Total Liabilities and Reserves		$175,129,152.44

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

Sources and Uses of Funds

- July 1, 1980 - June 30, 1981 -

SOURCES	
Employee Contributions	$ 7,110,885.25
Employer Contributions	
12%	10,662,754.88
Payments from New Units	56,112.52
Police State Aid	587,439.21
Investment Income	13,595,280.16
Investment Sales and Redemptions	
Bonds	428,887,041.42
Stocks	19,154,481.81
Interest Other than Investment Interest	32,325.40
Cancelled Warrants	55,039.53
	$480,141,360.18
Add Cash Balance, July 1, 1980	195,324.82
Less Cash Balance, July 1, 1981	(98,748.32)
	$480,237,936.68

USES	
Refunds	
Employee	$ 745,247.11
Employer	10,343.34
Interest Paid on Refunds	47,434.49
Payments to Minnesota Post-Retirement Investment Fund	2,208,980.57
Annuities Paid	
Retirement	3,083,520.28
Survivor	488,056.60
Disability	186,878.12
Net Transfers to Regular Fund	51,190.49
Investment Purchases	
Bonds	450,669,013.01
Stocks	22,732,138.66
Net Transfers to State General Fund	15,134.01
	$480,237,936.68

EXHIBIT 17

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

Accounting Statement of Income and Expense

July 1, 1980 to June 30, 1981

Income

Employer contributions - 1980-1981			$ 10,644,393.15
Employer contributions - other			15,586.58
Member contributions			7,109,496.12
Special income for Police State Aid			606,711.14
Transferred from Regular Fund:			
Members contributions		$ 5,589.12	
Employer contributions		3,197.91	
Other		1,930.29	10,717.32
Minnesota Post-Retirement Investment Fund			2,334,208.14
Investment income			11,004,746.32
Gain on sale of stock			5,605,449.73
Interest on refunds repaid			2,896.25
Interest on delinquent employer contributions and late payrolls			4,271.45
Interest on purchased coverage from new units			23,985.85
Adjustment for prior year entries			4,152.79
Total Income			$ 37,366,614.84

Expense

Retirement annuities paid		$ 3,073,170.64	
Survivor benefits paid:			
Old Law	$ 87,394.34		
With children	149,775.45		
Without children	206,922.49	444,092.28	
Disability benefits paid		157,292.08	
Disability survivors paid:			
With children	$ 17,116.04		
Without children	25,228.22	42,344.26	
Refunds of Deposits:			
Active members due to withdrawal	$ 686,953.18		
Active members due to death	23,535.56	710,488.74	
Deferred members due to withdrawal	$ 6,292.87		
Deferred members due to death	1,192.52	7,485.39	
Annuitants due to death		13,789.19	

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

Accounting Income and Expense (Continued)

Expense (Continued)

Interest paid on refunds		$ 47,434.49	
Refunds of employer contributions		8,487.55	
Transfers to Regular Fund:			
Member contributions	$ 5,550.61		
Employer contributions	7,311.46		
Other	4,745.99	17,608.06	
Loss on sales of stocks		1,473,675.06	
Loss on sales of bonds		125,946.71	
Transfer to State General Fund		12,299.01	
Administrative expense		92,872.40	
Total Expense			$ 6,226,985.86
Excess of Income over Expense for the year ended June 30, 1981			$ 31,139,628.98

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

POLICE AND FIRE FUND

Reconciliation of Asset Balances

- June 30, 1981 -

Asset Balance, July 1, 1980			$143,124,478.70
Add:			
Employer contributions		$10,659,979.73	
Employee contributions		7,109,496.12	
Special income - Police State Aid		606,711.14	
Employer and employee contributions transferred from Regular Fund		10,717.32	
Realized income of the Minnesota Post-Retirement Fund		2,334,208.14	
Investment earnings		11,004,746.32	
Gains on sales of stock		5,605,449.73	
Interest on purchased coverage from new units		23,985.85	
Interest on omitted contributions delinquent employer contributions and refunds repaid		7,167.70	
Net adjustment to Annuity Stabilization Reserve account		632,130.30	
Adjustments for prior year entries		4,152.79	37,998,745.14
Total Additions			$181,123,223.84
Deduct:			
Benefits paid -			
Retirement	$3,073,170.64		
Survivor	486,436.54		
Disability	157,292.08	$ 3,716,899.26	
Refunds		740,250.87	
Interest paid on refunds		47,434.49	
Transfers to Regular Fund		17,608.06	
Losses on sales of bonds and stock		1,599,621.77	
Transfer to State General Fund		12,299.01	
General administrative expense		92,872.40	
Total Deductions			6,226,985.86
			$174,896,237.98
Current Liabilities and Accounts Payable			232,914.46
Asset Balance, June 30, 1981			$175,129,152.44

Public Employees Retirement Association

Police and Fire Fund

ACTUARIAL ASSUMPTIONS

The assumptions can be summarized as follows:

Interest:	5%
Mortality:	1965 Group Annuity
Retirement Age:	60
Disability:	See Following Table
Turnover:	See Following Table
Salary Scale:	3 1/2% per year

A detailed statement of the mortality rates, disability rates, turnover factors, and salary scale is set out in the following Table 1 through 4.

Public Employees Retirement Association

Police and Fire Fund

All Employees

MORTALITY RATES
(Per 1,000 Employees)

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

Public Employees Retirement Association

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		
36	3.90		
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

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

Police and Fire Fund

All Employees

EARNINGS PROGRESSION

Age	Rate	Age	Rate
20	.2526	45	.5967
21	.2614	46	.6176
22	.2705	47	.6392
23	.2800	48	.6616
24	.2898	49	.6848
25	.2999	50	.7088
26	.3104	51	.7336
27	.3213	52	.7593
28	.3325	53	.7859
29	.3441	54	.8134
30	.3561	55	.8419
31	.3686	56	.8714
32	.3815	57	.9019
33	.3949	58	.9335
34	.4087	59	.9661
35	.4230	60	1.0000
36	.4378		
37	.4531		
38	.4690		
39	.4854		
40	.5024		
41	.5200		
42	.5382		
43	.5570		
44	.5765		

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1981)

Police and Fire Fund

RESERVES

Entry Age Normal Reserves			
Retirement	$212,917,916		
Vesting	16,609,583		
Disability	57,653,002		
Survivors	9,716,670		
Refund	5,859,345		
	$302,756,516		
Less Value of Benefits to be Earned in the Future	$159,324,208	$143,432,308	
Deferred Annuitants		2,245,199	
Former Members without Vested Rights		409,082	
Retired Members: Minnesota Post-Retirement Fund Admitted Assets	$ 34,420,072*		
Disability	1,413,761		
Survivors	5,794,144		
Reserve for Future Old Law Survivors	253,069		
Minus Net Mortality Gain Receivable from Minnesota Fund	(33,338)	41,847,708	$187,934,297
Unfunded Obligation			13,038,059
Funded Obligation			$174,896,238

* Includes Annuity Stabilization Reserve. Retired Life Reserves are $34,386,733.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL REQUIREMENTS
(July 1, 1981)

Police and Fire Fund

AMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)			$347,258,505
Obligation for Service Rendered to Date	$ 187,934,297	Accrued liabilities	
Net Assets	174,896,238	assets	
Accrued Unfunded Obligation	13,038,059	UAL	
Funding Ratio			93%
Amortization (28-Year) Requirement	875,148		
Covered Payroll	85,810,155		
Amortization (28-Year) Rate Requirement			1.020%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned In the Future	$ 159,324,208	
Present Value of Future Payroll	1,033,376,300	
Normal Cost Rate Requirement		
Employee Contribution Rate	15.418%	
Employer Normal Cost Rate Requirement	8.000	
		7.418%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		12.000%
Amortization (28-Year) Rate Requirement	1.020%	
Normal Cost Rate Requirement	7.418	
Allowance for Expenses	0.089	
Total Requirement		8.527%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		3.473%

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL REQUIREMENTS
(July 1, 1981)

Police and Fire Fund

AMORTIZATION RATE REQUIREMENT

	Period 10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	$13,038,059	$13,038,059	$13,038,059	$13,038,059
Amortization Requirement	1,688,488	1,046,208	848,144	759,834
Covered Payroll	85,810,155	85,810,155	85,810,155	85,810,155
Amortization Rate Requirement	1.968%	1.219%	0.988%	0.885%

ACTUARIAL BALANCE

	10-Year	20-Year	30-Year	40-Year
Employer Contribution Rate Set by Law	12.000%	12.000%	12.000%	12.000%
Amortization Rate Requirement	1.968%	1.219%	0.988%	0.885%
Normal Cost Rate Requirement	7.418	7.418	7.418	7.418
Allowance for Expenses	0.089	0.089	0.089	0.089
Total Requirement	9.475%	8.726%	8.495%	8.392%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	2.525%	3.274%	3.505%	3.608%

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

STATEMENT OF REVENUE, EXPENDITURES, CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
(Year Ending June 30, 1981)

Revenue:		
Employer Contributions	$10,659,979.73	
Member Contributions	7,109,496.12	
Special Income	606,711.14	
Investment Income	15,045,880.62	
Minnesota Post-Retirement Investment Fund Income	2,334,208.14	
Annuity Stabilization Reserve Adjustment	632,130.30	
Total Revenue		$36,388,406.05
Expenditures:		
Benefits	$ 3,716,899.26	
Refund of Contributions	787,685.36	
Transfer to Regular Fund	6,890.74	
Transfer to State General Fund	12,299.01	
Administrative Expense	92,872.40	
Total Expenditures		4,616,646.77
Increase in Assets (1981)		$31,771,759.28

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

ALLOCATION OF CHANGE IN ACTUARIAL RESERVES

Item	Assets	Reserves	Change in Unfunded Increase (Decrease)
Contribution Income	$17,769,476	$12,681,615[1]	$ (5,087,861)
Investment Income	17,380,089[2]	7,156,224	(10,223,865)
Annuity Stabilization Reserve	632,130	632,130	-
Other Income	606,711	-	(606,711)
Total Income	36,388,406	20,469,969	(15,918,437)
Benefit Payments	(4,597,457)	(4,597,457)	-
Transfers	(19,190)	(19,190)	-
Increase in Reserves Based on Salary Change	-	10,687,945	10,687,945
Mortality Gain	-	(33,338)	(33,338)
Other Experience Variation[3]	-	(290,027)	(290,027)
Net Change	$31,771,759	$26,210,902	$ (5,560,857)

1 Normal Cost Plus Interest on the Unfunded
2 Includes MPRF Income
3 Includes Actual Less Estimated Income Gain

Police and Fire Fund

SUPPORTING EXHIBITS

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

ESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income less Reserves		$15,918,437
Estimated Sources of Change:		
Amortization Payment	$ 298,429	
Excess Interest (5.9% x Average Invested Assets)	9,381,611	
Excess Contribution Rate	2,123,083	
Contribution Rate Applied to Larger Payroll	1,991,736	
Other Income	606,711	14,401,570
Actual Less Estimated Gain		$ 1,516,867

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ACTIVE MEMBERS

Police and Fire Fund

As of July 1, 1980	4,492
New Entrants	392
Reinstated	200
TOTAL	5,084
Separations:	
a. With Refund of Contribution	
(i) Death	2
(ii) Withdrawal	306
b. With Deferred Annuity	3
c. With Disability Annuity	10
d. With Normal Retirement Annuity	88
e. With Survivor Annuity	9
TOTAL	418
Members as of July 1, 1981	4,666
Inactive Members*	310
Members Included in Entry Age Normal Cost Calculation	4,356

* Members with no contributions for 12 months or more. The resulting obligation was included with vested and inactive members.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ANNUITANTS

Police and Fire Fund

Normal Retirement Annuitants	
As of July 1, 1980	554
Additions During Year	91
Deletions During Year	-52
Total as of July 1, 1981	593
Annual Annuity - July 1, 1980	2,732,763
- July 1, 1981	3,123,813
Disability Annuitants	
As of July 1, 1980	27
Additions During Year	10
Deletions During Year	-4
Total as of July 1, 1981	33
Annual Annuity - July 1, 1980	148,153
- July 1, 1981	199,931
Survivor Annuitants	
(a) Spouse Only as of July 1, 1980	141
Optional Survivors as of July 1, 1980	19
Additional Spouse Only During Year*	11
Additional Optional Survivors During Year	6
Deletions During Year	-1
Total as of July 1, 1981	176
Annual Annuity - July 1, 1980	322,528
- July 1, 1981	396,784
(b) Survivor with Children as of July 1, 1980	36
Additons During Year	2
Deletions During Year*	-7
Total as of July 1, 1981	31
Annual Annuity - July 1, 1980	109,912
- July 1, 1981	95,064
(c) Children as of July 1, 1980	66
Additions During Year	-
Deletions During Year	-10
Total as of July 1, 1981	56
Annual Annuity - July 1, 1980	65,429
- July 1, 1981	59,024
Deferred Vested Members	
As of July 1, 1980	216
Additions During Year	3
Deletions During Year	-6
Total as of July 1, 1981	213

* Includes Survivors with children at initial commencement date who have no dependent children at June 30, 1981.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

Retired Prior to July 1, 1973

Payable From Adjustable Fixed Benefit Fund

	MALE		FEMALE	
AGE	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
63	1	$ 270.76	-	$ -
64	4	650.59	-	-
65	1	284.23	-	-
66	6	1,595.31	-	-
67	3	1,421.09	1	144.74
68	6	1,305.04	-	-
69	6	1,402.87	-	-
70	3	664.76	-	-
71	7	2,240.89	-	-
72	9	2,755.54	-	-
73	8	2,618.43	1	395.36
74	11	3,193.88	-	-
75	13	3,835.73	1	235.92
76	9	2,846.45	1	103.14
77	7	1,189.30	-	-
78	8	1,982.61	-	-
79	14	3,778.39	-	-
80	10	3,059.11	1	252.68
81	11	6,091.81	-	-
82	5	1,084.43	1	76.18
83	2	509.72	1	268.42
84	5	1,133.17	-	-
85	4	1,262.56	-	-
86	4	710.74	-	-
87	1	139.77	-	-
92	1	248,07	-	-
TOTAL	159	$46,235.25	7	$1,476.44

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION
Police and Fire Fund
Retired Under Law in Force July 1, 1973 and Subsequent
Payable From Adjustable Fixed Benefit Fund

	MALE		FEMALE	
AGE	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
55	5	$ 4,793.98	1	$ 133.01
56	15	10,077.50	1	601.03
57	18	11,621.40	1	164.71
58	17	10,557.33	2	496.27
59	22	12,875.54	2	537.07
60	19	10,608.01	2	257.44
61	25	16,483.64	3	1,453.68
62	24	13,197.34	1	41.76
63	20	10,026.02	3	1,326.42
64	26	14,171.97	1	272.11
65	38	18,341.09	2	764.21
66	29	11,297.39	-	-
67	34	14,456.33	1	234.36
68	29	12,003.34	2	852.03
69	19	10,261.10	2	815.84
70	16	5,981.65	-	-
71	14	5,168.95	1	192.00
72	10	2,030.60	-	-
73	12	6,698.19	1	122.60
74	2	1,084.68	-	-
75	1	239.55	-	-
76	3	1,437.81	-	-
77	1	506.49	-	-
79	1	118.04	-	-
84	1	303.59	-	-
TOTALS	401	$204,341.53	26	$8,264.54

Survivor Annuities
Payable From Adjustable Fixed Benefit Fund

	MALE		FEMALE	
AGE	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
54	-	$ -	1	$ 77.07
55	-	-	1	233.95
56	-	-	1	424.77
57	-	-	1	273.46
58	-	-	1	328.68
59	-	-	1	178.62
60	-	-	1	270.26
62	-	-	3	649.31
63	-	-	3	711.48
64	-	-	4	728.56
65	-	-	2	583.90
66	-	-	2	607.16
68	-	-	1	264.26
69	-	-	1	200.98
71	-	-	2	165.31
72	-	-	1	76.17
75	-	-	1	129.46
76	1	165.51	1	38.01
84	-	-	1	73.29
85	-	-	1	46.94
TOTALS	1	$165.51	30	$6,061.64

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

Survivor Annuities

FEMALE

AGE	NUMBER	MONTHLY ANNUITY	AGE	NUMBER	MONTHLY ANNUITY
30	1	$373.19	60	3	$ 1,348.20
32	1	372.79	61	4	794.29
33	1	450.00	62	3	682.84
34	2	540.94	63	12	1,937.82
35	1	405.68	64	3	440,68
37	1	669.71	65	5	1,217.59
38	2	739.82	66	1	29.01
39	1	450.00	67	4	501.58
43	2	271.95	68	5	463.50
44	2	865.27	69	3	701.72
45	2	681.75	70	6	982.38
46	4	1,246.07	71	3	290.32
47	2	818.65	72	7	816.43
48	4	620.99	73	6	952.11
49	6	1,778.67	74	5	603.38
50	3	906.40	75	3	363.26
51	2	500.59	76	4	564.59
52	2	643.04	77	6	734.86
53	2	419.87	78	3	254.78
54	5	813.14	79	3	404.76
55	5	1,745.35	80	1	73.20
56	6	1,353.70	81	5	3,879.08
57	2	181.87	82	6	686.79
58	4	822.26	83	2	246.71
59	1	459.99	84	2	282.93
			85	4	464.29
			86	2	241.31
			91	1	94.06
			93	1	111.83
TOTALS				176	$34,760.14

CHILDREN

NUMBER	MONTHLY ANNUITY
56	$4,918.63

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

DISABILITY

AGE	NUMBER	MONTHLY ANNUITY
31	1	$ 695.44
35	1	450.27
36	1	501.08
37	1	254.91
38	3	1,870.26
41	2	919.70
42	1	752.40
44	1	577.22
45	1	313.86
46	3	1,713.34
47	1	379.85
48	3	1,673.24
49	3	1,067.62
51	2	887.71
52	2	417.83
53	3	1,671.95
54	2	1,512.91
55	2	1,001.35
TOTALS	33	$16,660.94

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

CONSIDERED EARNINGS

Active Male Employees
(Age and Service as of July 1, 1981)

YEARS OF SERVICE

Age	Under 1 No.	Under 1 Earnings	1 No.	1 Earnings	2 to 4 No.	2 to 4 Earnings	5 to 9 No.	5 to 9 Earnings
Under 25	87	$ 1,075,999	93	$1,345,202	74	$ 1,239,977	2	$ 42,219
25 to 29	108	1,511,342	116	1,822,508	384	7,192,470	214	4,189,954
30 to 34	95	1,301,010	44	662,572	252	4,873,261	497	10,408,607
35 to 39	20	267,145	32	496,564	105	2,065,953	218	4,512,576
40 to 44	7	60,850	11	157,737	47	911,325	82	1,671,742
45 to 49	4	47,990	3	21,868	23	419,297	50	877,519
50 to 54	4	53,633	7	111,571	24	466,186	33	592,195
55 to 59	2	15,175	2	36,817	14	286,873	18	324,684
60 to 64	5	66,083	2	28,366	-	-	12	193,130
65 & Up	-	-	-	-	1	3,722	2	26,237
TOTAL	332	$ 4,399,227	310	$4,683,205	924	$17,459,064	1,128	$22,838,863

YEARS OF SERVICE

Age	10 to 14 No.	10 to 14 Earnings	15 to 19 No.	15 to 19 Earnings	20 to 24 No.	20 to 24 Earnings	25 to 29 No.	25 to 29 Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 29	9	180,736	-	-	-	-	-	-
30 to 34	134	2,928,776	9	205,753	1	23,996	-	-
35 to 39	247	5,531,028	48	1,191,634	4	105,352	-	-
40 to 44	188	4,147,939	123	2,943,795	21	516,092	2	48,810
45 to 49	100	2,114,807	89	2,052,593	48	1,176,511	16	405,323
50 to 54	57	1,187,063	49	1,110,945	57	1,331,680	49	1,247,147
55 to 59	34	621,584	44	955,142	38	884,258	27	604,617
60 to 64	23	413,208	26	525,113	8	173,995	6	135,503
65 & Up	3	48,720	8	124,363	1	21,257	1	17,967
TOTAL	795	$17,173,861	396	$9,109,338	178	$ 4,233,141	101	$ 2,459,367

YEARS OF SERVICE

Age	30 to 34 No.	30 to 34 Earnings	35 to 39 No.	35 to 39 Earnings	40 & Up No.	40 & Up Earnings	All No.	All Earnings
Under 25	-	$ -	-	$ -	-	$ -	256	$ 3,703,397
25 to 29	-	-	-	-	-	-	831	14,897,010
30 to 34	-	-	-	-	-	-	1,032	20,403,975
35 to 39	-	-	-	-	-	-	674	14,170,252
40 to 44	-	-	-	-	-	-	481	10,458,290
45 to 49	1	23,129	-	-	-	-	334	7,139,037
50 to 54	6	163,111	-	-	-	-	286	6,263,531
55 to 59	8	191,202	-	-	-	-	187	3,920,352
60 to 64	4	109,280	1	31,829	-	-	87	1,676,507
65 & Up	1	24,661	-	-	-	-	17	266,927
TOTAL	20	$ 511,383	1	$ 31,829	-	$ -	4,185	$82,899,278

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

CONSIDERED EARNINGS

Active Female Employees
(Age and Service as of July 1, 1981)

YEARS OF SERVICE

Age	Under 1 No.	Under 1 Earnings	1 No.	1 Earnings	2 to 4 No.	2 to 4 Earnings	5 to 9 No.	5 to 9 Earnings
Under 25	14	$179,117	8	$116,662	1	$ 10,490	-	$ -
25 to 29	9	121,068	12	175,102	30	559,285	8	143,765
30 to 34	3	43,886	1	15,157	8	160,076	13	252,151
35 to 39	1	15,893	-	-	4	69,259	3	46,178
40 to 44	-	-	-	-	5	87,211	4	63,461
45 to 49	-	-	-	-	-	-	6	91,304
50 to 54	-	-	-	-	2	22,981	3	45,771
55 to 59	-	-	-	-	1	13,715	2	38,890
60 to 64	-	-	-	-	-	-	-	-
65 & Up	-	-	1	32,557	-	-	-	-
TOTAL	27	$359,964	22	$339,478	51	$923,017	39	$ 681,520

YEARS OF SERVICE

Age	10 to 14 No.	10 to 14 Earnings	15 to 19 No.	15 to 19 Earnings	20 to 24 No.	20 to 24 Earnings	25 to 29 No.	25 to 29 Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 29	-	-	-	-	-	-	-	-
30 to 34	3	54,104	-	-	-	-	-	-
35 to 39	6	126,332	-	-	-	-	-	-
40 to 44	2	30,557	-	-	-	-	-	-
45 to 49	6	124,523	-	-	-	-	-	-
50 to 54	3	61,498	2	46,241	1	14,652	1	18,633
55 to 59	5	83,923	1	22,132	-	-	-	-
60 to 64	1	12,208	-	-	1	12,095	-	-
65 & Up	-	-	-	-	-	-	-	-
TOTAL	26	$493,145	3	$ 68,373	2	$ 26,747	1	$ 18,633

YEARS OF SERVICE

Age	30 to 34 No.	30 to 34 Earnings	35 to 39 No.	35 to 39 Earnings	40 & Up No.	40 & Up Earnings	All No.	All Earnings
Under 25	-	$ -	-	$ -	-	$ -	23	$ 306,269
25 to 29	-	-	-	-	-	-	59	999,220
30 to 34	-	-	-	-	-	-	28	525,374
35 to 39	-	-	-	-	-	-	14	257,662
40 to 44	-	-	-	-	-	-	11	181,229
45 to 49	-	-	-	-	-	-	12	215,827
50 to 54	-	-	-	-	-	-	12	209,776
55 to 59	-	-	-	-	-	-	9	158,660
60 to 64	-	-	-	-	-	-	2	24,303
65 & Up	-	-	-	-	-	-	1	32,557
TOTAL	-	$ -	-	$ -	-	$ -	171	$2,910,877

PUBLIC EMPLOYEES POLICE AND FIRE FUND

SUMMARY OF PLAN

1. Name

Public Employees Police and Fire Fund.

2. Type of Plan

Self-insured, managed by a 15-member Board of Trustees.

3. Employer Included

Any county, city, borough, town within the state.

4. Employees Included

All full time, and certain part time, police officers and fire fighters, who are not contributing to any other local retirement plan.

5. Allowable Service

All periods of public service during which salary deductions were made or for which payments in lieu of salary deductions were deposited, including authorized leaves of absence, sick leaves, military leaves and layoffs.

6. Considered Salary

Salary means the periodical total compensation of any public employee before deductions for deferred compensation or supplemental retirement plans, and also means wages and includes net income from fees.

7. Employee Contributions

After July 1, 1973, 8% of considered salary.

8. Employer Contributions

An amount equal to 12% of considered salary.

9. Normal Retirement Annuity

After attainment of age 55 and completion of at least 10 years of allowable service.

"Average salary" means an amount equivalent to the highest salary upon which contributions were paid for any five successive years of allowable service.

Annuity equal to:

(a) 2 1/2% of "Average Salary" for each of the first 20 years of allowable service, plus

(b) 2% of "Average Salary" for each year of service over 20 years.

10. Late Retirement Annuity

Annual Annuity determined as for Normal Retirement, considering allowable service and salary to actual retirement.

11. Proportionate Annuity

At age 65 or earlier under a mandatory retirement statute or uniformly applied compulsory retirement policy and completion of at least three years but less than 10 years of allowable service.

Annual Annuity determined as for Normal Retirement, considering allowable service and salary to actual retirement.

12. Disability Benefit

In event of disability, which renders member unable to perform the duties of a police officer or fire fighter, after not less than five years of allowable service.

Annual Benefit payable to age 55 determined as for Normal Retirement, considering allowable service and salary to date of disablement, except if service is under 10 years, the benefit shall be the same as though the member had 10 years of service.

In the event of disability incurred in line of duty regardless of years of allowable service, the benefit shall be equal to 50% of "Average Salary" plus 2% of such salary for each year of allowable service in excess of 20 years.

If disability continues to age 55, the disability benefit shall terminate and the person shall be deemed to be on retirement status with an annuity in the same amount that he was previously receiving, or he may select an optional annuity.

13. Survivor or Death Benefit

In event of death of an active member, or in event of death of a disabilitant prior to age 55.

Annual Survivor Benefit to dependent spouse, of 30% of average salary during the last six months of allowable service, plus for each dependent child, 10% of such average salary. Maximum family benefit equal to 30% of such average salary, subject to the maximum limitation.

Upon the death of an annuitant who retired under the "savings clause" the surviving spouse, if otherwise eligible, is entitled to a monthly survivor benefit for life or until remarriage, equal to one-half of the original annuity paid plus 25%, maximum $125 monthly.

In the event of death of a retired annuitant and no survivor benefits are payable, the excess (if any) of his accumulated contributions not paid out in the way of annuities shall be paid to his designated beneficiary, without interest.

In case of death of a member who has no eligible surviving dependents, his accumulated contributions shall be paid to his designated beneficiary with interest thereon at 3-1/2% per annum compounded annually.

14. Separation Benefit

In event of termination after 10 years of allowable service, a deferred vested annuity payable at age 55, provided former member does not withdraw his contributions. (Said 10 years of allowable service need not represent PERA coverage only but may be in conjunction with service covered by other Minnesota funds such as those for state employees and teachers and others which has this same provision; deferred annuity is paid by each fund according to the number of years of allowable service in each fund).

Annual Annuity determined as for Normal Retirement under the provisions of the Plan at date of termination considering allowable service and salary to date of such termination, augmented by interest compounded annually from first of the month following separation from service or from July 1, 1971, whichever is later, to the date annuity begins to accrue, at the rate of 5% until January 1, 1981, and thereafter at the rate of 3%.

All former members shall be eligible to receive a refund of their accumulated contributions without interest for the first three years of membership and thereafter with interest at 3-1/2% compounded annually. (Such election is in lieu of any other benefits under the Plan.)

15. Lump Sum Payments for Retired Annuitants, Disabilitants and Surviving Spouse Receiving Payments on November 30, 1977

Any of the above whose annuity or benefit was computed under laws in effect prior to July 1, 1973, shall receive an additional lump sum payment of $250 payable December 1, 1977.

Persons receiving benefits from the Mineesota Adjustable Fixed Benefit Fund or the Retirement Fund shall receive the lump sum payment from the same fund.

16. Optional Benefits

A participant may elect to receive an equivalent actuarially reduced annuity in the form of either a 50% or 100% joint and survivor annuity.

17. Service Maximum

Except as provided below, a participant shall not be entitled to accrue service credit in excess of a cumulative total of 40 years of covered service. For any participant who, as of April 6, 1978, has covered service in excess of a cumulative total of 40 years, the service maximum provisions shall apply to years of covered service occurring after April 6, 1978.

18. Expenses

Paid by Association from retirement fund.

19. Actuarial Method

For purposes of reports to the Legislative Commission on Pensions and Retirement, costs for the Plan shall be determined on an "entry-age level normal cost" basis and 5% interest.

Basic Members

SUPPORTING EXHIBITS

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1981)

Basic Members

RESERVES

Entry Age Normal Reserves			
Retirement	$658,239,991		
Vesting	40,960,345		
Disability	40,406,923		
Survivors	24,349,526		
Refund	1,880,062		
	$765,836,847		
Less Value of Benefits to be Earned in the Future	150,914,926	$614,921,921	
Deferred Annuitants		11,382,864	
Former Members without Vested Rights		2,132,516	
Retired Members: Minnesota Fund Admitted Assets	280,005,712*		
Disability	15,300,294		
Survivors	48,170,383		
Reserve for Future Old Law Survivors	6,056,229		
Plus Net Mortality Loss Payable to Minnesota Fund	1,490,103	351,022,721	$979,460,022
Unfunded Obligation			417,158,623
Funded Obligation			$562,301,399

* Includes Annuity Stabilization Reserve. Retired Life Reserves are $288,373,430.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL REQUIREMENTS
(July 1, 1981)

Basic Members

AMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		$1,130,374,948
Obligation for Service Rendered to Date	$ 979,460,022	
Net Assets	562,301,399	
Accrued Unfunded Obligation	417,158,623	
Funding Ratio		57%
Amortization (28-Year) Requirement	28,000,742	
Covered Payroll	171,866,178	
Amortization (28-Year) Rate Requirement		16,292%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	$ 150,914,926	
Present Value of Future Payroll	1,187,060,000	
Normal Cost Rate Requirement	12.713%	
Employee Contribution Rate	8.000%	
Employer Normal Cost Rate Requirement		4.713%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		10.500%
Amortization (28-Year) Rate Requirement	16.292%	
Normal Cost Rate Requirement	4.713	
Allowance for Expenses	0.148	
Total Requirement		21.153%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		(10.653%)

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL REQUIREMENTS
(July 1, 1981)

Basic Members

AMORTIZATION RATE REQUIREMENT

	Period 10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	$417,158,623	$417,158,623	$417,158,623	$417,158,623
Amortization Requirement	54,023,950	33,473,887	27,136,767	24,311,237
Covered Payroll	171,866,178	171,866,178	171,866,178	171,866,178
Amortization Rate Requirement	31.434%	19.477%	15.789%	14.145%

ACTUARIAL BALANCE

	10-Year	20-Year	30-Year	40-Year
Employer Contribution Rate Set by Law	10.500%	10.500%	10.500%	10.500%
Amortization Rate Requirement	31.434%	19.477%	15.789%	14.145%
Normal Cost Rate Requirement	4.713	4.713	4.713	4.713
Allowance for Expenses	0.148	0.148	0.148	0.148
Total Requirement	36.295%	24.338%	20.650%	19.006%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	(25.795%)	(13.838%)	(10.150%)	(8.506%)

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

STATEMENT OF REVENUE, EXPENDITURES, CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
(Year Ending June 30, 1981)

Revenue:		
Employer Contribution	$18,685,904.13	
Member Contributions	14,291,574.50	
Transfers from Police and Fire Fund	6,890.74	
Annuity Stabilization Reserve Adjustment	10,166,791.56	
Investment Income	35,859,960.54	
Minnesota Post-Retirement Investment Fund Income	19,873,969.40	
Total Revenue		$98,885,091.17
Expenditure:		
Benefits	$40,077,172.47	
Refund of Contributions	196,786.92	
Transfer to State General Fund	298,300.84	
Administrative Expenses	469,691.03	
Total Expenditures		41,041,951.26
Increase in Assets (1981)		$57,843,139.91

EXHIBIT 39

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

ALLOCATION OF CHANGE IN ACTUARIAL RESERVES

Item	Assets	Reserves	Change in Unfunded Increase (Decrease)
Contribution Income	$32,977,479	$41,493,885[1]	$ 8,516,406
Investment Income	55,733,930[2]	25,222,913	(30,511,017)
Annuity Stabilization Reserve	10,166,792	10,166,792	-
Total Income	98,878,201	76,883,590	(21,994,611)
Benefit Payments and Transfers	(41,035,061)	(41,035,061)	-
Increase in Reserves Based on Salary Change	-	44,631,157	44,631,157
Mortality Loss	-	1,490,103	1,490,103
Other Experience Variation[3]	-	175,471	175,471
Net Change	$57,843,140	$82,145,260	$ 24,302,120

1 Normal Cost Plus Interest on Unfunded
2 Includes MPRF Income
3 Includes Actual Less Estimated Income Gain

EXHIBIT 40

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

ESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income less Reserves		$21,994,611
Estimated Sources of Change:		
Amortization Payment	$ 6,303,585	
Excess Interest (5.9% x Average Invested Assets)	31,469,410	
Contribution Rate Applied to Larger Payroll	164,210	
Deficit in Contribution Rate	(16,419,071)	21,518,134
Actual Less Estimated Gain		$ 476,477

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ACTIVE MEMBERS

Basic Members

As of July 1, 1980	16,134
New Entrants	-
Reinstated	200
Transfers	-
TOTAL	16,334
Separations:	
a. With Refund of Contributions	
(i) Death	44
(ii) Withdrawal	-93
b. With Deferred Annuity	118
c. With Disability Annuity	77
d. With Normal Retirement Annuity	721
e. With Survivor Annuity	187
TOTAL	1,054
Members as of July 1, 1981	15,280
Inactive Members*	4,389
Members Included in Entry Age Normal Cost Calculation	10,891

* Members with no contribution for 12 months or more. The resulting obligation was included with vested and inactive members.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ANNUITANTS

Basic Members

Normal Retirement Annuitants	
As of July 1, 1980	8,536
Additions During Year	839
Deletions During Year	-402
Total as of July 1, 1981	8,973
Annual Annuity - July 1, 1980	27,619,026
- July 1, 1981	31,148,399
Disability Annuitants	
As of July 1, 1980	411
Additions During Year	77
Deletions During Year	-89
Total as of July 1, 1981	399
Annual Annuity - July 1, 1980	1,886,585
- July 1, 1981	2,083,530
Survivor Annuitants	
(a) Spouse Only as of July 1, 1980	2,982
Optional Survivors as of July 1, 1980	184
Additional Spouse Only During Year*	146
Additional Optional Survivors During Year	41
Deletions During Year	-129
Total as of July 1, 1981	3,224
Annual Annuity - July 1, 1980	4,757,252
- July 1, 1981	5,218,186
(b) Survivor with Children as of July 1, 1980	163
Additions During Year	15
Deletions During Year*	-21
Total as of July 1, 1981	157
Annual Annuity - July 1, 1980	446,762
- July 1, 1981	479,205
(c) Children as of July 1, 1980	287
Additions During Year	-
Deletions During Year	-37
Total as of July 1, 1981	250
Annual Annuity - July 1, 1980	319,312
- July 1, 1981	302,707
Deferred Vested Members	
As of July 1, 1980	1,236
Additions During Year	118
Deletions During Year	-17
Total as of July 1, 1981	1,337

* Includes Survivors with children at initial commencement date who have no dependent children at June 30, 1981.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

Retired Prior to July 1, 1973

Payable From Adjustable Fixed Benefit Fund

	MALE			FEMALE	
AGE	NUMBER	AV	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
66	2		$ 490.00	-	$ -
67	2		304.70	3	320.74
68	3		495.09	4	633.03
69	6		983.85	8	866.84
70	13		2,365.37	15	2,492.85
71	17		3,719.72	27	4,357.19
72	32		6,100.64	25	4,446.56
73	76		18,110.91	57	9,599.93
74	152		34,164.08	125	20,017.89
75	127		28,991.94	134	21,796.52
76	133		30,064.84	106	17,633.80
77	106		24,903.11	119	20,104.55
78	114		26,107.09	112	18,439.77
79	130	$224.22	29,226.09	126	22,166.43
80	124		28,139.64	89	15,283.12
81	116		26,273.15	93	16,833.72
82	112		24,832.65	95	16,334.03
83	90		19,381.03	70	13,883.96
84	88		17,425.78	66	14,068.84
85	92		21,652.77	66	12,641.55
86	80		18,021.05	58	9,747.33
87	78		17,204.91	40	7,246.97
88	48		10,826.30	34	5,433.85
89	37		8,794.70	36	5,525.96
90	42		9,308.34	28	5,690.56
91	20		4,694.80	22	3,726.76
92	24		4,876.01	18	3,516.85
93	17		3,765.33	7	1,142.40
94	13		2,185.07	12	1,642.77
95	6		958.33	4	1,272.88
96	4		678.39	5	692.88
97	4		950.69	4	694.53
98	7		1,291.04	2	233.31
99	1		74.74	3	640.97
100	1		177.61	-	-
101	-		-	1	153.32
103	1		179.23	-	-
TOTALS	1,918		$427,724.99	1,614	$279,282.66

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

Retired Under Law in Force July 1, 1973 and Subsequent

Payable From Adjustable Fixed Benefit Fund

	MALE		FEMALE	
AGE	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
58	3	$ 3,410.23	3	$ 912.07
59	23	12,771.96	14	5,052.33
60	19	12,423.16	29	10,760.76
61	32	17,595.29	40	10,457.23
62	43	21,900.10	61	18,362.38
63	85	52,982.62	88	20,914.93
64	137	73,344.85	109	36,027.59
65	205	110,763.08	156	45,072.42
66	290	144,211.80	271	74,961.93
67	335	147,220.55	301	89,721.59
68	287	114,115.74	291	78,847.86
69	300	120,918.01	297	72,018.60
70	252	96,471.82	232	61,603.91
71	250	94,816.56	234	50,999.11
72	211	70,338.10	205	41,652.64
73	135	49,228.38	131	25,487.07
74	54	18,751.81	47	11,014.94
75	34	10,867.95	32	6,373.31
76	26	7,832.01	15	1,420.15
77	17	4,070.33	16	3,048.57
78	18	6,848.21	14	1,702.66
79	9	1,890.33	7	967.16
80	10	5,669.25	5	836.57
81	7	5,254.62	2	193.54
82	9	1,726.86	10	1,418.95
83	6	1,331.56	2	222.04
84	2	731.97	2	172.09
85	-	-	4	634.24
86	2	1,012.36	-	-
87	2	111.31	-	-
89	1	813.25	-	-
90	1	852.92	-	-
91	1	35.44	-	-
103	-	-	1	669.00
TOTAL	2,806	$1,210,312.93	2,619	$671,525.64

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

St. Paul Bureau of Health

AGE	MALE NUMBER	MALE MONTHLY ANNUITY	FEMALE NUMBER	FEMALE MONTHLY ANNUITY
52	1	$ 399.55	-	$ -
57	-	-	1	390.94
60	-	-	1	454.06
61	-	-	1	395.75
62	-	-	1	260.08
69	-	-	1	396.56
71	-	-	1	182.77
74	2	891.60	1	495.09
78	1	501.95	-	-
79	1	479.98	-	-
80	-	-	1	503.14
81	-	-	1	497.92
83	1	502.75	-	-
85	-	-	1	501.53
TOTALS	6	$2,775.83	10	$4,077.84

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

Beneficiaries Payable from Minnesota Adjustable Fixed Benefit Fund

AGE	MALE NUMBER	MALE MONTHLY ANNUITY	FEMALE NUMBER	FEMALE MONTHLY ANNUITY
39	-	$ -	1	$ 57.97
45	1	42.24	-	-
47	-	-	1	151.83
53	-	-	1	183.62
54	-	-	2	721.85
56	-	-	1	182.91
57	-	-	6	1,206.98
59	-	-	6	2,011.06
60	-	-	5	1,014.06
61	-	-	9	2,647.15
62	1	157.69	6	1,185.63
63	1	131.72	15	3,452.04
64	-	-	13	3,225.33
65	-	-	11	3,500.79
66	-	-	12	2,427.52
67	-	-	14	5,303.38
68	1	121.33	13	2,849.77
69	-	-	10	1,938.48
70	2	320.99	11	3,659.65
71	-	-	11	2,899.92
72	-	-	10	2,801.64
73	1	330.12	9	2,137.95
74	-	-	7	1,716.19
75	1	35.26	3	177.36
76	1	148.71	5	726.09
77	1	298.08	6	2,173.95
78	1	359.85	7	1,626.23
79	1	405.44	3	431.15
80	-	-	4	578.30
81	-	-	1	381.88
82	-	-	1	114.44
83	-	-	1	494.38
84	-	-	4	712.33
85	-	-	5	1,384.35
86	-	-	2	251.57
90	-	-	2	216.70
TOTALS	12	$2,351.43	217	$54,544.45

Annuities Payable for a Certain Period Not Dependent on Age

Number	Monthly Annuity
7	$1,938.48

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

DISABILITY RETIREMENTS

AGE	MALE NUMBER	MALE MONTHLY ANNUITY	FEMALE NUMBER	FEMALE MONTHLY ANNUITY
34	2	$ 670.73	-	$ -
37	1	242.58	-	-
44	1	293.58	-	-
45	2	687.71	-	-
46	1	204.20	1	208.86
47	1	299.14	1	106.98
48	1	480.48	-	-
49	1	178.86	-	-
50	6	3,014.35	1	121.01
51	6	3,396.74	2	727.02
52	7	4,094.23	3	509.85
53	3	988.24	2	337.20
54	9	4,720.40	2	340.26
55	6	2,760.74	1	119.98
56	12	8,658.96	5	1,024.47
57	13	5,954.73	4	1,527.98
58	20	10,981.00	11	1,881.62
59	25	14,360.79	12	2,540.18
60	18	8,668.79	11	2,781.10
61	19	8,917.86	10	1,834.04
62	26	13,141.21	8	6,509.79
63	35	15,063.31	15	5,216.42
64	40	20,674.52	22	5,430.63
65	20	10,164.40	13	3,792.55
TOTALS	275	$138,617.55	124	$35,009.94

EXHIBIT 48

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

SURVIVOR ANNUITIES

FEMALE

AGE	NUMBER	MONTHLY ANNUITY	AGE	NUMBER	MONTHLY ANNUITY
30	1	$ 464.44	69	86	10,188.64
31	2	1,289.80	70	82	9,350.61
34	1	450.00	71	89	10,119.93
37	1	382.15	72	92	10,919.61
38	3	1,004.61	73	93	10,301.02
39	3	672.74	74	106	11,452.10
42	5	1,943.29	75	94	9,925.66
43	6	1,836.71	76	124	13,241.37
44	7	2,161.77	77	97	10,247.99
45	5	1,682.60	78	118	12,386.93
46	11	3,706.45	79	128	14,305.65
47	6	1,457.10	80	118	12,915.68
48	10	2,630.94	81	96	11,705.21
49	13	3,306.00	82	105	11,370.32
50	10	2,517.60	83	92	10,496.15
51	16	4,185.29	84	116	11,813.40
52	23	5,411.75	85	81	8,833.73
53	27	5,841.15	86	81	8,339.40
54	22	4,774.87	87	67	6,949.79
55	29	5,500.29	88	75	7,402.90
56	28	6,619.88	89	52	4,891.26
57	40	9,756.79	90	40	3,400.01
58	35	6,841.03	91	20	2,074.94
59	53	9,604.14	92	27	2,183.24
60	50	9,941.05	93	23	2,167.54
61	61	13,566.98	94	8	769.88
62	64	12,056.67	95	11	951.89
63	53	10,402.68	96	8	613.10
64	76	10,826.88	97	5	360.31
65	72	11,521.16	98	2	190.98
66	71	8,643.58	99	1	110.18
67	62	6,979.42	101	1	86.15
68	90	10,748.46	102	1	211.74
			TOTAL	3,095	$409,005.58

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

SURVIVOR ANNUITIES

MALE

AGE	NUMBER	MONTHLY ANNUITY
51	1	$ 213.99
52	1	106.76
55	1	315.09
60	1	397.39
61	1	397.54
62	1	158.13
63	3	339.42
65	2	614.12
66	1	166.91
67	4	622.34
68	6	977.73
69	4	349.80
70	1	338.43
72	1	171.24
73	2	174.84
75	1	131.15
76	2	125.98
77	3	248.35
78	1	136.54
79	1	143.23
80	4	399.69
82	2	93.43
83	1	27.60
85	2	159.96
86	3	132.98
TOTALS	50	$6,942.64

CHILDREN

NUMBER	MONTHLY ANNUITY
250	$25,225.60

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

CONSIDERED EARNINGS

Active Male Employees
(Age and Service as of July 1, 1981)

Age	YEARS OF SERVICE: Under 1 No.	Under 1 Earnings	1 No.	1 Earnings	2 to 4 No.	2 to 4 Earnings	5 to 9 No.	5 to 9 Earnings
Under 25	–	$ –	–	$ –	1	$ 3,366	–	$ –
25 to 29	–	–	–	–	4	26,788	–	–
30 to 34	–	–	–	–	7	59,896	1	14,737
35 to 39	–	–	–	–	2	16,297	1	22,308
40 to 44	–	–	–	–	3	27,225	5	129,658
45 to 49	–	–	–	–	2	14,018	4	78,383
50 to 54	–	–	–	–	6	105,925	–	–
55 to 59	–	–	–	–	3	51,814	3	60,291
60 to 64	–	–	–	–	8	135,530	2	55,621
65 & Up	–	–	–	–	1	1,242	3	16,902
TOTAL	–	$ –	–	$ –	37	$ 442,101	19	$ 377,900

Age	YEARS OF SERVICE: 10 to 14 No.	10 to 14 Earnings	15 to 19 No.	15 to 19 Earnings	20 to 24 No.	20 to 24 Earnings	25 to 29 No.	25 to 29 Earnings
Under 25	–	$ –	–	$ –	–	$ –	–	$ –
25 to 29	–	–	–	–	–	–	–	–
30 to 34	24	456,011	10	199,424	–	–	–	–
35 to 39	98	1,920,691	190	3,752,316	16	339,634	1	19,052
40 to 44	129	2,258,355	361	6,880,254	167	3,262,531	16	343,252
45 to 49	132	2,113,147	395	7,473,710	309	6,407,678	150	3,074,555
50 to 54	124	1,982,969	380	6,662,843	368	7,088,780	305	6,239,947
55 to 59	126	1,872,289	388	6,547,106	422	7,765,900	376	7,333,878
60 to 64	93	1,320,227	341	5,630,988	327	5,622,942	283	5,322,885
65 & Up	35	453,030	87	1,302,985	81	1,114,343	69	1,129,093
TOTAL	761	$12,376,719	2,152	$38,449,646	1,690	$31,601,808	1,200	$ 23,462,662

Age	YEARS OF SERVICE: 30 to 34 No.	30 to 34 Earnings	35 to 39 No.	35 to 39 Earnings	40 & Up No.	40 & Up Earnings	All No.	All Earnings
Under 25	–	$ –	–	$ –	–	$ –	1	$ 3,366
25 to 29	–	–	–	–	–	–	4	26,788
30 to 34	–	–	–	–	–	–	42	730,068
35 to 39	–	–	–	–	–	–	308	6,070,298
40 to 44	–	–	–	–	–	–	681	12,901,275
45 to 49	12	257,819	–	–	–	–	1,004	19,419,310
50 to 54	97	2,101,291	1	28,103	–	–	1,281	24,209,858
55 to 59	230	4,846,331	26	605,223	3	44,087	1,577	29,126,919
60 to 64	161	3,271,885	29	571,911	8	177,708	1,252	22,109,717
65 & Up	32	502,155	5	85,458	2	57,772	315	4,662,980
TOTAL	532	$10,979,481	61	$ 1,290,695	13	$ 279,567	6,465	$119,260,579

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

CONSIDERED EARNINGS

Active Female Employees
(Age and Service as of July 1, 1981)

YEARS OF SERVICE

Age	Under 1 No.	Under 1 Earnings	1 No.	1 Earnings	2 to 4 No.	2 to 4 Earnings	5 to 9 No.	5 to 9 Earnings
Under 25	-	$ -	-	$ -	2	$ 7,068	-	$ -
25 to 29	-	-	-	-	7	27,537	-	-
30 to 34	-	-	-	-	7	71,718	-	-
35 to 39	-	-	-	-	6	44,845	1	3,652
40 to 44	-	-	-	-	-	-	4	43,437
45 to 49	-	-	-	-	2	8,109	2	12,901
50 to 54	-	-	-	-	4	14,009	5	50,542
55 to 59	-	-	-	-	5	23,604	7	114,322
60 to 64	-	-	-	-	4	41,531	7	62,320
65 & Up	-	-	-	-	2	16,662	2	18,304
TOTAL	-	$ -	-	$ -	38	$ 255,083	28	$ 305,478

YEARS OF SERVICE

Age	10 to 14 No.	10 to 14 Earnings	15 to 19 No.	15 to 19 Earnings	20 to 24 No.	20 to 24 Earnings	25 to 29 No.	25 to 29 Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 29	1	3,479	-	-	-	-	-	-
30 to 34	29	391,521	24	326,290	-	-	-	-
35 to 39	45	718,930	121	1,944,540	10	154,351	-	-
40 to 44	89	1,018,068	113	1,763,830	55	870,647	11	175,407
45 to 49	195	1,942,337	184	2,553,331	56	973,295	24	388,022
50 to 54	341	3,058,133	353	4,137,002	111	1,603,164	52	837,300
55 to 59	366	3,331,201	483	5,573,988	204	2,709,104	76	1,155,362
60 to 64	262	2,194,053	413	4,579,571	218	2,750,514	92	1,337,748
65 & Up	80	523,149	96	995,769	53	531,460	21	295,583
TOTAL	1,408	$13,180,871	1,787	$21,874,321	707	$9,592,535	276	$ 4,189,422

YEARS OF SERVICE

Age	30 to 34 No.	30 to 34 Earnings	35 to 39 No.	35 to 39 Earnings	40 & Up No.	40 & Up Earnings	All No.	All Earnings
Under 25	-	$ -	-	$ -	-	$ -	2	$ 7,068
25 to 29	-	-	-	-	-	-	8	31,016
30 to 34	-	-	-	-	-	-	60	789,529
35 to 39	-	-	-	-	-	-	183	2,866,318
40 to 44	-	-	-	-	-	-	272	3,871,389
45 to 49	7	103,916	-	-	-	-	470	5,981,911
50 to 54	34	614,992	6	94,628	-	-	906	10,409,770
55 to 59	43	795,370	16	283,129	1	14,679	1,201	14,000,759
60 to 64	34	594,053	12	227,540	6	108,105	1,048	11,895,435
65 & Up	10	155,975	7	126,716	5	88,786	276	2,752,404
TOTAL	128	$ 2,264,306	41	$ 732,013	12	$ 211,570	4,426	$52,605,599

EXHIBIT 52

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

BASIC MEMBERS

SUMMARY OF PLAN

1. Name

Public Employees Retirement Association.

2. Type of Plan

Self-insured, managed by a 15-member Board of Trustees.

3. Employer Included

Any county, city, 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 law.

4. Employees Included

All full time and certain part time employees who did not elect coverage under Section 218(d) of the Social Security Act and who are not contributing to any other local retirement plan.

5. Allowable Service

All periods of public service during which salary deductions were made or for which payments in lieu of salary deductions were deposited, including authorized leaves of absence, sick leaves, military leaves and layoffs.

6. Considered Salary

Salary means the periodical total compensation of any public employee before deductions for deferred compensation or supplemental retirement plans, and also means wages and includes net income from fees.

7. Employee Contributions

After July 1, 1973, 8% of considered salary.

8. Employer Contributions

An amount equal to the Employee Contributions plus 2-1/2% of considered salary.

9. Normal Retirement Annuity

After attainment of age 65 and completion of at least 10 years of allowable service.

"Average salary" means an amount equivalent to the highest salary upon which contributions were paid for any five successive years of allowable service.

Annuity equal to:

(a) 2% of "Average Salary" for each of the first years of allowable service plus

(b) 2-1/2% of "Average Salary" for each year of service over 10 years.

10. Late Retirement Annuity

Annual Annuity determined as for Normal Retirement, considering allowable service and salary to actual retirement.

11. Early Retirement Annuity

After attainment of age 58 and completion of 20 years of allowable service, or attainment of age 62 and completion of 10 years of allowable service.

Annual Annuity determined as for Normal Retirement considering allowable service and salary to actual retirement and reduced so that the reduced annuity shall be the actuarial equivalent of the annuity which would be payable if the member deferred receipt of the annuity from the date of retirement to age 65 if service is less than 30 years, or to age 62 if service is 30 or more years.

12. Special Early Retirement Annuity

After attainment of age 62 and completion of 30 years of allowable service.

Annual Annuity determined as for Normal Retirement considering allowable service and salary to actual retirement without reduction for such early retirement.

13. Proportionate Annuity

At age 65 or earlier under a mandatory retirement statute or uniformly applied compulsory retirement policy and completion of at least three years but less than 10 years of allowable service.

Annual Annuity determined as for Normal Retirement, considering allowable service and salary to actual retirement.

14. Disability Benefit

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

Annual Benefit payable to age 65 determined as for Normal Retirement, considering allowable service and salary to date of disablement, plus a supplement equal to $5 for each year that age at disablement is less than 65, maximum supplement $50. Total Benefit is limited to 100% of "Average Salary."

If disability continues to age 65, the disability benefit shall terminate and the person shall be deemed to be on retirement status and may elect to receive the greater of an annuity determined as for Normal Retirement or the disability benefit he was receiving prior to age 65, or he may select an optional annuity.

Any disabilitant attaining age 65 after July 1, 1973 shall have his annuity computed in accordance with the Normal Retirement Annuity formula above.

15. Survivor or Death Benefit

In event of death of an active member after 18 months of allowable service, or in the event of death of a disabilitant prior to age 65.

Annual Survivor Benefit to dependent spouse, of 30% of average salary during the last six months of allowable service, plus for each dependent child, 10% of such average salary. Maximum family benefit equal to $450 per month. Minimum family benefit equal to 30% of such average salary subject to the maximum limitation.

In the event of death of a retired annuitant and no survivor benefits are payable, the excess (if any) of his accumulated contributions not paid out in the way of annuities shall be paid to his designated beneficiary, without interest.

Upon the death of an active member after age 58 and completion of 20 or more years of allowable service or if the member has made application for an annuity or disability benefit and dies prior to commencement of his benefit, the surviving spouse (in lieu of any other survivor benefit) may elect to receive an annuity equal to the 50% joint and survivor annuity the member could have qualified for on the date of his death.

In case of death of a member who has no eligible surviving dependents, his accumulated contributions shall be paid to his designated beneficiary with interest thereon at 3-1/2% per annum compounded annually.

16. Separation Benefit

In event of termination after 10 years of allowable service, a deferred vested annuity payable at age 65, or earlier if otherwise eligible, provided former member does not withdraw his contributions. (Said 10 years of allowable service need not represent PERA coverage only but may be in conjunction with service covered by other Minnesota funds such as those for state employees and teachers and others which has this same provision;

deferred annuity is paid by each fund according to the number of years of allowable service in each fund).

Annual Annuity determined as for Normal Retirement under the provisions of the Plan at date of termination considering allowable service and salary to date of such termination, augmented by interest compounded annually from first of the month following separation from service or from July 1, 1971, whichever is later, to the date annuity begins to accrue, at the rate of 5% until January 1, 1981, and thereafter at the rate of 3%.

All former members shall be eligible to receive a refund of their accumulated contributions without interest for the first three years of membership and thereafter with interest at 3-1/2% compounded annually. (Such election is in lieu of any other benefits under the Plan.)

17. Lump Sum Payments for Retired Annuitants, Disabilitants and Surviving Spouse Receiving Payments on November 30, 1977

Any of the above whose annuity or benefit was computed under laws in effect prior to July 1, 1973, shall receive an additional lump sum payment of $250 payable December 1, 1977.

Persons receiving benefits from the Mineesota Adjustable Fixed Benefit Fund or the Retirement Fund shall receive the lump sum payment from the same fund.

18. Optional Benefits

A participant may elect to receive an equivalent actuarially reduced annuity in the form of either a 50% or 100% joint and survivor annuity.

19. Service Maximum

Except as provided below, a participant shall not be entitled to accrue service credit in excess of a cumulative total of 40 years of covered service. For any participant who, as of April 6, 1978, has covered service in excess of a cumulative total of 40 years, the service maximum provisions shall apply to years of covered service occurring after April 6, 1978.

20. Expenses

Paid by Association from retirement fund.

21. Actuarial Method

For purposes of reports to the Legislative Retirement Study Commission, costs for the Plan shall be determined on an "entry-age level normal cost" basis and 5% interest.

Coordinated Members

SUPPORTING EXHIBITS

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

FINANCIAL BALANCE SHEET
(Year Commencing July 1, 1981)

Coordinated Members

RESERVES

Entry Age Normal Reserves			
Retirement	$533,905,965		
Vesting	105,862,223		
Disability	35,679,534		
Survivors	10,056,139		
Refund	62,855,472		
	$748,359,333		
Less Value of Benefits to be Earned in the Future	361,474,125	$386,885,208	
Deferred Annuitants		1,579,298	
Former Members without Vested Rights		5,575,517	
Retired Members: Minnesota Fund Admitted Assets	51,329,376*		
Disability	2,404,657		
Plus Net Mortality Loss Payable to Minnesota Fund	264,502	53,998,535	$448,038,558
Unfunded Obligation			(91,507,937)
Funded Obligation			$539,546,495

* Includes Annuity Stabilization Reserve. The Retired Life Reserves are $52,863,308.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL REQUIREMENTS
(July 1, 1981)

Coordinated Members

AMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		$809,512,683
Obligation for Service Rendered to Date	$ 448,038,558	
Net Assets	539,546,495	
Accrued Unfunded Obligation	(91,507,937)	
Funding Ratio		120%
Amortization (28-Year) Requirement	(6,142,244)	
Covered Payroll	865,181,777	
Amortization (28-Year) Rate Requirement		(0.710%)

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	$ 361,474,125	
Present Value of Future Payroll	5,188,793,600	
Normal Cost Rate Requirement	6.966%	
Employee Contribution Rate	4.000	
Employer Normal Cost Rate Requirement		2.966%

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		5.500%
Amortization (28-Year) Rate Requirement	(0.710%)	
Normal Cost Rate Requirement	2.966	
Allowance for Expenses	0.148	
Total Requirement		2.404%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		3.096%

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL REQUIREMENTS
(July 1, 1981)

Coordinated Members

AMORTIZATION RATE REQUIREMENT

	Period 10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	$(91,507,937)	$(91,507,937)	$(91,507,937)	$(91,507,937)
Amortization Requirement	(11,850,696)	(7,342,834)	(5,952,723)	(5,332,914)
Covered Payroll	865,181,777	865,181,777	865,181,777	865,181,777
Amortization Rate Requirement	(1.370%)	(0.849%)	(0.688%)	(0.616%)

ACTUARIAL BALANCE

	10-Year	20-Year	30-Year	40-Year
Employer Contribution Rate Set by Law	5.500%	5.500%	5.500%	5.500%
Amortization Rate Requirement	(1.370%)	(0.849%)	(0.688%)	(0.616%)
Normal Cost Rate Requirement	2.966	2.966	2.966	2.966
Allowance for Expenses	0.148	0.148	0.148	0.148
Total Requirement	1.744%	2.265%	2.426%	2.498%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	3.756%	3.235%	3.074%	3.002%

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

STATEMENT OF REVENUE, EXPENDITURES, CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
(Year Ending June 30, 1981)

Revenue:		
Employer Contributions	$47,322,138.63	
Member Contributions	34,422,549.15	
Annuity Stabilization Reserve Adjustment	1,690,270.68	
Investment Income	50,978,426.49	
Minnesota Post-Retirement Investment Fund Income	3,527,748.60	
Total Revenue		$137,941,133.55
Expenditure:		
Benefits	$ 5,843,786.48	
Refund of Contributions	9,894,849.97	
Transfer to State General Fund	43,496.24	
Administrative Expense	1,306,538.40	
Total Expenditures		17,088,671.09
Increase in Assets (1981)		$120,852,462.46

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

ALLOCATION OF CHANGE IN ACTUARIAL RESERVES

Item	Assets	Reserves	Change in Unfunded Increase (Decrease)
Contribution Income	$ 81,744,688	$49,937,846[1]	$(31,806,842)
Investment Income	54,506,175[2]	20,934,702	(33,571,473)
Annuity Stabilization Reserve	1,690,271	1,690,271	-
Total Income	137,941,134	72,562,819	(65,378,315)
Benefit Payments and Transfer	(17,088,671)	(17,088,671)	-
Increase in Reserves Based on Salary Change	-	30,271,414	30,271,414
Mortality Loss	-	264,502	264,502
Other Experience Variation[3]	-	(3,156,096)	(3,156,096)
Net Change	$120,852,463	$82,853,968	$(37,998,495)

1 Normal Cost Plus Interest on the Unfunded
2 Includes MPRF Income
3 Includes Actual Less Estimated Income Gain

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

ESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income less Reserves		$65,378,315
Estimated Sources of Gain:		
Excess Interest (5.9% x Average Invested Assets)	$28,268,096	
Contribution Rate Applied to Larger Payroll	10,056,820	
Excess Contribution Rate	21,929,176	60,254,092
Actual Less Estimated Gain		$ 5,124,223

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ACTIVE MEMBERS

Coordinated Members

As of July 1, 1980	77,653
New Entrants	13,368
Reinstated	4,158
Transfer	-
TOTAL	95,179
Separations:	
a. With Refund of Contributions	
(i) Death	91
(ii) Withdrawal	13,712
b. With Deferred Annuity	71
c. With Disability Annuity	74
d. With Normal Retirement Annuity	535
e. With Survivor Annuity	22
TOTAL	14,505
Members as of July 1, 1981	80,674
Inactive Members*	3,708
Members Included in Entry Age Normal Cost Calculation	76,966

* Members with no contributions for 12 months or more. The resulting obligation was included with vested and inactive members.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ANNUITANTS

Coordinated Members

Normal Retirement Annuitants	
As of July 1, 1980	2,760
Additions During Year	606
Deletions During Year	-87
Total as of July 1, 1981	3,279
Annual Annuity - July 1, 1980	$4,430,914
- July 1, 1981	$5,389,918
Disability Annuitants	
As of July 1, 1980	211
Additions During Year	60
Deletions During Year	-46
Total as of July 1, 1981	225
Annual Annuity - July 1, 1980	322,179
- July 1, 1981	317,149
Survivor Annuitants	
Spouse Only	
As of July 1, 1980	82
Additons During Year	24
Deletions During Year	-
Total as of July 1, 1981	106
Annual Annuity - July 1, 1980	$ 105,793
- July 1, 1981	$ 142,982
Deferred Vested Members	
As of July 1, 1980	303
Additions During Year	71
Deletions During Year	-3
Total as of July 1, 1981	371

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

Retired Prior to July 1, 1973

	MALE		FEMALE	
AGE	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
65	1	$ 631.04	-	$ -
66	1	124.03	-	-
70	-	-	1	54.13
71	3	290.24	2	188.33
72	2	336.05	4	685.28
73	26	2,227.43	13	1,547.45
74	66	6,918.38	31	3,225.28
75	60	6,420.64	30	3,058.26
76	72	7,062.72	32	3,118.94
77	65	5,789.68	24	2,301.81
78	63	6,336.11	22	3,122.21
79	25	2,155.07	19	1,543.47
80	19	1,484.59	9	1,030.28
81	18	2,460.66	8	1,234.47
82	7	1,041.04	8	1,407.99
83	5	624.12	4	260.60
84	4	621.60	1	89.82
85	5	425.41	2	151.77
86	2	637.90	3	539.88
87	4	530.28	-	-
88	1	80.40	2	442.02
89	3	217.33	-	-
90	1	52.87	1	191.95
91	2	309.31	-	-
TOTALS	455	$46,776.90	216	$24,193.94

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

Retired Under Law in Force July 1, 1973 and Subsequent

AGE	MALE NUMBER	MALE MONTHLY ANNUITY	FEMALE NUMBER	FEMALE MONTHLY ANNUITY
59	1	$ 533.29	-	$ -
60	4	877.24	3	728.73
61	5	1,937.49	4	981.13
62	13	2,277.58	12	1,367.66
63	58	11,914.90	45	5,627.82
64	66	11,107.76	49	4,493.19
65	89	17,670.93	57	5,850.66
66	208	37,827.69	124	15,918.92
67	183	28,652.44	118	11,606.37
68	217	33,008.30	119	12,081.18
69	168	26,223.99	95	10,506.60
70	169	28,032.50	96	11,337.30
71	149	22,399.25	87	9,049.14
72	134	20,446.71	59	7,950.15
73	85	13,309.48	36	5,515.44
74	34	4,921.71	20	1,681.12
75	15	2,802.76	13	816.30
76	22	2,778.96	6	727.43
77	7	582.64	4	195.21
78	10	1,060.23	2	101.69
79	2	116.12	-	-
80	2	68.52	1	284.65
81	3	389.24	1	84.47
82	3	360.20	1	176.21
83	2	46.70	-	-
84	2	1,163.64	1	13.91
86	1	369.65	-	-
89	1	20.98	-	-
101	-	-	1	50.47
102	1	142.34	-	-
TOTALS	1,654	$271,043.24	954	$107,145.75

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

Payable From Adjustable Fixed Benefit Fund

SURVIVOR ANNUITIES

FEMALE

AGE	NUMBER	MONTHLY ANNUITY
37	1	$ 34.20
39	1	351.10
54	-	-
55	1	61.03
56	1	92.10
57	3	281.98
58	1	50.12
59	1	253.78
60	3	316.32
61	7	768.81
62	2	330.90
63	6	609.11
64	11	1,978.30
65	5	396.68
66	9	963.62
67	6	823.87
68	3	138.74
69	5	381.43
70	5	428.75
71	4	467.83
72	4	308.25
73	2	242.21
74	3	303.75
75	3	354.97
76	2	76.33
77	2	339.27
78	2	128.29
80	1	199.67
81	2	239.10
85	1	59.96
89	1	142.86
TOTALS	98	$11,123.33

MALES

AGE	NUMBER	MONTHLY ANNUITY
54	1	$ 110.77
67	1	102.01
68	1	266.84
70	1	42.21
	4	$ 521.83

Annuities Payable for a Certain Period Not Dependent on Age

NUMBER	MONTHLY ANNUITY
4	$270.03

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

DISABILITY RETIREMENTS

AGE	MALE NUMBER	MALE MONTHLY ANNUITY	FEMALE NUMBER	FEMALE MONTHLY ANNUITY
35	1	$ 83.99	-	$ -
39	-	-	1	46.70
41	1	1.50	-	-
47	1	114.40	-	-
48	2	337.44	-	-
49	2	195.68	1	101.29
50	1	143.53	-	-
51	3	615.50	-	-
52	3	781.92	1	55.95
53	2	423.20	2	96.58
54	5	566.96	6	168.96
55	5	519.15	3	272.89
56	6	694.27	4	223.09
57	2	253.84	6	613.32
58	9	1,280.92	4	778.16
59	13	1,457.81	7	258.35
60	11	1,386.47	6	682.17
61	9	1,362.03	3	139.58
62	17	1,939.20	9	531.50
63	17	3,141.68	11	946.72
64	22	3,005.49	8	562.19
65	14	1,930.93	7	715.71
TOTALS	146	$20,235.91	79	$6,193.16

EXHIBIT 65

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

CONSIDERED EARNINGS

All Male Employees
(Age and Service as of July 1, 1981)

YEARS OF SERVICE

Age	Under 1		1		2 to 4		5 to 9	
	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	761	$ 6,521,694	589	$ 6,399,243	519	$ 6,617,622	42	$ 620,355
25 to 29	786	8,019,966	862	10,953,823	1,421	20,883,287	935	14,376,100
30 to 34	1,247	11,545,548	743	9,886,253	1,411	23,271,422	1,854	32,659,128
35 to 39	315	3,641,168	334	4,653,885	758	12,610,299	1,143	21,684,046
40 to 44	219	2,497,607	237	3,284,788	476	7,251,518	716	12,432,267
45 to 49	170	1,883,147	197	2,476,308	408	5,774,595	644	10,561,492
50 to 54	173	1,845,964	180	2,218,552	400	5,551,670	699	10,874,478
55 to 59	140	1,341,825	158	1,746,964	353	4,670,446	673	9,767,201
60 to 64	98	722,431	105	839,210	279	3,599,039	560	7,547,016
65 & Up	51	280,857	61	357,437	100	629,721	246	2,163,794
TOTAL	3,960	$38,300,207	3,466	$42,816,463	6,125	$90,859,619	7,512	$122,065,522

YEARS OF SERVICE

Age	10 to 14		15 to 19		20 to 24		25 to 29	
	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 29	36	582,301	1	25,304	-	-	-	-
30 to 34	497	9,432,925	21	460,145	-	-	-	-
35 to 39	779	15,853,023	71	1,546,550	7	135,564	-	-
40 to 44	620	12,316,002	135	3,026,390	36	847,472	5	119,343
45 to 49	565	10,663,245	122	2,881,662	112	2,907,638	12	260,774
50 to 54	624	10,659,565	155	3,190,461	88	2,125,175	56	1,527,022
55 to 59	628	10,499,300	165	2,999,242	107	2,190,226	74	1,711,054
60 to 64	529	8,542,711	188	3,320,237	140	2,596,310	64	1,291,989
65 & Up	146	1,769,048	34	459,195	23	397,767	6	126,066
TOTAL	4,424	$80,318,120	892	$17,909,186	513	$11,200,152	217	$ 5,036,248

YEARS OF SERVICE

Age	30 to 34		35 to 39		40 & Up		All	
	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	-	$ -	-	$ -	-	$ -	1,911	$ 20,158,914
25 to 29	-	-	-	-	-	-	4,041	54,840,781
30 to 34	-	-	-	-	-	-	5,773	87,255,421
35 to 39	-	-	-	-	-	-	3,407	60,124,535
40 to 44	-	-	-	-	-	-	2,444	41,775,387
45 to 49	5	137,483	-	-	-	-	2,235	37,546,344
50 to 54	17	438,593	2	56,049	-	-	2,394	38,487,529
55 to 59	33	860,969	11	279,912	2	58,010	2,344	36,125,149
60 to 64	31	691,363	12	323,220	1	34,893	2,007	29,508,419
65 & Up	1	23,053	-	-	2	53,131	670	6,260,069
TOTAL	87	$ 2,151,461	25	$ 659,181	5	$ 146,034	27,226	$412,082,548

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

CONSIDERED EARNINGS

All Female Employees
(Age and Service as of July 1, 1981)

Age	YEARS OF SERVICE Under 1 No.	Under 1 Earnings	1 No.	1 Earnings	2 to 4 No.	2 to 4 Earnings	5 to 9 No.	5 to 9 Earnings
Under 25	2,136	$15,989,226	1,523	$12,888,915	1,555	$ 14,312,641	154	$ 1,537,742
25 to 29	1,492	12,729,179	1,390	13,714,963	2,423	36,683,921	1,668	19,076,653
30 to 34	1,317	9,578,546	1,235	10,473,786	1,982	20,424,791	1,713	22,181,532
35 to 39	1,210	8,128,670	1,164	8,606,010	1,986	17,262,413	1,564	16,881,717
40 to 44	818	5,080,828	892	6,355,843	1,829	14,943,858	2,058	18,836,408
45 to 49	559	3,474,696	643	4,608,922	1,311	10,454,262	2,036	17,763,459
50 to 54	384	2,383,803	443	3,047,723	1,013	8,117,743	1,779	15,351,375
55 to 59	259	1,506,774	296	1,978,312	711	5,242,151	1,442	12,042,628
60 to 64	137	697,583	154	901,001	369	2,584,377	901	6,968,246
65 & Up	49	240,298	88	376,696	121	626,343	337	2,031,365
TOTAL	8,361	$59,809,603	7,828	$62,952,171	13,300	$120,652,500	13,632	$132,671,125

Age	YEARS OF SERVICE 10 to 14 No.	10 to 14 Earnings	15 to 19 No.	15 to 19 Earnings	20 to 24 No.	20 to 24 Earnings	25 to 29 No.	25 to 29 Earnings
Under 25	-	$ -	-	$ -	-	$ -	-	$ -
25 to 29	80	982,213	-	-	-	-	-	-
30 to 34	527	7,493,268	10	138,625	-	-	-	-
35 to 39	617	9,543,990	52	906,529	-	-	-	-
40 to 44	673	8,080,455	55	827,631	16	297,261	3	48,903
45 to 49	928	9,828,635	58	816,445	9	169,813	4	51,778
50 to 54	1,054	11,117,875	103	1,448,290	14	237,758	9	140,031
55 to 59	1,058	10,644,149	122	1,689,037	28	386,594	17	302,017
60 to 64	683	6,721,228	88	1,109,668	36	528,526	16	287,051
65 & Up	264	1,815,282	32	415,229	18	190,362	7	80,009
TOTAL	5,884	$66,227,095	520	$ 7,351,454	121	$ 1,810,314	56	$ 909,789

Age	YEARS OF SERVICE 30 to 34 No.	30 to 34 Earnings	35 to 39 No.	35 to 39 Earnings	40 & Up No.	40 & Up Earnings	All No.	All Earnings
Under 25	-	$ -	-	$ -	-	$ -	5,368	$ 44,728,524
25 to 29	-	-	-	-	-	-	7,053	73,186,929
30 to 34	-	-	-	-	-	-	6,784	70,290,548
35 to 39	-	-	-	-	-	-	6,593	61,329,329
40 to 44	-	-	-	-	-	-	6,344	54,471,187
45 to 49	1	34,396	-	-	-	-	5,549	47,202,406
50 to 54	5	84,756	-	-	-	-	4,804	41,929,354
55 to 59	9	168,435	7	123,819	-	-	3,929	34,083,916
60 to 64	8	158,437	3	54,771	3	59,342	2,398	20,070,230
65 & Up	1	12,162	-	-	1	19,060	918	5,806,806
TOTAL	24	$ 458,186	10	$ 178,590	4	$ 78,402	49,740	$453,099,229

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

COORDINATED MEMBERS

SUMMARY OF PLAN

1. Name

Public Employees Retirement Association.

2. Type of Plan

Self-insured, managed by a 15-member Board of Trustees.

3. Employer Included

Any county, city, 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 law.

4. Employees Included

All full time and certain part time employees who either elected coverage under Section 218(d) of the Social Security Act, or were automatically so covered by reason of being new employees, and who are not contributing to any other local retirement plan.

5. Allowable Service

All periods of public service during which salary deductions were made or for which payments in lieu of salary deductions were deposited, including authorized leaves of absence, sick leaves, military leaves and layoffs.

6. Considered Salary

Salary means the periodical total compensation of any public employee before deductions for deferred compensation or supplemental retirement plans, and also means wages and includes net income from fees.

7. Employee Contributions

After July 1, 1973, 4% of considered salary.

8. Employer Contributions

An amount equal to the Employee Contributions plus 1-1/2% of considered salary.

9. Normal Retirement Annuity

After attainment of age 65 and completion of at least 10 years of allowable service.

"Average salary" means an amount equivalent to the highest salary upon which contributions were paid for any five successive years of allowable service.

Annuity equal to:

(a) 1% of "Average Salary" for each of the first 10 years of allowable service plus

(b) 1-1/2% of "Average Salary" for each year of service over 10 years.

10. Late Retirement Annuity

Annual Annuity determined as for Normal Retirement, considering allowable service and salary to actual retirement.

11. Early Retirement Annuity

After attainment of age 58 and completion of 20 years of allowable service, or attainment of age 62 and completion of 10 years of allowable service.

Annual Annuity determined as for Normal Retirement considering allowable service and salary to actual retirement and reduced so that the reduced annuity shall be the actuarial equivalent of the annuity which would be payable if the member deferred receipt of the annuity from the date of retirement to age 65 if service is less than 30 years, or to age 62 if service is 30 or more years.

12. Special Early Retirement Benefit

After attainment of age 62 and completion of 30 years of allowable service.

Annual annuity determined as for Normal Retirement considering allowable service and salary to actual retirement without reduction for such early retirement.

13. Proportionate Annuity

At age 65 or earlier under a mandatory retirement statute or uniformly applied compulsory retirement policy and completion of at least three years but less than 10 years of allowable service.

Annual Annuity determined as for Normal Retirement, considering allowable service and salary to actual retirement.

14. Disability Benefit

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

Annual Benefit payable to age 65 determined as for Normal Retirement, considering allowable service and salary to date of disablement. Total Benefit is limited to 100% of "Average Salary."

If disability continues to age 65, the disability benefit shall terminate and the person shall be deemed to be on retirement status and may elect to receive the greater of an annuity determined as for Normal Retirement or the disability benefit he was receiving prior to age 65, or he may select an optional annuity.

15. Death Benefit

In event of death of an active member, his accumulated contributions shall be paid to his designated beneficiary with interest thereon at 3-1/2% per annum compounded annually.

In the event of death of a retired annuitant, the excess (if any) of his accumulated contributions not paid out in the way of annuities shall be paid to his designated beneficiary, without interest.

Upon the death of an active member after age 58 and completion of 20 or more years of allowable service or if the member has made application for an annuity or disability benefit and dies prior to commencement of his benefit, the surviving spouse (in lieu of any other survivor benefit) may elect to receive an annuity equal to the 50% joint and survivor annuity the member could have qualified for on the date of his death.

16. Separation Benefit

In event of termination after 10 years of allowable service, a deferred vested annuity payable at age 65, or earlier if otherwise eligible, provided former member does not withdraw his contributions. (Said 10 years of allowable service need not represent PERA coverage only but may be in conjunction with service covered by other Minnesota funds such as those for state employees and teachers and others which have this same provision; deferred annuity is paid by each fund according to the number of years of allowable service in each fund).

Annual Annuity determined as for Normal Retirement under the provisions of the Plan at date of termination considering allowable service and salary to date of such termination, augmented by interest compounded annually from first of the month following separation from service or from July 1, 1971, whichever is later, to the date annuity begins to accrue, at the rate of 5% until January 1, 1981, and thereafter at the rate of 3%.

All former members shall be eligible to receive a refund of their accumulated contributions without interest for the first three years of membership and thereafter with interest at 3-1/2% compounded annually. (Such election is in lieu of any other benefits under the Plan.)

17. Lump Sum Payments for Retired Annuitants, Disabilitants and Surviving Spouse Receiving Payments on November 30, 1977

Any of the above whose annuity or benefit was computed under laws in effect prior to July 1, 1973, shall receive an additional lump sum payment of $250 payable December 1, 1977.

Persons receiving benefits from the Minnesota Adjustable Fixed Benefit Fund or the Retirement Fund shall receive the lump sum payment from the same fund.

18. Optional Benefits

A participant may elect to receive an equivalent actuarially reduced annuity in the form of either a 50% or 100% joint and survivor annuity.

19. Service Maximum

Except as provided below, a participant shall not be entitled to accrue service credit in excess of a cumulative total of 40 years of covered service. For any participant who, as of April 6, 1978, has covered service in excess of a cumulative total of 40 years, the service maximum provisions shall apply to years of covered service occurring after April 6, 1978.

20. Expenses

Paid by Association from retirement fund.

21. Actuarial Method

For purposes of reports to the Legislative Commission on Pensions and Retirement, costs for the Plan shall be determined on an "entry-age level normal cost" basis and 5% interest.

MEMORANDUM TO: Legislative Commission on Pensions and Retirement

FROM: James R. Bordewick, F.S.A., Commission Actuary

RE: June 30, 1981 Actuarial Valuation of Public Employees Retirement Association - General Fund

DATE: March 3, 1982

The purpose of this memorandum is to review and discuss the results of the June 30, 1981 Actuarial Valuation of the Public Employees Retirement Association - General Fund. This Actuarial Valuation was prepared by Mr. Davis H. Roenisch of Compensation and Capital Incorporated.

The Actuarial Valuation was conducted using the Entry Age Normal Cost actuarial method, interest at 5%, and a salary increase assumption of 3½%, which are in accordance with Minnesota Statutes, Chapter 356.

There were no changes in the actuarial assumptions from the previous year. In addition, there were no changes in the provisions of the plan since the last Actuarial Valuation.

The General Fund consists of a Basic Group and a Coordinated Group with separate support rates. The Basic Group is a closed group (no new members) and the benefit formula is not integrated with Social Security. The Coordinated Group is an open group (new members enter this group) and the benefit formula is integrated with Social Security. The Summary of Actuarial Valuation Results shown below is for the combined groups.

SUMMARY OF ACTUARIAL VALUATION RESULTS

1. Membership	6-30-80	6-30-81	Increase	(%)
Active Members	85,860	87,857	1,997	2.3%
Inactive Members	7,927	8,097	170	2.1
Retired Members	11,296	12,252	956	8.5
Disabled Members	622	624	2	.3
Survivors and Beneficiaries	3,698	3,739	41	1.1
Deferred Annuitants	1,539	1,708	169	11.0
	110,942	114,277	3,335	3.0%

SUMMARY OF ACTUARIAL VALUATION RESULTS

2. Payroll

6-30-80:	$	930,299,069
6-30-81:		1,037,047,955
Increase:	$	106,748,886
% Increase:		11.5%

3. Annuities In Force:
Annual Basis

6-30-80:	$	39,887,823
6-30-81:		45,556,533
Increase:	$	5,668,710
% Increase:		14.2%

4. Actuarial Balance Sheet (In $1,000's)

(In $1,000's)	6-30-80	6-30-81	Increase	(%)
Accrued Liabilities				
Annuities In Force	$ 348,570	$ 405,021	$ 56,451	16.2%
Deferred Annuities	18,977	20,670	1,693	8.9
Active Members	894,952	1,001,807	106,855	11.9
	$1,262,499	$1,427,498	$ 164,999	13.1%
Assets	$ 923,152	$1,101,848	$ 178,696	19.4%
Unfunded Accrued Liability	$ 339,347	$ 325,650	$ -13,697*	-4.0%
Funding Ratio	73.1%	77.2%	4.1%	5.6%
Prospective Funding Ratio**	62.9%	68.2%	5.3%	8.4%

* Rounding results in increase not identical to that shown in (5) below.

** Assets less Accrued Liabilities for Annuites In Force divided by Accrued Liabilities for other than Annuities In Force.

5. Analysis of Decrease In Unfunded Accrued Liability

The Unfunded Accrued Liability decreased by $13,696,375 from June 30, 1980 to June 30, 1981. The items making up this decrease are shown on the next page.

5. Analysis of Decrease in Unfunded Accrued Liability

Actuarial Experience		
Interest	$64,082,490	Gain
Salary	74,902,571	Loss
Mortality: Retired Members	1,754,605	Loss
Pre-Retirement Experience	2,980,625	Gain
	$ 9,594,061	Loss
Contribution Deficiency	($23,290,436)	
	($13,696,375)	

6. Contribution Levels and Support Rates

Based on the Actuarial Valuation results, the contribution, as a percentage of payroll, which will prevent the Unfunded Accrued Liability from increasing is 9.754%. The contribution, as a percentage of payroll, which will amortize the Unfunded Accrued Liability by June 30, 2009 is 10.292%. The weighted average support rate for the Basic Group and the Coordinated Group is 10.992%.

A comparison of the funding costs and support rates, as a percentage of payroll is shown below:

	6-30-80	6-30-81
Contribution Required to Keep Unfunded Accrued Liability from Increasing		
Normal Cost	8.145%	8.036%
Expense	.148	.148
Interest	1.824	1.570
	10.117%	9.754%
Contribution Required to Amortize Unfunded Accrued Liability by June 30, 2009		
Normal Cost	8.145%	8.036%
Expense	.148	.148
Amortization	2.409	2.108
	10.702%	10.292%
Current Support*		
Member	4.735%	4.663%
Employer	4.735	4.663
Employer Additional	1.684	1.666
	11.154%	10.992%

* Weighted by payroll of the Basic Group and the Coordinated Group.

SUMMARY OF ACTUARIAL VALUATION RESULTS

6. Contribution Levels and Support Rates(cont.)

If the contribution percentages are applied to payroll as of June 30, 1981, the contribution to keep the Unfunded Accrued Liability from increasing would be $101,153,658. The contribution to amortize the Unfunded Accrued Liability by June 30, 2009 would be $106,732,976. Current support would be $113,992,311.

DISCUSSION OF ACTUARIAL VALUATION RESULTS

1. Overall, there was a 3% increase in total membership from a year ago. Payroll increased by 11.5% and average salary increased from $10,835 on June 30, 1980 to $11,804 on June 30, 1981.

   As expected, the active membership of the Basic Group decreased from 11,795 to 10,891. Average salary increased from $14,496 to $15,781.

   The active membership of the Coordinated Group increased by 2,901 from a year ago. Average salary was $10,252 on June 30, 1980 and increased to $11,241 on June 30, 1981.

2. The Unfunded Accrued Liability decreased from a year ago. Assets increased at a faster rate than Accrued Liabilities.

   The decrease in the Unfunded Accrued Liability was primarily due to the amount of contributions in excess of that required to keep the Unfunded Accrued Liability from increasing. This amount was $23,290,436 and the Unfunded Accrued Liability decreased by $13,696,375. Actuarial losses from various sources were $9,594,061.

   If analyzed separately, the Unfunded Accrued Liability for the Basic Group increased by $24,302,120 and the Unfunded Accrued Liability for the Coordinated Group decreased by $37,998,495. The increase for the Basic Group was primarily due to salary losses not offset by favorable experience and the lack of sufficient contributions. For the Coordinated Group, the decrease in the Unfunded Accrued Liability was due to exactly the opposite reasons - salary losses were offset for the most part by other favorable experience and the contribution was more than sufficient to keep the Unfunded Accrued Liability from increasing.

3. The normal cost percentage decreased slightly from a year ago. The current support rate is in excess of that required to amortize the Unfunded Accrued Liability by June 30, 2009. Based on the results of the June 30, 1981 Actuarial Valuation, the Unfunded Accrued Liability will be amortized in 15 to 16 years on the current support rates. It is important to note that the weighted average support rates shown on Page 3 of this memorandum will decrease each year due to more weighting on the Coordinated Group each year.

   If viewed separately, the support rate for the Basic Group is 18.5% and the amortization rate is 29.153%. There is a deficiency in the support of 10.653%. It is anticipated that this deficiency will increase from year to year. For 1978, 1979, and 1980, this deficiency was 7.387%, 7.657%, and 9.603%, respectively.

DISCUSSION OF ACTUARIAL VALUATION RESULTS

3. On the other hand, the support support rate for the Coordinated Group is 9.50% and the amortization rate is 6.404% which results in a sufficiency of the support rate of 3.096%.

   For the combined groups, the overall sufficiency in the support rate has been about .450% for 1978 through 1980. In 1981, this sufficiency in support rate was .700%. It is difficult to determine if this sufficiency in support rate will increase in future years. An open-end projection would be required ot make this judgement.

4. The General Fund, overall, is in a strong funding position. It is evident that the funding of the Coordinated Group is subsidizing the funding of the Basic Group. However, funding for the plan is viewed as one entity and not two entities.

CONCLUSION

The Actuarial Valuation Report complies with the requirements of Minnesota Statutes 356 with the exception of certain statistical information on average entry ages and average retirement ages. These statistics should be added to next year's report.

James R. Bordewick

James R. Bordewick, F.S.A.
Commission Actuary

MEMORANDUM TO: Legislative Commission on Pensions and Retirement

FROM: James R. Bordewick, F.S.A., Commission Actuary

RE: June 30, 1981 Actuarial Valuation of Public Employees Retirement Association - Police and Fire Fund

DATE: February 22, 1982

The purpose of this memorandum is to review and discuss the results of the June 30, 1981 Actuarial Valuation of the Public Employees Retirement Association - Police and Fire Fund. This Actuarial Valuation was prepared by Mr. Davis H. Roenisch of Compensation and Capital Incorporated.

The Actuarial Valuation was conducted using the Entry Age Normal Cost actuarial method, interest at 5%, and a salary increase assumption of 3½%, which are in accordance with Minnesota Statutes, Chapter 356.

There were no changes in the actuarial assumptions from the previous year. In addition, there were no changes in the provisions of the plan since the last Actuarial Valuation.

SUMMARY OF ACTUARIAL VALUATION RESULTS

1. Membership	6-30-80	6-30-81	Increase
Active Members	4,185	4,356	171
Inactive Members	307	310	3
Retired Members	554	593	39
Disabled Members	27	33	6
Survivors and Beneficiaries	262	263	1
Deferred Annuitants	216	213	-3
	5,551	5,768	217

2. Payroll

6-30-80: $75,851,475
6-30-81: $85,810,155

Increase: $ 9,958,680
% Increase: 13.1%

SUMMARY OF ACUARIAL VALUATION RESULTS

3. Annuities In Force:
   Annual Basis

6-30-80:	$3,378,785
6-30-81:	$3,874,616
Increase:	$ 495,831
% Increase:	14.7%

4. Actuarial Balance Sheet (In $1,000's)

	6-30-80	6-30-81	Increase	(%)
Accrued Liabilities				
Annuities In Force	$ 36,113	$ 41,848	$ 5,735	(15.9%)
Deferred Annuities	2,761	2,654	- 107	(-3.9%)
Active Members	122,850	143,432	20,582	(16.8%)
	$161,724	$187,934	$ 26,210	(16.2%)
Assets	$143,124	$174,896	$ 31,772	(22.2%)
Unfunded Accrued Liability	$ 18,600	$ 13,038	$ -5,562	-(29.9%)
Funding Ratio	88.5%	93.1%	4.6%	(5.2%)
Prospective Funding Ratio*	85.2%	91.1%	5.9%	(6.9%)

* Assets less Accrued Liabilities for Annuities In Force divided by Accrued Liabilities for other than Annuities In Force.

5. Analysis of Increase in Unfunded Accrued Liability

The Unfunded Accrued Liability decreased by $5,560,857 from June 30, 1980 to June 30, 1981. The items making up this decrease are shown below:

Actuarial Experience

Interest	$10,223,865	Gain
Salary	10,687,945	Loss
Mortality: Retired	33,338	Gain
Pre-Retirement Experience	297,027	Gain
	$ 133,715	Loss
Contribution Deficiency	($ 5,694,572)	
	($ 5,560,857)	

SUMMARY OF ACTUARIAL VALUATION RESULTS

6. Contribution Levels and Support Rates

Based on the Actuarial Valuation results, the contribution, as a percentage of payroll, which will prevent the Unfunded Accrued Liability from increasing is 16.267%. The contribution, as a percentage of payroll, which will amortize the Unfunded Accrued Liability by June 30, 2009 is 16.527%. The current support rate is 20%.

A comparison of the funding costs and support rates, as a percentage of payroll, are shown below:

	6-30-80	6-30-81
Contribution Required to Keep Unfunded Accrued Liability from Increasing		
Normal Cost	15.493%	15.418%
Expense	.089	.089
Interest	1.226	.760
	16.808%	16.267%
Contribution Required to Amortize Unfunded Accrued Liability by June 30, 2009		
Normal Cost	15.493%	15.418%
Expense	.089	.089
Amortization	1.619	1.020
	17.201%	16.527%
Current Support		
Member	8.000%	8.000%
Employer	12.000	12.000
Employer Additional	-	-
	20.000%	20.000%

If the contribution percentages are applied to payroll as of June 30, 1981, the contribution to keep the Unfunded Accrued Liability from increasing would be $13,958,738. The contribution to amortize the Unfunded Accrued Liability by June 30, 2009 would be $14,181,844. Current support would be $17,162,031.

DISCUSSION OF ACTUARIAL VALUATION RESULTS

1. There was little change in the number of total members from last year. Payroll increased by 13.1% and average salary increased from $18,125 on June 30, 1980 to $19,699 on June 30, 1981.

DISCUSSION OF ACTUARIAL VALUATION RESULTS

2. The Unfunded Accrued Liability decreased from a year ago. Assets increased faster than Accrued Liabilities.

   The decrease in the Unfunded Accrued Liability was primarily due to the amount of contributions in excess of that required to keep the Unfunded Accrued Liability from increasing. This amount was $5,694,572 and the Unfunded Accrued Liability decreased by $5,560,857. Actuarial gains and losses from the various sources was, in total, fairly small.

   The Unfunded Accrued Liability has decreased by approximately $8,000,000 since June 30, 1978. Decreases have occurred each year.

3. The normal cost percentage remained at approximately the same level as as year ago. The current support rate is in excess of that required to amortize the Unfunded Accrued Liability by June 30, 2009. Based on the results of the June 30, 1981 Actuarial Valuation, the Unfunded Accrued Liability will be amortized in three to four years on the current support rates.

4. The plan is in a strong funding position as evidenced by the funding ratios.

CONCLUSION

The Actuarial Valuation report complies with the requirements of Minnesota Statutes, Chapter 356 with the exception of certain statistical information on average entry ages and average retirement ages. These statistics should be added to the next report.

James R. Bordewick

James R. Bordewick, F.S.A.
Commission Actuary