

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL VALUATION REPORT
(Based on a June 30, 1979 Census)



FILE COPY

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

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COMPENSATION & CAPITAL INCORPORATED

125 SOUTH WACKER DRIVE

CHICAGO, ILLINOIS 60606

TELEPHONE 312 332-4420

November 20, 1979

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

Gentlemen:

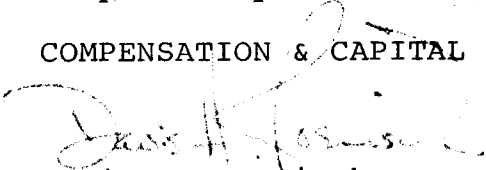
In accordance with your request, we have made an actuarial valuation of the Public Employees Retirement Association of the State of Minnesota for the year ended June 30, 1979, in order to determine the adequacy of the contributions being made to that system and to prepare the financial and actuarial 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, 1979.

Respectfully submitted,

COMPENSATION & CAPITAL INCORPORATED


Davis H. Roenisch
Enrolled Actuary No. 174

DHR:fn

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

SUMMARY OF ACTUARIAL REQUIREMENTS
(July 1, 1979)

<u>General Fund</u>	<u>Police and</u>
<u>Exhibit 8</u>	<u>Fire Fund</u>
<u>Page 21</u>	<u>Exhibit 20</u>
	<u>Page 39</u>

AMORTIZATION RATE REQUIREMENTS

Present Value of Benefits (For Both Past and Future Service)	\$1,576,449,231	\$266,771,909
Obligation for Service Rendered to Date	1,137,905,498	139,339,808
Net Assets	812,971,819	120,427,888
Accrued Unfunded Obligation	324,933,679	18,911,920
Funding Ratio	71%	86%
Amortization (30-Year) Requirement	21,137,402	1,230,248
Covered Payroll	817,578,613	68,125,873
Amortization (30-Year) Rate Requirement	<u>2.585%</u>	<u>1.806%</u>

ENTRY AGE NORMAL RATE REQUIREMENTS

Value of Benefits to be Earned in the Future	\$ 438,543,733	\$127,432,101
Present Value of Future Payroll	5,295,996,300	812,602,600
Normal Cost Rate Requirement	8.281%	15.682%
Employee Contribution Rate	3.410 *	8.000
Employer Normal Cost Rate Requirement	<u>2.794%</u>	<u>7.682%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law	6.589% *	12.000%
Amortization (30-Year) Rate Requirement	2.585%	1.806%
Normal Cost Rate Requirement	3.410	7.682
Allowance for Expenses	<u>0.148</u>	<u>0.089</u>
Total Requirement	<u>6.143%</u>	<u>9.577%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>0.446%</u>	<u>2.423%</u>

* Weighted by Covered Payroll 21.77% Basic and 78.23% Coordinated

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Value of Benefits Earned to June 30, 1979

	General Fund	
	<u>Without Augmentation*</u>	<u>With Augmentation*</u>
Benefits Payable to Retired Member and their Beneficiaries	\$325,676,053	\$325,676,053
Deferred Annuitants	11,358,954	11,358,954
Former Members without Vested Rights	8,837,682	8,837,682
Active Members:		
a. Eligible for Normal Retirement	36,935,104	36,935,104
b. Eligible for Early Retirement	104,160,592	104,160,592
c. Eligible for Deferred Benefits	303,412,224	435,995,136
d. Under 10 years service (Refund of Contributions only)	<u>59,290,304</u>	<u>59,290,304</u>
<u>Total</u>	<u>\$849,670,913</u>	<u>\$982,253,825</u>

	Police and Fire Fund	
Benefits Payable to Retired Member and their Beneficiaries	\$ 31,921,675	\$ 31,921,675
Deferred Annuitants	2,439,751	2,439,751
Former Members without Vested Rights	255,144	255,144
Active Members:		
a. Eligible for Normal Retirement	17,185,200	17,185,200
b. Eligible for Early Retirement	-	-
c. Eligible for Deferred Benefits	55,105,840	72,273,616
d. Under 10 years service (Refund of Contributions only)	<u>11,073,642</u>	<u>11,073,642</u>
<u>Total</u>	<u>\$117,981,252</u>	<u>\$135,149,028</u>

* 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.

Accounting Balance Sheet

- June 30, 1979 -

Assets

Cash:

On hand	\$ 24,099.29	
On deposit	<u>100.00</u>	\$ 24,199.29

Accounts Receivable:

State General Fund	60,605.92	
Employer contributions	27,898.02	
From Police and Fire Fund	106,190.02	
Accrued interest on bonds and Short-term notes	5,384,842.53	
Accrued dividends	1,222,955.53	
Interest on late employer contributions and delinquent payrolls	10,222.73	
Other	<u>3,573.43</u>	<u>6,816,288.18</u>

Total Current Assets

\$ 6,840,487.47

Investments:

Bonds - at amortized cost -		
U. S. Government	\$ 25,206,924.43	
Municipal	988,000.00	
Corporate	203,139,571.99	
Canadian Government insured	44,439,999.51	
G.N.M.A. (Government National Mortgage Assn.)	27,961,100.32	
Stock - common - at cost	<u>242,846,646.12</u>	<u>\$544,582,242.37</u>

Minnesota Adjustable Fixed Benefit Fund -

at omitted value	\$243,931,952.76	
Annuity stabilization	<u>13,458,007.76</u>	<u>\$257,389,960.52</u>
Deferred yield adjustment		4,157,613.46

Miscellaneous:

Office equipment - less accumulated depreciation		28,883.53
Prepaid expense		<u>12,289.61</u>

Total assets

\$813,011,476.96Current Liabilities and Reserves

Liabilities:

Accounts payable	\$ 39,658.20
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PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

EXHIBIT 1
(Continued)

Accounting Balance Sheet (Continued)

Current Liabilities and Reserves (Continued)

Reserves:

Members accumulated contributions	\$226,947,847.87
Benefits reserve	328,634,010.37
Reserve for participation in Minnesota	
Adjustable Fixed Benefit Fund	243,931,952.76
Reserve for Annuity Stabilization	<u>13,458,007.76</u>
Total Liabilities and Reserves	<u>\$813,011,476.96</u>

SOURCES AND USES OF FUNDS

- July 1, 1978 - June 30, 1979 -

<u>SOURCES</u>		<u>USES</u>	
<u>Employee Contributions</u>	\$ 39,777,097.31	<u>Refunds</u>	
<u>Employer Contributions</u>	53,583,950.71	Employee	\$ 9,728,121.90
<u>Investment Income</u>	35,570,861.06	Employer	60,983.31
<u>Investment Sales and Redemptions</u>		<u>Interest Paid on Refunds</u>	503,663.72
Bonds and Notes	349,124,543.15	<u>Net Payments to Minnesota Adjustable Fixed Benefit Fund</u>	16,532,344.36
Stocks Sold	10,165,010.20	<u>Benefits Paid</u>	
<u>Cancelled Warrants</u>	198,280.40	Retirement	28,903,204.89
<u>Interest Other than Investment Interest</u>	254,901.78	Survivor	4,761,232.53
<u>Transfers from Other State Agencies</u>	68,492.42	Disability	2,056,379.50
<u>Transfers from Police and Fire Fund</u>	5,205.15	<u>Direct Expense</u>	1,308,919.77
<u>Miscellaneous Receipts</u>	4,114.51	<u>Investment Purchases</u>	
	\$488,752,456.69	Bonds	398,788,083.22
<u>Add Cash Balance, July 1, 1978</u>	35,301.90	Stocks	25,845,034.45
<u>Less Cash Balance, July 1, 1979</u>	(24,099.29)	<u>Prepayment from St. Paul City Which was Unapplied in 1977-78 (Therefore was Shown as a Source in 1977-78, Now Being Shown as a Use)</u>	275,691.65
	<u>\$488,763,659.30</u>		<u>\$488,763,659.30</u>

Accounting Statement of Income and Expense

- July 1, 1978 to June 30, 1979 -

Income

Employer contributions 8%	\$14,124,213.27	
Employer contributions 2 $\frac{1}{2}$ %	4,414,098.44	
Employer contributions 4%	25,455,072.02	
Employer contributions 1%	9,546,441.33	
Additional employer contributions	<u>98,830.32</u>	\$ 53,638,655.38
Member contributions		39,776,777.77
Transferred from Police and Fire Fund:		
Members contributions	\$ 19,583.31	
Employer contributions	<u>8,428.16</u>	\$ 28,011.47
Realized income of the Minnesota Adjustable Fixed Benefit Fund		13,620,630.16
Investment income		35,626,699.23
Gain on sales of stock		2,502,308.17
Interest on back payments and omitted contributions		3,479.83
Interest on refunds repaid		188,545.00
Interest on delinquent employer contributions and late payrolls		62,500.85
Adjustments for prior year entries		(21,868.43)
Unit matching contributions		289.93
Other income		<u>1,960.03</u>
Total Income		\$145,427,989.79

Expense

Retirement annuities (all paid from Minnesota Adjustable Fixed Benefit Fund)	\$28,741,644.74	
Survivor Benefits Paid:		
Old Law	\$1,960,703.86	
With children	696,021.54	
Without children	<u>1,653,584.69</u>	4,310,310.09
Disability benefits Paid		2,024,043.12
Disability Survivors Paid:		
With children	\$ 124,672.82	
Without children	<u>309,599.46</u>	434,272.28
Payment of death benefits		500.00
Refunds of Deposits:		
Active members due to withdrawal	\$9,144,748.71	
Active members due to death	<u>369,372.48</u>	\$ 9,514,121.19

Accounting Income and Expense (Continued)Expense (Continued)

Refunds of Deposits: (Continued)

Deferred members due to withdrawals	\$ 59,326.83	
Deferred members due to death	8,318.07	67,644.90
Annuitant due to death	\$ 61,915.72	
Disabilitant due to death	40,801.56	
Survivor due to death	583.23	103,300.51
Interest paid on refunds		498,862.22
Refund of employer contributions		57,528.47
Transfers to Police and Fire Fund:		
Active members contributions	\$ 7,221.84	
Deferred members contributions	3,533.72	
Employer contributions	14,456.37	25,211.93
Loss on sales of bonds and notes	\$ 580,217.00	
Loss on sales of stock	843,811.17	1,424,028.17

Administrative Expenses:

Salaries	\$ 725,134.00	
Legal services	14,785.00	
Rent -		
Offices space	\$ 58,778.76	
Parking space	108.50	
Electronic data processing equipment	114,962.99	173,850.25
Maintenance service contracts -		
Main office	\$ 3,207.42	
Data processing department	4,324.00	7,531.42
Medical expense	39,575.19	
Actuarial services	17,750.00	
Telephone and telegraph	7,069.97	
Postage	101,538.93	
Travel	23,269.13	
Stationery and office supplies -		
Main office	\$20,202.02	
Data processing department	1,992.89	22,194.91
Publications and subscriptions	1,212.65	
Printing	19,171.39	
Mailing services	3,554.07	
Insurance - fire, theft		
vandalism, and surety bond	472.60	
Employee insurance and hospital-ization	39,959.72	
Employer Social Security taxes	25,088.55	
Depreciation - equipment and furniture and fixtures	6,012.31	

Accounting Income and Expense (Continued)Expense (Continued)

Administrative Expenses: (Continued)

Equipment purchased \$50.00 and under	861.12	
Tabulating and job processing services	252.73	
Public Employees Retirement Association employer con- tribution - 1978-1979	54,837.39	
Xerox machine (copying expense)	3,844.68	
Utilities charges to PERA by State Administration Department	15,874.00	
Temporary help	3,199.26	
Auditor's expense	24,538.22	
Education expense	1,126.00	
Miscellaneous expense	267.83	
Total Administrative Expense	\$1,332,971.32	
Less percentage (5.7819229%) charged to Police and Fire Fund	77,071.37	\$ 1,255,899.95

Sub-Total \$48,457,367.57

Extraordinary Entry:

Reduction in Annuity Stabilization \$ 5,087,355.38 \$53,544.722.95

Excess of Income over Deductions \$91,883,266.84

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Reconciliation of Asset Balances

- June 30, 1979 -

Asset Balance, July 1, 1978		\$702,543,188.78
Add:		
Employer contributions	\$53,638,945.31	
Employee contributions	39,776,777.77	
Employer and employee contributions transferred from Police and Fire Fund	28,011.47	
Realized income of the Minnesota Adjustable Fixed Benefit Fund	13,620,630.16	
Investment earnings	35,626,699.63	
Gains on sales of stock	2,502.308.17	
Interest on omitted contributions, delinquent employer contributions and refunds repaid	254,525.68	
Other income	1,960.03	
Net adjustment to annuity stabilization reserve account	<u>13,458,007.76</u>	
Total Additions		<u>\$158,907,865.98</u>
		\$861,451,054.76
Deduct:		
Benefits paid -		
Retirement	\$28,741,644.74	
Survivor	4,744,582.37	
Disability	2,024,043.12	
Death benefit payment	<u>500.00</u>	\$35,510,770.23
Refunds		9,742,595.07
Interest paid on refunds		498,862.22
Transfers to Police and Fire Fund		25,211.93
Adjustments for prior year entries		21,868.43
Losses on sales of bonds and stocks		1,424,028.17
Administrative expenses		<u>1,255,899.95</u>
Total Deductions		<u>48,479,236.00</u>
		\$812,971,818.76
Current Liabilities and Accounts Payable		<u>39,658.20</u>
Asset Balance, June 30, 1979		<u>\$813,011,476.96</u>

Reconciliation of Asset Balances (Continued)

Note: The adjustment figure of \$13,458,007.76 to the annuity Stabilization Reserve Account Consists of the following:

- (1) An adjustment figure of \$18,545,363.14 to the asset balance of \$613,887,437.05 shown on the 1977-78 reconciliation which would bring the Minnesota Adjustable Fixed Account to \$232,324,341.38 instead of \$213,778,978.24 (See Accounting Balance Sheet of June 30, 1978)
- (2) Reduction in the Annuity Stabilization Reserve Account of \$5,087,355.38 to conform to the balance in that account of \$13,458,007.76 at June 30, 1979.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ASSET ALLOCATION
(July 1, 1979)

	<u>Basic Fund</u>	<u>Coordinated Fund</u>	<u>General Fund Total</u>
Asset Balance July 1, 1978	\$435,727,270.22	\$266,815,918.56	\$702,543,188.78
MAFBF	184,176,657.34	29,602,320.90	213,778,978.24
General Fund	251,550,612.88	237,213,597.66	488,764,210.54
1. Employer Contributions	18,637,431.96	35,001,513.35	53,638,945.31
2. Employee Contributions	14,321,705.75	25,455,072.02	39,776,777.77
3. Transfers from Police and Fire Fund	2,799.54	-	2,799.54
4. Benefits Paid			
i. Survivors	4,744,582.37	-	4,744,582.37
ii. Disability and Death	1,773,634.56	250,908.56	2,024,543.12
5. MAFBF Annuity Stabilization Reserve	11,594,455.66	1,863,552.10	13,458,007.76
6. Refunds	70,098.95	10,171,358.34	10,241,457.29
7. Net (Sum of Items 1, 2, 3 and 5 minus 4 and 6)	37,968,077.03	51,897,870.57	89,865,947.60
8. Benefits Paid from MAFBF	25,030,551.36	3,711,093.38	28,741,644.74
9. Income from MAFBF	11,704,336.77	1,916,293.39	13,620,630.16
10. Investment Income	19,011,576.62	17,928,020.29	36,939,596.91
11. Administrative Expenses	323,731.18	932,168.77	1,255,899.95
12. Net (Sum of Items 9 and 10 minus 8 and 11)	5,361,630.85	15,201,051.53	20,562,682.38
13. Increase for Year (Sum of Items 7 and 12)	43,329,707.88	67,098,922.10	110,428,629.98
14. Asset Balance July 1, 1979	<u>\$479,056,978.10</u>	<u>\$333,914,840.66</u>	<u>\$812,971,818.76</u>
i. MAFBF	220,703,283.62	36,686,676.90	257,389,960.52
ii. General Fund	258,353,694.48	297,228,163.76	555,581,858.24

Public Employees Retirement AssociationGeneral FundACTUARIAL 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 AssociationGeneral FundMale EmployeesMORTALITY RATES
(Per 1,000 Employees)

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

Public Employees Retirement AssociationGeneral FundFemale Employees
MORTALITY RATES
 (Per 1,000 Employees)

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

Public Employees Retirement AssociationGeneral FundAll EmployeesDISABILITY RATES
(Per 1,000 Employees)

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
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 AssociationGeneral FundMale EmployeesSEPARATION RATES
(Per 1,000 Employees)

<u>Age</u>	<u>Separation</u>	<u>Age</u>	<u>Separation</u>
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 AssociationGeneral FundFemale EmployeesSEPARATION RATES
(Per 1,000 Employees)

<u>Age</u>	<u>Separation</u>	<u>Age</u>	<u>Separation</u>
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 AssociationGeneral FundALL EMPLOYEESEARNINGS PROGRESSION

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
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		

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

FINANCIAL BALANCE SHEET
 (Year Commencing July 1, 1979)

General Fund

RESERVES

Entry Age Normal Reserves

Retirement	\$ 978,903,260
Vesting	108,893,222
Disability	62,274,521
Survivors	32,535,303
Refund	<u>47,970,236</u>
	\$1,230,576,542

Less Value of Benefits

Earned in the Future	438,543,733	\$792,032,809
Deferred Annuitants		11,358,954
Former Members without Vested Rights		8,837,682

Retired Members:

Minnesota Adjustable Fixed Benefit Fund Admitted Assets	\$ 257,389,961 *
Disability	15,147,908
Survivors	45,502,901
Reserve for Future Old Law Survivors	7,383,051

Plus Net Mortality Loss
 Payable to
 Minnesota Adjustable
 Fixed Benefit Fund

252,232 325,676,053 \$1,137,905,498

Unfunded Obligation

324,933,679

Funded Obligation

\$ 812,971,819

* Includes Annuity Stabilization Reserve. Retired Life
 Reserves are \$256,041,247.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1979)General FundAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$1,576,449,231
Obligation for Service Rendered to Date	\$1,137,905,498	
Net Assets	812,971,819	
Accrued Unfunded Obligation	324,933,679	
Funding Ratio		71%
Amortization (30-Year) Requirement	\$ 21,137,402	
Covered Payroll	817,578,613	
Amortization (30-Year) Rate Requirement		<u><u>2.585%</u></u>

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	\$ 438,543,733	
Present Value of Future Payroll	5,295,996,300	
Normal Cost Rate Requirement	8.281%	
Employee Contribution Rate *	<u>4.871</u>	
Employer Normal Cost Rate Requirement		<u><u>3.410%</u></u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law*		6.589%
Amortization (30-Year) Rate Requirement	2.585%	
Normal Cost Rate Requirement	3.410	
Allowance for Expenses	<u>0.148</u>	
Total Requirement		<u><u>6.143%</u></u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		<u><u>0.446%</u></u>

* Weighted by Covered Payroll 21.77% Basic and 78.23% Coordinated

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS

(July 1, 1979)

General FundAMORTIZATION RATE REQUIREMENT

	Period			
	10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	\$324,933,679	\$324,933,679	\$324,933,679	\$324,933,679
Amortization Requirement	42,080,398	26,073,519	21,137,402	18,936,537
Covered Payroll	817,578,613	817,578,613	817,578,613	817,578,613
Amortization Rate Requirement	<u>5.147%</u>	<u>3.189%</u>	<u>2.585%</u>	<u>2.316%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law*	<u>6.589%</u>	<u>6.589%</u>	<u>6.589%</u>	<u>6.589%</u>
Amortization Rate Requirement	5.147%	3.189%	2.585%	2.316%
Normal Cost Rate Requirement	3.410	3.410	3.410	3.410
Allowance for Expenses	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>
Total Requirement	<u>8.705%</u>	<u>6.747%</u>	<u>6.143%</u>	<u>5.874%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>(2.116%)</u>	<u>(0.158%)</u>	<u>0.446%</u>	<u>0.715%</u>

* 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, 1979)

Revenue:

Employer Contributions	\$53,638,945.31	
Member Contributions	39,776,777.77	
Annuity Stabilization Reserve Adjustment	13,458,007.76	
Investment Income	36,939,596.91	
Minnesota Adjustable Fixed Benefit Fund Income	13,620,630.16	
Transfer from Police and Fire Fund	<u>2,799.54</u>	
Total Revenue		\$157,436,757.45

Expenditure:

Benefits	\$35,510,770.23	
Refund of Contributions	10,241,457.29	
Administrative Expense	<u>1,255,899.95</u>	
Total Expenditures		<u>47,008,127.47</u>

Increase in Assets (1979)		<u>\$110,428,629.98</u>
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PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral FundALLOCATION OF CHANGE IN ACTUARIAL RESERVES

<u>Item</u>	<u>Assets</u>	<u>Reserves</u>	<u>Change in Unfunded Increase (Decrease)</u>
Contribution Income	\$ 93,415,723	\$ 78,262,373 ¹	\$ (15,153,350)
Investment Income	50,560,227 ²	35,127,160	(15,433,067)
Inclusion of Annuity Stabilization Reserve	<u>13,460,807</u>	<u>13,460,807</u>	<u>-</u>
Total Income	157,436,757	126,850,340	(30,586,417)
Benefit Payments	(47,008,127)	(47,008,127)	-
Increase in Reserves Based on Salary Change	-	35,118,439	35,166,214
Mortality Loss	-	252,232	252,232
Other Experience Variation ³	<u>-</u>	<u>(625,600)</u>	<u>(625,600)</u>
Net Change	<u>\$110,428,630</u>	<u>\$114,635,059</u>	<u>\$ 4,206,429</u>

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

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral FundESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income less Reserves		\$30,586,417
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Estimated Sources of Gain:

Amortization Payment	\$10,826,855	
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Excess Interest (1.94% x Average Invested Assets)	14,700,495	
---	------------	--

Contribution Rates Applied to Larger Payroll	5,528,876	
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Deficit in Contribution Rate	<u>(1,735,480)</u>	<u>29,320,746</u>
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Actual Less Estimated Gain		<u>\$ 1,265,671</u>
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PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSGeneral Fund

As of July 1, 1978	87,403
New Entrants	13,424
Reinstated	4,423
Transfer	-
TOTAL	<u>105,250</u>

Separations:

a. With Refund of Contributions	
(i) Death	170
(ii) Withdrawal	14,390
b. With Deferred Annuity	182
c. With Disability Annuity	163
d. With Normal Retirement Annuity	905
e. With Survivor Annuity	156
f. With Disability Survivor Annuity	-
TOTAL	<u>15,966</u>
Members as of July 1, 1979	<u>89,284</u>
Inactive Members*	<u>7,619</u>
Members Included in Entry Age Normal Cost Calculation	<u>81,665</u>

* 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 ANNUITANTSGeneral FundNormal Retirement Annuitants

As of July 1, 1978	9,753
Additions During Year	1,087
Deletions During Year	- 418
<u>Total as of July 1, 1979</u>	<u>10,422</u>
Annual Annuity - July 1, 1978	\$26,280,128
- July 1, 1979	\$28,904,392

Disability Annuitants

As of July 1, 1978	582
Additions During Year	163
Deletions During Year	- 117
<u>Total as of July 1, 1979</u>	<u>628</u>
Annual Annuity - July 1, 1978	\$ 1,884,183
- July 1, 1979	\$ 1,975,712

Survivor Annuitants

(a) Spouse Only as of July 1, 1978	2,927
Optional Survivors as of July 1, 1978	137
Additional Spouse Only During Year*	165
Additional Optional Survivors During Year	20
Deletions During Year	- 97
<u>Total as of July 1, 1979</u>	<u>3,152</u>

Annual Annuity - July 1, 1978	\$ 4,167,623
- July 1, 1979	\$ 4,487,619

(b) Survivor with Children As of July 1, 1978	196
Additions During Year	19
Deletions During Year*	- 36
<u>Total as of July 1, 1979</u>	<u>179</u>

Annual Annuity - July 1, 1978	\$ 444,797
- July 1, 1979	\$ 411,580

(c) Children As of July 1, 1978	408
Additions During Year	41
Deletions During Year	- 81
<u>Total as of July 1, 1979</u>	<u>368</u>

Annual Annuity - July 1, 1978	\$ 403,370
- July 1, 1979	\$ 383,899

Deferred Vested Members

As of July 1, 1978	1,232
Additions During Year	182
Deletions During Year	- 20
<u>Total as of July 1, 1979</u>	<u>1,394</u>

* Includes Survivors with children at initial commencement date who have no dependent children at June 30, 1979.

POLICE AND FIRE FUNDAccounting Balance Sheet

- June 30, 1979 -

Assets

Cash on deposit		\$	80,501.18
Accounts Receivable:			
Employer contributions	\$	1,142.17	
From regular fund		25,325.24	
From State General Fund		166.96	
Interest on late employer contributions and delinquent payrolls		1,391.04	
Accrued interest on investments		946,425.27	
Accrued dividends		202,104.85	
Police State Aid		91,408.32	
New Units		604,956.60	1,872,920.45
			<hr/>
Total Current Assets		\$	1,953,421.63
Investments:			
Bonds - at amortized cost -			
U. S. Government	\$	3,403,504.31	
Corporate		36,000,768.23	
Canadian government insured		9,032,000.00	
G.N.M.A. (Government National Mortgage Assn.)		2,979,583.67	
Stock - Common - at cost		40,734,027.51	92,149,883.72
			<hr/>
Minnesota Adjustable Fixed Benefit Fund -			
at admitted value	\$	25,217,192.70	
Annuity Stabilization		788,722.31	26,005,915.01
Deferred yield adjustment			425,876.73
			<hr/>
Total Assets			<u>\$120,535,097.09</u>

Current Liabilities and Reserves

Liabilities:			
Accounts payable to Regular Fund		\$	107,209.39
Reserves:			
Members accumulated contributions			28,292,739.82
Benefits reserve			66,129,232.87
Reserve for participation in Minnesota			
Adjustable Fixed Benefit Fund			25,217,192.70
Annuity stabilization reserve			788,722.31
			<hr/>
Total Liabilities and Reserves			<u>\$120,535,097.09</u>

Police and Fire FundSources and Uses of Funds

- July 1, 1978 - June 30, 1979 -

<u>SOURCES</u>		<u>USES</u>	
<u>Employee Contributions</u>	\$ 6,234,713.66	<u>Refunds</u>	
<u>Employer Contributions</u>		Employee Contributions	\$ 664,230.37
12%	8,297,809.88	Employer Contributions	32,519.68
Additional	149,474.34	<u>Interest Paid on Refunds</u>	32,456.89
Payments from New Units	1,943,955.36	<u>Payments to Minnesota</u>	
<u>Police State Aid</u>	429,501.37	<u>Adjustable Fixed Benefit Fund</u>	5,026,585.75
<u>Investment Income</u>	5,994,093.52	<u>Annuities Paid</u>	
<u>Investment Sales and</u>		Retirement	2,237,694.27
<u>Redemptions</u>		Survivor	380,932.28
Bonds	74,087,295.90	Disability	145,062.47
Stocks	1,698,506.79	<u>Investment Purchases</u>	
<u>Interest Other than</u>		Bonds	84,506,109.08
<u>Investment Interest</u>	30,594.74	Stocks	5,613,658.99
<u>Cancelled Warrants</u>	13,369.75	<u>Net Transfers To</u>	
<u>Miscellaneous Receipts</u>	2,042.66	<u>Regular Fund</u>	5,205.15
	\$98,881,357.97	<u>Prepayment from City of</u>	
Add Cash Balance,		<u>Eveleth Which was Unapplied</u>	
July 1, 1978	2,658.14	<u>in 1977-78 (Therefore was a</u>	
		<u>Source in 1977-78, Now</u>	
		<u>Being Shown as a Use)</u>	159,060.00
Less Cash Balance,			
July 1, 1979	(80,501.18)		
	<u>\$98,803,514.93</u>		<u>\$98,803,514.93</u>

POLICE AND FIRE FUNDAccounting Statement of Income and Expense

- July 1, 1978, to June 30, 1979 -

Income

Employer contributions - 1978-1979		\$ 8,297,819.74
Employer contributions - other		136,155.32
Member contributions		6,234,689.36
Special income for Police State Aid		441,360.40
Transfer from Regular Fund:		
Members contributions - active	\$ 10,728.13	
Members contributions - deferred	27.43	
Employer contributions	<u>14,456.37</u>	25,211.93
Realized income of the Minnesota		
Adjustable Fixed Benefit Fund		1,273,287.26
Investment income		6,043,271.46
Gain on sales of stock		350,523.54
Interest on refunds repaid		9,927.64
Interest on delinquent contributions		
and omitted contributions		6,003.83
Purchased coverage from new units		2,546,897.20
Interest on Purchased coverage from new units		15,686.60
Adjustment for prior year entries		<u>(7,121.89)</u>
Total Income		\$25,373,712.39

Expense

Retirement annuities (paid from Minnesota		
Adjustable Fixed Benefit Fund)		\$2,231,295.99
Survivor Benefits Paid:		
Old law survivors	\$ 57,200.61	
With children	143,591.69	
Without children	<u>145,688.81</u>	346,481.11
Disability benefits paid		140,260.19
Disability survivor with children		11,155.68
Disability survivor without children		20,959.34
Refund of Deposits:		
Active members due to withdrawal	\$628,272.91	
Active members due to death	<u>11,027.54</u>	639,300.45
Deferred members due to withdrawal		24,432.88
Annuitant due to death		497.04
Interest paid on refunds		32,456.89
Refund of employer contributions		22,216.21
Transfers of Regular Fund:		
Members contributions - active	\$ 19,583.31	
Employer contributions	<u>3,428.16</u>	28,011.47

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

EXHIBIT 16
(Continued)

POLICE AND FIRE FUND

Accounting Statement of Income and Expense, Cont.

Expense, Cont.

Loss on sales of stock	\$ 129,918.91
Loss on sales of bonds	45,803.76
General administrative expense	<u>77,071.37</u>

Sub-Total	\$3,749,861.29
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Extraordinary Entry:

Reduction in Annuity Stabilization	<u>48,593.87</u>	<u>\$ 3,798,455.16</u>
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Excess of Income over Expense for the
year ended June 30, 1979

\$21,575,257.23

POLICE AND FIRE FUNDReconciliation of Asset Balances

- June 30, 1979 -

Asset Balance, July 1, 1978			\$ 98,015,314.29
Add:			
Employer contributions		\$ 8,433,975.06	
Employee contributions		6,234,689.36	
Special income - Police State Aid		441,360.40	
Employee and employer contributions transferred from Regular Fund		25,211.93	
Realized income of the Minnesota Adjustable fixed Benefit Fund		1,273,287.26	
Investment earnings		6,043,271.46	
Gains on sales of stock		350,523.54	
Purchased coverage from new units (including interest of \$15,686.60)		2,562,583.80	
Interest on omitted contributions, delinquent contributions and refunds repaid		15,931.47	
Net adjustment to annuity stabilization reserve account		<u>788,722.31</u>	<u>26,169,556.59</u>
Total Additions			\$124,184,870.88
Deduct:			
Benefits paid -			
Retirement	\$ 2,231,295.99		
Survivor	378,596.13		
Disability	<u>140,260.19</u>	\$ 2,750,152.31	
Refunds		686,446.58	
Interest paid on refunds		32,456.89	
Transfers to Regular Fund		28,011.47	
Losses on sales of bonds and stocks		175,722.67	
Adjustments for prior year entries		7,121.89	
General administrative expense		<u>77,071.37</u>	
Total Deductions			<u>3,756,983.18</u>
			\$120,427,887.70
Current Liabilities and Accounts Payable			<u>107,209.39</u>
Asset Balance, June 30, 1979			<u><u>\$120,535,097.09</u></u>

POLICE AND FIRE FUND

Reconciliation of Asset Balances at June 30, 1979 (Continued)

Note: The adjustment figure of \$788,722.31 to the annuity Stabilization Account consists of the following:

- (1) An adjustment figure of \$837,316.18 to the asset balance of \$81,962,092.02 shown on the 1977-78 reconciliation which would bring the Minnesota Adjustable Fixed Benefit account to \$19,754,635.87 (See Accounting Balance Sheet of June 30, 1978)
- (2) Reduction in the Annuity Stabilization Reserve Account of \$48,593.87 to conform to the balance in the account of \$788,722.31 at June 30, 1979.

Public Employees Retirement AssociationPolice and FireACTUARIAL 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 AssociationPolice and Fire FundAll EmployeesMORTALITY RATES
(Per 1,000 Employees)

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.517	45	3.002
21	.537	46	3.409
22	.558	47	3.856
23	.581	48	4.344
24	.607	49	4.869
25	.636	50	5.429
26	.667	51	6.027
27	.703	52	6.656
28	.742	53	7.321
29	.784	54	8.019
30	.831	55	8.751
31	.884	56	9.514
32	.941	57	10.312
33	1.005	58	11.154
34	1.074	59	12.057
35	1.152	60	13.043
36	1.237		
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 AssociationPolice and Fire FundAll EmployeesDISABILITY RATES
(Per 1,000 Employees)

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
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 AssociationPolice and Fire FundAll EmployeesSEPARATION RATES
(Per 1,000 Employees)

<u>Age</u>	<u>Separation</u>	<u>Age</u>	<u>Separation</u>
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 AssociationPolice and Fire FundAll EmployeesEARNINGS PROGRESSION

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
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, 1979)

Police and Fire Fund

RESERVES

Entry Age Normal Reserves

Retirement	\$165,638,340
Vesting	11,599,015
Disability	42,218,527
Survivors	8,196,923
Refund	<u>4,502,534</u>

\$232,155,339

Less Value of Benefits to be
 Earned in the Future

\$127,432,101 \$104,723,238

Deferred Annuitants 2,439,751

Former Members without
 Vested Rights 255,144

Retired Members:

Minnesota Adjustable
 Fixed Benefit Fund
 Admitted Assets \$ 26,005,915 *

Disability 1,290,271

Survivors 4,385,222

Reserve for Future
 Old Law Survivors 331,666

Minus Net Mortality Gain
 Receivable from

Minnesota Adjustable
 Fixed Benefit Fund 91,399 31,921,675 \$139,339,808

Unfunded Obligation

18,911,920

Funded Obligation

\$120,427,888

* Includes Annuity Stabilization Reserve. Retired Life
 Reserves are \$25,757,924.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS

(July 1, 1979)

Police and Fire FundAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$266,771,909
Obligation for Service Rendered to Date	\$139,339,808	
Net Assets	120,427,888	
Accrued Unfunded Obligation	18,911,920	
Funding Ratio		86%
Amortization (30-Year) Requirement	1,230,248	
Covered Payroll	68,125,873	
Amortization (30-Year) Rate Requirement		1.806%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned In the Future	\$127,432,101	
Present Value of Future Payroll	812,602,600	
Normal Cost Rate Requirement	15.682%	
Employee Contribution Rate	<u>8.000</u>	
Employer Normal Cost Rate Requirement		<u>7.682%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		12.000%
Amortization (30-Year) Rate Requirement	1.806%	
Normal Cost Rate Requirement	7.682	
Allowance for Expenses	<u>0.089</u>	
Total Requirement		<u>9.577%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		<u>2.423%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1979)Police and Fire FundAMORTIZATION RATE REQUIREMENT

	Period			
	10-Year	20-Year	30-Year	40-Year
Accrued Unfunded Obligation	\$18,911,920	\$18,911,920	\$18,911,920	\$18,911,920
Amortization Requirement	2,449,180	1,517,541	1,230,248	1,102,152
Covered Payroll	68,125,873	68,125,873	68,125,873	68,125,873
Amortization Rate Requirement	<u>3.595%</u>	<u>2.228%</u>	<u>1.806%</u>	<u>1.618%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law	<u>12.000%</u>	<u>12.000%</u>	<u>12.000%</u>	<u>12.000%</u>
Amortization Rate Requirement	3.595%	2.228%	1.806%	1.618%
Normal Cost Rate Requirement	7.682	7.682	7.682	7.682
Allowance for Expenses	<u>0.089</u>	<u>0.089</u>	<u>0.089</u>	<u>0.089</u>
Total Requirement	<u>11.366%</u>	<u>9.999%</u>	<u>9.577%</u>	<u>9.389%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>0.634%</u>	<u>2.001%</u>	<u>2.423%</u>	<u>2.611%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundSTATEMENT OF REVENUE, EXPENDITURES,
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
(Year Ending June 30, 1979)Revenue:

Employer Contributions	\$8,433,975.06	
Member Contributions	6,234,689.36	
Special Income	441,360.40	
Investment Income	6,226,881.91	
Minnesota Adjustable Fixed Benefit Fund Income	1,273,287.26	
Annuity Stabilization Reserve Adjustment	788,722.31	
New Units	<u>2,562,583.80</u>	
Total Revenue		\$25,961,500.10

Expenditure:

Benefits	\$2,750,152.31	
Refund of Contributions	718,903.47	
Administrative Expense	77,071.37	
Transfer to Regular Fund	2,799.54	
Total Expenditures		<u>3,548,926.69</u>

Increase in Assets (1979)		<u>\$22,412,573.41</u>
---------------------------	--	------------------------

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundALLOCATION OF CHANGE IN ACTUARIAL RESERVES

<u>Item</u>	<u>Assets</u>	<u>Reserves</u>	<u>Change in Unfunded Increase (Decrease)</u>
Contribution Income	\$14,668,663	\$10,565,975 ¹	\$(4,102,688)
Investment Income	7,500,169 ²	4,900,766	(2,599,403)
Inclusion of Annuity Stabilization Reserve and New Units	3,351,306	3,351,306	-
Other Income	<u>441,360</u>	<u>-</u>	<u>(441,360)</u>
Total Income	25,961,499	18,818,047	(7,143,451)
Benefit Payments and Transfers	(3,548,927)	(3,548,927)	-
Increase in Reserves Based on Salary Change	-	9,476,473	9,476,473
Mortality Gain	-	-	(91,399)
Other Experience Variation ³	<u>-</u>	<u>-</u>	<u>(4,455,520)</u>
Net Change	<u>\$22,412,573</u>	<u>\$20,198,676</u>	<u>\$(2,213,897)</u>

1 Normal Cost Plus Interest on the Unfunded

2 Includes MAFBF Income

3 Includes Actual Less Estimated Income Gain

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income less Reserves \$7,143,452

Estimated Sources of Change:

Amortization Payment	\$ 691,765	
Excess Interest (1.94% x Average Invested Assets)	2,118,899	
Excess Contribution Rate	675,453	
Contribution Rate Applied to Larger Payroll	1,638,429	
Other Income	<u>441,360</u>	<u>5,565,906</u>
Actual Less Estimated Gain		<u>\$1,577,546</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSPolice and Fire Fund

As of July 1, 1978	4,184
New Entrants	512
Reinstated	<u>134</u>
TOTAL	<u><u>4,830</u></u>

Separations:

a. With Refund of Contributions	
(i) Death	11
(ii) Withdrawal	306
b. With Deferred Annuity	9
c. With Disability Annuity	5
d. With Normal Retirement Annuity	85
e. With Survivor Annuity	<u>14</u>
TOTAL	<u><u>430</u></u>
Members as of July 1, 1979	4,400
Inactive Members*	<u>308</u>
Members Included in Entry Age Normal Cost Calculation	<u><u>4,092</u></u>

* 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 ANNUITANTSPolice and Fire FundNormal Retirement Annuitants

As of July 1, 1978	437
Additions During Year	94
Deletions During Year	- 16
<u>Total as of July 1, 1979</u>	<u>515</u>
Annual Annuity - July 1, 1978	\$1,888,892
- July 1, 1979	\$2,388,698

Disability Annuitants

As of July 1, 1978	29
Additions During Year	5
Deletions During Year	- 4
<u>Total as of July 1, 1979</u>	<u>30</u>
Annual Annuity - July 1, 1978	\$ 139,260
- July 1, 1979	\$ 128,582

Survivor Annuitants

(a) Spouse Only as of July 1, 1978	126
Optional Survivors as of July 1, 1978	16
Additional Spouse Only During Year*	14
Additional Optional Survivors During Year	1
Deletions During Year	- 2
<u>Total as of July 1, 1979</u>	<u>155</u>
Annual Annuity - July 1, 1978	\$ 237,154
- July 1, 1979	\$ 270,318

(b) Survivor with Children As of July 1, 1978	35
Additions During Year	2
Deletions During Year*	- 2
<u>Total as of July 1, 1979</u>	<u>35</u>

Annual Annuity - July 1, 1978	\$ 83,331
- July 1, 1979	\$ 80,267

(c) Children As of July 1, 1978	99
Additions During Year	1
Deletions During Year	- 22
<u>Total as of July 1, 1979</u>	<u>78</u>

Annual Annuity - July 1, 1978	\$ 72,975
- July 1, 1979	\$ 63,237

Deferred Vested Members

As of July 1, 1978	200
Additions During Year	34
Deletions During Year	- 24
<u>Total as of July 1, 1979</u>	<u>210</u>

* Includes Survivors with children at initial commencement date who have no dependent children at June 30, 1979.

Police and Fire Fund

SUPPORTING EXHIBITS

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PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundRetired Prior to July 1, 1973Payable From Adjustable Fixed Benefit Fund

<u>AGE</u>	<u>MALE</u>		<u>FEMALE</u>	
	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
61	1	\$ 262.34	-	\$ -
62	2	486.11	-	-
63	1	275.39	-	-
64	5	1,375.00	-	-
65	3	1,326.13	1	140.24
66	7	1,561.97	-	-
67	6	1,359.25	-	-
68	2	456.13	-	-
69	7	2,171.22	-	-
70	10	2,800.70	-	-
71	8	2,477.67	1	383.07
72	11	3,282.42	-	-
73	17	5,087.34	1	228.58
74	10	3,098.34	1	99.93
75	9	1,545.68	-	-
76	8	1,920.96	-	-
77	14	3,660.43	-	-
78	11	3,426.06	1	244.82
79	11	2,428.68	-	-
80	8	2,134.86	1	73.81
81	3	919.43	1	260.07
82	5	1,097.94	-	-
83	5	1,464.10	-	-
84	4	688.63	-	-
85	2	281.60	-	-
90	1	240.36	-	-
TOTAL	<u>171</u>	<u>\$45,828.74</u>	<u>7</u>	<u>\$1,430.52</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire FundRetired Under Law in Force July 1, 1973 and SubsequentPayable From Adjustable Fixed Benefit Fund

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
55	3	\$ 1,001.97	1	\$ 159.59
56	13	7,417.55	1	69.33
57	17	10,346.93	1	180.33
58	12	5,286.72	3	473.75
59	20	11,806.70	1	540.34
60	20	10,881.98	-	-
61	13	7,530.81	2	1,051.50
62	22	10,480.32	-	-
63	34	13,855.41	1	540.35
64	20	7,517.62	-	-
65	27	11,562.66	-	-
66	29	11,816.18	2	825.53
67	19	9,945.04	2	790.48
68	19	6,483.00	-	-
69	17	5,915.66	1	186.03
70	10	2,079.00	1	539.71
71	14	6,954.42	1	118.79
72	3	1,226.26	-	-
73	1	232.10	-	-
74	3	1,393.11	-	-
75	1	490.74	-	-
77	1	114.37	-	-
79	1	1,686.51	-	-
82	1	294.15	-	-
TOTALS	<u>320</u>	<u>\$146,323.21</u>	<u>17</u>	<u>\$5,475.73</u>

Survivor AnnuitiesPayable From Adjustable Fixed Benefit Fund

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
56	-	\$ -	1	\$ 318.46
60	-	-	2	422.83
62	-	-	4	705.44
63	-	-	1	245.14
64	-	-	1	432.47
66	-	-	1	256.04
69	-	-	1	50.02
70	-	-	1	73.80
73	-	-	1	125.43
74	1	160.36	1	36.83
82	-	-	1	71.01
83	-	-	1	45.48
TOTALS	<u>1</u>	<u>\$160.36</u>	<u>16</u>	<u>\$2,782.95</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundSurvivor AnnuitiesFEMALE

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>	<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
28	1	\$ 361.59	64	1	\$ 28.11
32	2	483.58	65	5	579.27
36	1	280.00	66	4	357.30
41	2	258.00	67	4	679.90
42	2	621.41	68	4	447.40
44	4	948.82	69	3	281.29
45	4	680.20	70	6	651.51
46	5	591.36	71	6	912.08
47	4	661.46	72	3	185.38
48	3	734.21	73	2	220.33
49	4	696.16	74	4	536.42
50	5	845.40	75	6	729.36
51	3	648.75	76	4	241.51
52	5	787.15	77	3	387.66
53	5	794.65	78	1	70.92
54	6	1,251.09	79	4	388.00
55	2	175.72	80	6	665.44
56	3	346.02	82	2	268.97
57	1	445.69	83	5	574.85
58	2	736.35	84	2	228.37
59	4	640.16	88	1	105.60
60	4	661.61	89	1	91.14
61	14	1,866.49	91	1	108.35
62	3	426.98			
63	5	1,179.72			
TOTALS				<u>172</u>	<u>\$25,861.73</u>

MALE

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
49	<u>1</u>	<u>\$410.40</u>

CHILDREN

<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
<u>78</u>	<u>\$5,269.72</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundDISABILITY

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
33	1	\$ 436.27
34	1	485.50
35	1	246.98
39	1	639.17
40	1	729.01
41	1	655.46
42	1	559.27
43	1	304.10
44	2	1,111.29
45	1	368.04
46	2	836.14
47	5	749.80
49	4	858.55
50	1	186.49
51	1	603.65
52	1	336.43
54	5	1,609.00
TOTALS	<u>30</u>	<u>\$10,715.15</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

CONSIDERED EARNINGS

Active Male Employees

(Age and Service as of July 1, 1979)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	143	\$ 1,664,187	125	\$ 1,658,716	107	\$ 1,502,742	4	\$ 65,508
25 to 29	107	1,352,935	115	1,677,029	325	5,074,037	319	5,442,972
30 to 34	53	681,352	67	1,031,869	221	3,451,510	386	6,978,559
35 to 39	18	183,198	34	570,125	67	1,017,266	178	3,045,615
40 to 44	13	115,625	16	216,290	40	555,308	100	1,697,960
45 to 49	5	50,028	11	143,915	22	260,119	61	922,042
50 to 54	4	54,195	19	309,827	15	198,706	35	564,833
55 to 59	4	47,989	6	126,404	7	86,952	20	280,355
60 to 64	1	1,334	-	-	1	9,737	16	234,010
65 & Up	-	-	-	-	3	25,176	2	17,008
<u>TOTAL</u>	<u>348</u>	<u>\$ 4,150,843</u>	<u>393</u>	<u>\$ 5,734,175</u>	<u>808</u>	<u>\$12,181,553</u>	<u>1,121</u>	<u>\$19,248,862</u>

AGE	YEARS OF SERVICE							
	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	7	129,508	-	-	-	-	-	-
30 to 34	143	2,790,952	3	75,660	-	-	-	-
35 to 39	226	4,411,723	48	984,553	-	-	-	-
40 to 44	139	2,610,593	80	1,599,805	20	412,328	1	26,359
45 to 49	83	1,535,711	79	1,605,918	57	1,214,281	13	292,174
50 to 54	47	834,645	59	1,179,394	58	1,220,576	25	535,652
55 to 59	45	762,913	38	687,026	19	354,004	12	229,815
60 to 64	14	194,392	9	142,266	12	203,253	11	205,436
65 & Up	5	49,055	5	92,306	-	-	-	-
<u>TOTAL</u>	<u>709</u>	<u>\$13,319,492</u>	<u>321</u>	<u>\$ 6,366,928</u>	<u>166</u>	<u>\$ 3,404,442</u>	<u>62</u>	<u>\$ 1,289,436</u>

AGE	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	379	\$ 4,891,153
25 to 29	-	-	-	-	-	-	873	13,676,481
30 to 34	-	-	-	-	-	-	873	15,009,902
35 to 39	-	-	-	-	-	-	571	10,212,480
40 to 44	-	-	-	-	-	-	409	7,234,268
45 to 49	-	-	-	-	-	-	331	6,024,188
50 to 54	7	142,640	-	-	-	-	269	5,040,468
55 to 59	4	95,302	1	24,560	-	-	156	2,695,320
60 to 64	-	-	-	-	-	-	64	990,428
65 & Up	-	-	-	-	-	-	15	183,545
<u>TOTAL</u>	<u>11</u>	<u>\$ 237,942</u>	<u>1</u>	<u>\$ 24,560</u>	<u>-</u>	<u>\$ -</u>	<u>3,940</u>	<u>\$65,958,233</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

CONSIDERED EARNINGS

Active Female Employees
(Age and Service as of July 1, 1979)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	13	\$145,563	3	\$ 43,353	9	\$144,908	-	\$ -
25 to 29	8	93,552	11	171,772	16	246,159	6	97,943
30 to 34	6	47,021	3	40,385	6	89,591	6	87,666
35 to 39	3	39,604	2	31,559	4	55,181	5	86,340
40 to 44	-	-	1	14,377	2	26,394	5	64,913
45 to 49	2	17,025	-	-	4	44,563	4	57,353
50 to 54	1	10,670	-	-	-	-	3	43,459
55 to 59	-	-	-	-	1	20,129	1	16,944
60 to 64	-	-	-	-	-	-	-	-
65 & Up	1	8,945	-	-	-	-	-	-
<u>TOTAL</u>	<u>34</u>	<u>\$362,380</u>	<u>20</u>	<u>\$301,446</u>	<u>42</u>	<u>\$626,925</u>	<u>30</u>	<u>\$454,618</u>

AGE	YEARS OF SERVICE							
	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	-	-	-	-	-	-	-	-
30 to 34	2	38,807	-	-	-	-	-	-
35 to 39	3	41,489	-	-	-	-	-	-
40 to 44	1	19,438	-	-	-	-	-	-
45 to 49	5	100,233	1	12,503	1	17,497	-	-
50 to 54	5	82,632	-	-	-	-	-	-
55 to 59	4	68,111	2	21,385	-	-	-	-
60 to 64	2	20,176	-	-	-	-	-	-
65 & Up	-	-	-	-	-	-	-	-
<u>TOTAL</u>	<u>22</u>	<u>\$370,886</u>	<u>3</u>	<u>\$ 33,888</u>	<u>1</u>	<u>\$ 17,497</u>	<u>-</u>	<u>\$ -</u>

AGE	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	25	333,824
25 to 29	-	-	-	-	-	-	41	609,426
30 to 34	-	-	-	-	-	-	23	303,470
35 to 39	-	-	-	-	-	-	17	254,173
40 to 44	-	-	-	-	-	-	9	125,122
45 to 49	-	-	-	-	-	-	17	249,174
50 to 54	-	-	-	-	-	-	9	136,761
55 to 59	-	-	-	-	-	-	8	126,569
60 to 64	-	-	-	-	-	-	2	20,176
65 & Up	-	-	-	-	-	-	1	8,945
<u>TOTAL</u>	<u>-</u>	<u>\$ -</u>	<u>-</u>	<u>\$ -</u>	<u>-</u>	<u>\$ -</u>	<u>152</u>	<u>\$2,167,640</u>

PUBLIC EMPLOYEES POLICE AND FIRE FUNDSUMMARY OF PLAN1. 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.

5. 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 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 \$450 per month. Minimum 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 Minnesota Adjustable Fixed Benefit Fund or the Retirement Fund shall receive the lump sum payment from the same fund.

16. Optional Annuities

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. Expenses

Paid by Association from retirement fund.

18. Actuarial Method

For purpose 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.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

FINANCIAL BALANCE SHEET
 (Year Commencing July 1, 1979)

Basic MembersRESERVES

Entry Age Normal Reserves

Retirement	\$600,956,748
Vesting	38,262,054
Disability	36,895,544
Survivors	25,582,905
Refund	<u>1,908,713</u>

\$703,605,964

Less Value of Benefits to be
Earned in the Future

164,134,236 \$539,471,728

Deferred Annuitants

10,280,017

Former Members without
Vested Rights

1,824,379

Retired Members:

Minnesota Adjustable
Fixed Benefits Fund
Admitted Assets

220,703,284 *

Disability

13,263,467

Survivors

45,502,901

Reserve for Future

Old Law Survivors

7,383,051

Plus Net Mortality Loss
Payable to

Minnesota Adjustable
Fixed Benefits Fund

216,774287,069,477

\$838,645,601

Unfunded Obligation

359,588,623

Funded Obligation

\$479,056,978

* Includes Annuity Stabilization Reserve. Retired Life
Reserves are \$219,541,564.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1979)Basic MembersAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$1,002,779,837
Obligation for Service Rendered to Date	\$838,645,601	
Net Assets	479,056,978	
Accrued Unfunded Obligation	359,588,623	
Funding Ratio		57%
Amortization (30-Year) Requirement	23,391,756	
Covered Payroll	177,985,472	
Amortization (30-Year) Rate Requirement		<u>13.143%</u>

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	\$ 164,134,236	
Present Value of Future Payroll	1,275,757,900	
Normal Cost Rate Requirement	12.866%	
Employee Contribution Rate	<u>8.000%</u>	
Employer Normal Cost Rate Requirement		<u>4.866%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		10.500%
Amortization (30-Year) Rate Requirement	13.143%	
Normal Cost Rate Requirement	4.866	
Allowance for Expenses	<u>0.148</u>	
Total Requirement		<u>18.157%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		<u>(7.657%)</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1979)Basic MembersAMORTIZATION RATE REQUIREMENT

	Period			
	<u>10-Year</u>	<u>20-Year</u>	<u>30-Year</u>	<u>40-Year</u>
Accrued Unfunded Obligation	\$359,588,623	\$359,588,623	\$359,588,623	\$359,588,623
Amortization Requirement	46,568,372	28,854,321	23,391,756	20,956,164
Covered Payroll	177,985,472	177,985,472	177,985,472	177,985,472
Amortization Rate Requirement	<u>26.164%</u>	<u>16.212%</u>	<u>13.143%</u>	<u>11.774%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law	<u>10.500%</u>	<u>10.500%</u>	<u>10.500%</u>	<u>10.500%</u>
Amortization Rate Requirement	26.164%	16.212%	13.143%	11.774%
Normal Cost Rate Requirement	4.866	4.866	4.866	4.866
Allowance for Expenses	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>
Total Requirement	<u>31.178%</u>	<u>21.226%</u>	<u>18.157%</u>	<u>16.788%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>(20.678%)</u>	<u>(10.726%)</u>	<u>(7.657%)</u>	<u>(6.288%)</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic Members

STATEMENT OF REVENUE, EXPENDITURES,
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
 (Year Ending June 30, 1979)

Revenue:

Employer Contributions	\$18,637,431.96	
Member Contributions	14,321,705.75	
MAFBF Annuity Stabilization Reserve	11,594,455.66	
Investment Income	19,011,576.62	
Minnesota Adjustable Fixed Benefit Fund Income	11,704,336.77	
Transfers from Police and Fire Fund	<u>2,799.54</u>	
Total Revenue		\$75,272,306.30

Expenditure:

Benefits	\$31,548,768.29	
Refund of Contributions	70,098.95	
Administrative Expense	<u>323,731.18</u>	
Total Expenditures		<u>31,942,598.42</u>

Increase in Assets (1979) \$43,329,707.88

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersALLOCATION OF CHANGE IN ACTUARIAL RESERVES

<u>Item</u>	<u>Assets</u>	<u>Reserves</u>	<u>Change in Unfunded Increase (Decrease)</u>
Contribution Income	\$32,959,138	\$40,023,960 ¹	\$ 7,064,822
Investment Income	30,715,913 ²	21,786,364	(8,929,549)
Inclusion of Stabilization Reserve and Transfers	<u>11,597,255</u>	<u>11,597,255</u>	<u>-</u>
Total Income	75,272,306	73,407,579	(1,864,727)
Benefit Payments	(31,942,598)	(31,942,598)	-
Increase in Reserves Based on Salary Change	-	33,381,173	33,381,173
Mortality Loss	-	216,774	216,774
Other Experience Variation ³	<u>-</u>	<u>(2,785,959)</u>	<u>(2,785,959)</u>
Net Change	<u>\$ 43,329,708</u>	<u>\$ 72,276,969</u>	<u>\$28,947,261</u>

1 Normal Cost Plus Interest on the Unfunded

2 Includes MAFBF Income

3 Includes Actual Less Estimated Income Gain

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income less Reserves \$1,864,727

Estimated Sources of Change:

Amortization Payment	\$10,826,855	
Excess Interest (1.94% x Average Invested Assets)	8,873,407	
Contribution Rate Applied to Larger Payroll	801,352	
Deficit in Contribution Rate	<u>(18,982,101)</u>	<u>1,519,513</u>
Actual Less Estimated Gain		<u>\$ 345,214</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSBasic Members

As of July 1, 1978	18,030
New Entrants	1
Reinstated	112
Transfers	<u>- 9</u>
TOTAL	<u>18,134</u>

Separations:

a. With Refund of Contributions	
(i) Death	56
(ii) Withdrawal	- 6
b. With Deferred Annuity	126
c. With Disability Annuity	92
d. With Normal Retirement Annuity	616
e. With Survivor Annuity	<u>140</u>
TOTAL	<u>1,024</u>
Members as of July 1, 1979	<u>17,110</u>
Inactive Members*	<u>3,624</u>
Members Included in Entry Age Normal Cost Calculation	<u>13,486</u>

* 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 ANNUITANTSBasic MembersNormal Retirement Annuitants

As of July 1, 1978	7,699
Additions During Year	742
Deletions During Year	- 366
<u>Total as of July 1, 1979</u>	<u>8,075</u>
Annual Annuity - July 1, 1978	\$22,938,967
- July 1, 1979	\$25,120,182

Disability Annuitants

As of July 1, 1978	417
Additions During Year	92
Deletions During Year	- 78
<u>Total as of July 1, 1979</u>	<u>431</u>
Annual Annuity - July 1, 1978	\$ 1,651,023
- July 1, 1979	\$ 1,730,502

Survivor Annuitants

(a) Spouse Only as of July 1, 1978	2,882
Optional Survivors as of July 1, 1978	137
Additional Spouse Only During Year*	152
Additional Optional Survivors During Year	20
Deletions During Year	- 97
<u>Total as of July 1, 1979</u>	<u>3,094</u>
Annual Annuity - July 1, 1978	\$ 4,116,203
- July 1, 1979	\$ 4,402,905

(b) Survivor with Children As of July 1, 1978	196
Additions During Year	19
Deletions During Year*	- 36
<u>Total as of July 1, 1979</u>	<u>179</u>
Annual Annuity - July 1, 1978	\$ 444,797
- July 1, 1979	\$ 411,580

(c) Children As of July 1, 1978	408
Additions During Year	41
Deletions During Year	- 81
<u>Total as of July 1, 1979</u>	<u>368</u>

Annual Annuity - July 1, 1978	\$ 403,370
- July 1, 1979	\$ 383,899

Deferred Vested Members

As of July 1, 1978	1,029
Additions During Year	126
Deletions During Year	- 17
<u>Total as of July 1, 1979</u>	<u>1,138</u>

* Includes Survivors with children at initial commencement date who have no dependent children at June 30, 1979.

Basic Members

SUPPORTING EXHIBITS

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PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersRetired Prior to July 1, 1973Payable From Adjustable Fixed Benefit Fund

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
64	1	\$ 183.79	-	\$ -
65	2	295.22	3	310.78
66	3	480.67	4	613.35
67	7	810.70	8	839.89
68	14	2,518.20	15	2,415.33
69	19	3,895.73	27	4,221.74
70	34	6,322.39	26	4,364.56
71	76	17,610.33	60	9,934.63
72	166	36,629.80	129	19,924.19
73	142	30,819.03	140	21,731.40
74	143	30,885.74	113	18,111.10
75	118	26,457.16	122	19,912.28
76	133	29,093.93	118	18,497.33
77	152	33,092.66	129	22,204.17
78	165	38,306.02	99	16,777.47
79	135	29,141.93	103	17,761.38
80	135	29,517.40	107	18,049.48
81	111	23,446.17	84	15,753.46
82	115	22,502.83	77	14,781.73
83	111	25,141.66	74	13,570.99
84	101	22,308.12	69	11,454.81
85	98	21,581.09	54	9,086.99
86	68	14,497.88	43	6,276.71
87	55	12,315.41	45	6,704.32
88	55	11,559.32	32	6,000.08
89	24	5,733.20	27	4,738.24
90	35	7,419.25	25	4,627.88
91	27	5,322.03	13	2,361.66
92	23	4,326.19	13	1,810.52
93	11	1,898.16	8	2,053.58
94	7	1,105.25	9	1,141.30
95	5	1,388.73	5	821.21
96	7	1,252.76	2	226.05
97	1	72.42	3	622.45
98	1	172.55	-	-
99	-	-	1	148.55
101	1	174.12	-	-
102	1	136.25	-	-
105	-	-	1	183.22
TOTALS	<u>2,303</u>	<u>\$499,765.35</u>	<u>1,788</u>	<u>\$298,032.83</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

Retired Under Law in Force July 1, 1973 and Subsequent

Payable From Adjustable Fixed Benefit Fund

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
58	4	\$ 796.14	3	\$ 861.42
59	11	4,303.02	11	2,221.84
60	17	5,499.60	13	3,060.70
61	17	9,987.61	25	5,120.46
62	41	21,926.57	27	8,138.68
63	79	48,627.64	49	17,523.22
64	97	55,773.73	73	28,190.28
65	180	80,824.56	130	39,562.28
66	261	104,230.46	270	73,351.07
67	290	113,796.19	296	70,676.08
68	265	97,232.97	238	61,170.95
69	266	98,307.72	235	49,527.52
70	220	70,941.64	208	41,191.30
71	148	53,471.06	132	25,263.61
72	61	20,090.20	49	10,513.86
73	33	12,057.36	30	5,249.73
74	29	8,753.72	13	1,031.03
75	17	3,963.17	16	2,953.79
76	20	8,586.07	11	1,819.96
77	9	1,829.71	7	639.97
78	10	4,179.87	5	757.66
79	9	5,260.73	3	249.74
80	8	1,361.49	9	1,306.19
81	7	1,822.42	2	215.13
82	1	509.44	2	166.74
83	-	-	4	614.53
84	2	1,169.36	-	-
85	2	127.50	-	-
87	1	787.96	-	-
88	1	818.63	-	-
99	1	34.34	-	-
TOTAL	<u>2,107</u>	<u>\$837,133.36</u>	<u>1,861</u>	<u>\$451,377.74</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersSt. Paul Bureau of Health

<u>AGE</u>	<u>MALE</u>		<u>FEMALE</u>	
	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
55	-	\$ -	1	\$ 378.78
58	-	-	1	439.94
59	-	-	1	383.45
60	-	-	1	373.11
67	-	-	1	384.23
69	-	-	1	419.31
72	3	1,286.26	1	479.70
76	1	486.34	-	-
77	1	465.06	-	-
78	-	-	1	487.50
79	-	-	1	482.44
81	1	487.12	-	-
83	-	-	1	485.94
TOTALS	<u>6</u>	<u>\$2,724.78</u>	<u>10</u>	<u>\$4,314.40</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersBeneficiaries Payable from Minnesota Adjustable Fixed Benefit Fund

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
43	1	\$ 40.93	-	\$ -
45	-	-	1	147.11
51	-	-	1	177.91
52	1	33.70	1	229.57
54	-	-	1	177.22
55	-	-	3	896.09
57	-	-	4	1,394.46
58	-	-	2	606.33
59	-	-	4	1,063.57
60	1	152.79	4	1,073.63
61	-	-	6	1,438.00
62	-	-	7	859.36
63	-	-	6	1,443.31
64	-	-	8	1,614.03
65	-	-	9	3,239.06
66	1	117.56	7	1,328.06
67	-	-	6	565.56
68	1	234.71	9	2,966.89
69	-	-	7	1,621.68
70	-	-	4	533.33
71	1	319.86	8	1,751.83
72	-	-	7	1,662.83
73	-	-	2	81.15
74	1	144.09	3	465.68
75	1	288.81	5	1,824.09
76	-	-	7	1,575.66
77	1	392.83	2	211.53
78	-	-	4	560.32
79	-	-	1	370.01
80	-	-	2	443.80
82	-	-	4	690.19
83	-	-	4	1,106.06
84	-	-	2	243.74
88	-	-	1	159.90
89	-	-	1	55.27
TOTALS	<u>9</u>	<u>\$1,725.28</u>	<u>143</u>	<u>\$32,577.23</u>

Annuities Payable for a Certain Period Not Dependent on Age

<u>Number</u>	<u>Monthly Annuity</u>
<u>8</u>	<u>\$1,835.33</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersDISABILITY RETIREMENTS

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
35	1	\$ 235.04	-	\$ -
36	1	291.40	-	-
38	1	283.28	-	-
42	1	284.45	-	-
43	1	373.80	-	-
44	-	197.85	1	202.37
45	1	289.84	1	103.65
46	1	447.63	-	-
47	1	173.30	-	-
48	5	2,076.09	-	-
49	4	1,699.67	1	231.41
50	7	2,471.48	3	494.00
51	3	1,143.34	-	-
52	10	3,063.84	2	329.68
53	4	1,656.45	1	116.25
54	6	2,837.29	6	1,152.77
55	13	4,164.21	2	787.43
56	15	5,882.01	7	1,050.71
57	13	5,061.27	12	1,749.97
58	12	5,822.00	8	1,436.06
59	12	4,772.61	9	1,567.65
60	26	11,161.05	6	1,453.16
61	28	10,930.29	8	2,448.29
62	36	15,955.68	18	4,031.22
63	35	14,644.96	18	3,870.51
64	43	17,588.79	17	3,186.76
65	21	5,437.48	10	1,041.47
TOTALS	<u>301</u>	<u>\$118,945.10</u>	<u>130</u>	<u>\$25,263.36</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersSURVIVOR ANNUITIESFEMALE

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>	<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
35	1	\$ 280.00	69	91	\$ 9,989.06
36	1	246.58	70	86	9,690.10
37	3	694.90	71	85	9,182.59
38	1	286.15	72	99	10,629.41
39	1	280.00	73	85	8,913.30
40	3	845.66	74	112	11,389.31
41	3	562.96	75	100	10,194.36
42	5	1,045.85	76	116	11,854.59
43	4	1,078.09	77	124	13,090.56
44	9	2,688.16	78	118	12,363.67
45	7	1,513.44	79	104	11,201.64
46	6	1,202.05	80	104	10,408.76
47	9	2,139.54	81	105	11,324.97
48	8	1,343.76	82	114	11,281.41
49	11	2,396.01	83	84	9,021.50
50	23	4,462.47	84	87	8,471.40
51	24	4,856.78	85	76	7,618.38
52	17	2,337.05	86	85	8,153.15
53	25	4,373.06	87	59	5,171.85
54	23	4,700.92	88	56	4,891.18
55	33	6,285.88	89	32	2,922.09
56	29	4,880.04	90	36	2,876.17
57	52	8,224.85	91	31	2,743.49
58	42	7,583.34	92	17	1,392.40
59	48	9,041.88	93	15	1,321.00
60	54	8,395.69	94	13	1,039.70
61	53	9,507.64	95	7	492.07
62	72	8,653.01	96	4	356.34
63	69	9,895.41	97	3	326.56
64	68	7,823.72	98	1	82.34
65	61	6,694.48	99	2	168.31
66	90	10,229.84	100	2	265.12
67	85	9,340.82	101	1	88.46
68	86	9,275.73	105	1	112.25
			TOTALS	<u>3,081</u>	<u>\$362,293.25</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersSURVIVOR ANNUITIESMALE

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
45	1	\$ 225.93
49	1	206.45
53	1	305.29
61	2	169.00
63	1	450.00
65	2	279.53
66	5	580.37
67	4	406.42
70	1	165.92
71	2	162.88
72	1	91.14
73	1	122.18
74	2	122.07
75	2	206.18
77	1	138.78
78	3	357.60
80	2	90.52
81	1	26.74
83	2	254.45
84	3	127.67
89	1	35.95
92	1	86.28
TOTALS	<u>40</u>	<u>\$4,611.35</u>

CHILDREN

<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
<u>368</u>	<u>\$31,991.57</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

CONSIDERED EARNINGS

Active Male Employees
(Age and Service as of July 1, 1979)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 29	-	-	-	-	-	-	1	5,435
30 to 34	-	-	-	-	1	29,634	3	66,008
35 to 39	-	-	-	-	1	23,623	2	45,607
40 to 44	-	-	-	-	1	14,925	4	42,909
45 to 49	-	-	-	-	4	48,812	5	72,967
50 to 54	-	-	-	-	4	55,036	11	122,539
55 to 59	-	-	-	-	3	45,148	7	95,644
60 to 64	-	-	-	-	3	39,393	7	101,479
65 & Up	-	-	-	-	2	19,475	6	24,942
<u>TOTAL</u>	<u>-</u>	<u>\$ -</u>	<u>-</u>	<u>\$ -</u>	<u>19</u>	<u>\$ 276,046</u>	<u>46</u>	<u>\$ 577,530</u>

AGE	YEARS OF SERVICE							
	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	3	47,187	-	-	-	-	-	-
30 to 34	164	2,661,196	18	318,145	-	-	-	-
35 to 39	302	4,926,148	225	3,905,245	12	211,510	-	-
40 to 44	345	5,266,163	409	6,922,533	231	4,103,939	21	421,876
45 to 49	337	4,805,003	399	6,534,264	378	6,657,336	156	2,791,187
50 to 54	342	4,708,829	444	6,680,736	431	7,207,905	360	6,434,269
55 to 59	308	4,111,292	517	7,654,119	395	6,352,902	372	6,319,168
60 to 64	263	3,240,484	333	4,455,416	309	4,433,483	267	4,240,678
65 & Up	52	479,429	35	371,453	34	358,694	18	224,365
<u>TOTAL</u>	<u>2,116</u>	<u>\$30,245,731</u>	<u>2,380</u>	<u>\$36,841,911</u>	<u>1,790</u>	<u>\$29,325,769</u>	<u>1,194</u>	<u>\$20,431,493</u>

AGE	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 29	-	-	-	-	-	-	4	52,622
30 to 34	-	-	-	-	-	-	186	3,074,983
35 to 39	-	-	-	-	-	-	542	9,112,133
40 to 44	-	-	-	-	-	-	1,011	16,772,345
45 to 49	10	160,654	-	-	-	-	1,289	21,070,223
50 to 54	97	1,936,181	2	36,948	-	-	1,691	27,182,443
55 to 59	158	3,048,222	17	338,050	1	21,795	1,778	27,986,340
60 to 64	103	1,773,060	13	268,335	7	131,133	1,305	18,683,411
65 & Up	6	71,674	3	50,085	1	48,215	157	1,648,332
<u>TOTAL</u>	<u>374</u>	<u>\$ 6,989,791</u>	<u>35</u>	<u>\$ 693,418</u>	<u>9</u>	<u>\$ 201,143</u>	<u>7,963</u>	<u>\$125,582,832</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

CONSIDERED EARNINGS

Active Female Employees
(Age and Service as of July 1, 1979)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 29	-	-	-	-	-	-	2	19,840
30 to 34	-	-	-	-	-	-	5	58,151
35 to 39	-	-	-	-	1	2,838	5	53,192
40 to 44	-	-	-	-	1	7,887	13	86,305
45 to 49	-	-	-	-	1	11,583	33	206,759
50 to 54	-	-	-	-	1	4,703	59	414,649
55 to 59	-	-	-	-	1	5,666	40	250,654
60 to 64	-	-	-	-	3	25,725	30	242,993
65 & Up	-	-	-	-	-	-	4	14,469
<u>TOTAL</u>	<u>-</u>	<u>\$ -</u>	<u>-</u>	<u>\$ -</u>	<u>8</u>	<u>\$ 58,402</u>	<u>191</u>	<u>\$ 1,347,012</u>

AGE	YEARS OF SERVICE							
	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	13	145,972	-	-	-	-	-	-
30 to 34	93	1,120,895	33	394,435	-	-	-	-
35 to 39	119	1,285,785	74	936,725	17	212,344	-	-
40 to 44	246	2,312,430	92	1,150,601	44	556,894	9	140,751
45 to 49	473	3,918,879	200	2,051,855	58	736,961	33	405,516
50 to 54	672	5,592,901	332	3,126,543	110	1,325,887	56	768,167
55 to 59	657	5,196,343	477	4,531,829	202	2,311,909	84	1,068,809
60 to 64	385	2,913,915	375	3,391,181	166	1,797,043	66	764,846
65 & Up	50	316,010	30	241,066	17	111,873	8	90,408
<u>TOTAL</u>	<u>2,708</u>	<u>\$22,803,130</u>	<u>1,613</u>	<u>\$15,824,235</u>	<u>614</u>	<u>\$ 7,052,911</u>	<u>256</u>	<u>\$ 3,238,497</u>

AGE	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 29	-	-	-	-	-	-	15	165,812
30 to 34	-	-	-	-	-	-	131	1,573,481
35 to 39	-	-	-	-	-	-	216	2,490,884
40 to 44	-	-	-	-	-	-	405	4,254,868
45 to 49	6	96,212	-	-	-	-	804	7,427,765
50 to 54	33	516,952	4	69,344	-	-	1,267	11,819,146
55 to 59	30	453,016	12	192,639	1	17,900	1,504	14,028,765
60 to 64	23	362,931	16	232,368	5	93,595	1,069	9,824,597
65 & Up	2	32,180	1	11,316	-	-	112	817,322
<u>TOTAL</u>	<u>94</u>	<u>\$ 1,461,291</u>	<u>33</u>	<u>\$ 505,667</u>	<u>6</u>	<u>\$ 111,495</u>	<u>5,523</u>	<u>\$52,402,640</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBASIC MEMBERSSUMMARY OF PLAN1. 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 the 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

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 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 Annuities

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. Expenses

Paid by Association from retirement fund.

20. 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.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONFINANCIAL BALANCE SHEET
(Year Commencing July 1, 1979)Coordinated MembersRESERVES

Entry Age Normal Reserves

Retirement	\$377,946,512
Vesting	70,631,168
Disability	25,378,977
Survivors	6,952,398
Refund	<u>46,061,523</u>

\$526,970,578

Less Value of Benefits to be
Earned in the Future

274,409,497 \$252,561,081

Deferred Annuitants

1,078,937

Former Members without
Vested Rights

7,013,303

Retired Members:

Minnesota Adjustable
Fixed Benefit Fund
Admitted Assets

36,686,677 *

Disability

1,884,441

Plus Net Mortality Loss
Payable toMinnesota Adjustable
Fixed Benefits Fund35,45838,606,576

\$299,259,897

Unfunded Obligation

(34,654,944)

Funded Obligation

\$333,914,841

* Includes Annuity Stabilization Reserve. The Retired
Life Reserves are \$36,499,683.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1979)Coordinated MembersAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$573,669,394
Obligation for Service		
Rendered to Date	\$299,259,897	
Net Assets	333,914,841	
Accrued Unfunded Obligation	(34,654,944)	
Funding Ratio		112%
Amortization (30-Year) Requirement	(2,254,354)	
Covered Payroll	639,593,141	
Amortization (30-Year) Rate Requirement		<u>(0.352%)</u>

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	\$ 274,409,497	
Present Value of Future Payroll	4,020,238,400	
Normal Cost Rate Requirement	6.826%	
Employee Contribution Rate	<u>4.000</u>	
Employer Normal Cost Rate Requirement		<u>2.826%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		5.500%
Amortization (30-Year) Rate Requirement	(0.352%)	
Normal Cost Rate Requirement	2.826	
Allowance for Expenses	<u>0.148</u>	
Total Requirement		2.622%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		<u>2.878%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1979)Coordinated MembersAMORTIZATION RATE REQUIREMENT

	Period			
	<u>10-Year</u>	<u>20-Year</u>	<u>30-Year</u>	<u>40-Year</u>
Accrued Unfunded Obligation	\$ (34,654,944)	\$ (34,654,944)	\$ (34,654,944)	\$ (34,654,944)
Amortization Requirement	(4,487,974)	(2,780,802)	(2,254,354)	(2,035,221)
Covered Payroll	639,593,141	639,593,141	639,593,141	639,593,141
Amortization Rate Requirement	<u>(0.702%)</u>	<u>(0.435%)</u>	<u>(0.352%)</u>	<u>(0.318%)</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law	<u>5.500%</u>	<u>5.500%</u>	<u>5.500%</u>	<u>5.500%</u>
Amortization Rate Requirement	(0.702%)	(0.435%)	(0.352%)	(0.318%)
Normal Cost Rate Requirement	2.826	2.826	2.826	2.826
Allowance for Expenses	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>
Total Requirement	<u>2.272%</u>	<u>2.539%</u>	<u>2.622%</u>	<u>2.656%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>3.228%</u>	<u>2.961%</u>	<u>2.878%</u>	<u>2.844%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersSTATEMENT OF REVENUE, EXPENDITURES,
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
(Year Ending June 30, 1979)Revenue:

Employer Contributions	\$35,001,513.35	
Member Contributions	25,455,072.02	
MAFBF Annuity Stabilization Revenue	1,863,552.10	
Investment Income	17,928,020.29	
Minnesota Adjustable Fixed Benefit Fund Income	<u>1,916,293.39</u>	
Total Revenue		\$82,164,451.15

Expenditure:

Benefits	\$ 3,962,001.94	
Refund of Contributions	10,171,358.34	
Administrative Expense	<u>932,168.77</u>	
Total Expenditures		<u>15,065,529.05</u>

Increase in Assets (1979)	<u><u>\$67,098,922.10</u></u>
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PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersALLOCATION OF CHANGE IN ACTUARIAL RESERVES

<u>Item</u>	<u>Assets</u>	<u>Reserves</u>	<u>Change in Unfunded Increase (Decrease)</u>
Contribution Income	\$ 60,456,585	\$ 38,238,413 ¹	\$ (22,218,172) ✓
Investment Income	19,844,314 ²	13,340,796	(6,503,518)
Inclusion of Annuity Stabilization Reserve	<u>1,863,552</u>	<u>1,863,552</u>	<u>-</u>
Total Income	82,164,451	53,442,761	(28,721,690)
Benefit Payments	(15,065,529)	(15,065,529)	-
Increase in Reserves Based on Salary Change	-	1,785,041	1,785,041
Mortality Loss	-	35,458	35,458
Other Experience Variation ³	<u>-</u>	<u>2,160,359</u>	<u>2,160,359</u>
Net Change	<u>\$ 67,098,922</u>	<u>\$ 42,358,090</u>	<u>\$ (24,740,832)</u>

1 Normal Cost Plus Interest on the Unfunded

2 Includes MAFBF Income

3 Includes Actual Less Estimated Income Gain

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersESTIMATED SOURCE OF GAIN FROM INCOME

Actual Income less Reserves		\$28,721,690
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Estimated Sources of Gain:

Excess Interest (1.94% x Average Invested Assets)	\$ 5,827,088	
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Contribution Rate Applied to Larger Payroll	4,727,524	
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Excess Contribution Rate	<u>17,246,621</u>	<u>27,801,233</u>
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Actual Less Estimated Gain		<u>\$ 920,457</u>
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PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSCoordinated Members

As of July 1, 1978	69,373
New Entrants	13,423
Reinstated	4,311
Transfer	<u>9</u>
TOTAL	<u>87,116</u>

Separations:

a. With Refund of Contributions	
(i) Death	114
(ii) Withdrawal	14,396
b. With Deferred Annuity	56
c. With Disability Annuity	71
d. With Normal Retirement Annuity	289
e. With Survivor Annuity	<u>16</u>
TOTAL	<u>14,942</u>
Members as of July 1, 1979	<u>72,174</u>
Inactive Members*	<u>3,995</u>
Members Included in Entry Age Normal Cost Calculation	<u>68,179</u>

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

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ANNUITANTSCoordinated MembersNormal Retirement Annuitants

As of July 1, 1978	2,054
Additions During Year	345
Deletions During Year	<u>- 52</u>
<u>Total as of July 1, 1979</u>	<u>2,347</u>
Annual Annuity - July 1, 1978	\$3,341,161
- July 1, 1979	\$3,784,210

Disability Annuitants

As of July 1, 1978	165
Additions During Year	71
Deletions During Year	<u>- 39</u>
<u>Total as of July 1, 1979</u>	<u>197</u>
Annual Annuity - July 1, 1978	\$ 233,160
- July 1, 1979	\$ 245,210

Survivor Annuitants

Spouse Only	
As of July 1, 1978	45
Additions During Year	13
Deletions During Year	<u>-</u>
<u>Total as of July 1, 1979</u>	<u>58</u>
Annual Annuity - July 1, 1978	\$ 51,420
- July 1, 1979	\$ 84,714

Deferred Vested Members

As of July 1, 1978	203
Additions During Year	56
Deletions During Year	<u>- 3</u>
<u>Total as of July 1, 1979</u>	<u>256</u>

Coordinated Members

SUPPORTING EXHIBITS

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PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersRetired Prior to July 1, 1973

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
66	1	\$ 44.30	-	\$ -
68	-	-	1	52.45
69	3	281.22	2	182.48
70	3	399.98	5	736.63
71	28	2,321.10	13	1,499.34
72	74	7,348.48	33	3,639.12
73	68	6,869.04	31	3,063.96
74	80	7,754.23	32	3,069.30
75	67	5,763.68	25	2,300.19
76	71	6,821.03	24	3,290.83
77	29	2,398.11	20	1,532.79
78	22	1,563.18	10	1,034.01
79	19	2,431.55	9	1,417.82
80	8	1,247.48	10	1,484.25
81	5	604.72	5	278.26
82	5	815.15	1	87.03
83	7	533.68	2	147.05
84	2	618.07	3	523.09
85	4	513.79	-	-
86	1	77.90	2	428.28
87	4	276.91	-	-
88	1	51.23	1	185.98
89	2	299.69	1	195.87
TOTALS	<u>504</u>	<u>\$49,158.30</u>	<u>230</u>	<u>\$25,148.73</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersRetired Under Law in Force July 1, 1973 and Subsequent

AGE	NUMBER	MALE	NUMBER	FEMALE
		MONTHLY ANNUITY		MONTHLY ANNUITY
58	1	\$ 218.42	1	\$ 96.10
59	3	906.52	2	383.38
60	2	417.30	3	179.10
61	2	656.08	5	1,487.27
62	5	2,135.32	3	305.50
63	17	5,082.35	1	126.76
64	19	8,218.38	12	2,615.68
65	54	9,835.23	25	3,246.19
66	197	30,776.61	95	9,918.44
67	161	28,475.78	82	8,774.58
68	169	22,850.95	86	10,666.08
69	148	20,982.40	77	8,290.62
70	137	20,554.82	52	7,510.32
71	85	12,843.24	34	5,333.88
72	34	4,764.23	18	1,493.66
73	14	2,745.48	11	727.96
74	18	2,910.95	6	702.94
75	7	661.29	3	164.12
76	8	868.64	2	98.53
77	2	112.51	-	-
78	-	-	2	437.79
79	2	288.76	1	81.24
80	2	296.67	1	170.73
81	1	483.18	-	-
82	2	1,127.46	-	-
87	1	20.33	-	-
TOTALS	<u>1,091</u>	<u>\$178,232.90</u>	<u>522</u>	<u>\$62,810.87</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersPayable From Adjustable Fixed Benefit FundSURVIVOR ANNUITIESFEMALE

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
35	1	\$ 33.14
53	1	59.13
54	1	170.82
55	1	62.13
56	1	48.56
58	2	193.16
59	3	364.07
61	3	412.76
62	3	880.69
63	2	130.46
64	6	476.77
65	3	355.97
66	1	349.39
67	5	369.57
68	4	384.96
69	3	417.89
70	3	186.76
71	2	587.58
72	1	92.62
73	1	60.50
74	1	40.21
75	1	266.32
76	2	124.30
78	1	193.46
79	2	231.67
83	1	58.10
86	1	146.96
87	1	138.42
TOTALS	<u>57</u>	<u>\$6,800.99</u>

MALES

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
66	<u>1</u>	<u>\$258.54</u>

Annuities Payable for a Certain Period Not Dependent on Age

<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
<u>6</u>	<u>\$719.68</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersDISABILITY RETIREMENTS

<u>AGE</u>	<u>MALE</u>		<u>FEMALE</u>	
	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
37	-	\$ -	1	\$ 45.25
46	-	-	1	36.16
47	2	189.60	-	-
48	1	139.07	-	-
49	2	430.87	-	-
50	2	381.25	1	156.63
51	3	755.88	1	68.44
52	2	183.56	2	39.42
53	2	347.01	3	264.40
54	3	203.29	3	92.97
55	2	198.69	2	73.55
56	9	1,093.73	-	-
57	5	521.95	6	310.06
58	4	364.82	5	254.24
59	8	800.55	1	68.53
60	16	1,603.52	6	433.47
61	9	1,721.48	6	693.41
62	19	2,014.71	2	193.28
63	18	1,627.62	4	162.62
64	21	2,722.73	8	354.20
65	12	1,827.06	1	60.13
TOTALS	<u>144</u>	<u>\$17,127.39</u>	<u>53</u>	<u>\$3,306.76</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

CONSIDERED EARNINGS

Active Male Employees
(Age and Service as of July 1, 1979)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	1,134	\$ 9,275,086	589	\$ 5,683,992	808	\$ 8,917,749	123	\$ 1,450,312
25 to 29	828	8,154,723	710	8,138,860	1,558	19,850,506	1,156	15,883,657
30 to 34	475	5,018,043	414	5,205,751	1,074	15,487,714	1,510	23,692,696
35 to 39	277	2,735,921	250	3,015,340	577	7,981,847	925	14,135,610
40 to 44	184	1,704,693	173	1,915,618	519	6,622,936	728	10,360,906
45 to 49	174	1,568,959	159	1,751,098	458	5,778,856	794	10,762,944
50 to 54	156	1,445,400	155	1,694,870	493	5,616,145	853	11,024,204
55 to 59	138	1,212,736	102	1,019,415	394	4,353,452	812	10,111,696
60 to 64	64	471,476	62	501,211	251	2,359,370	569	6,698,671
65 & Up	25	130,895	26	130,479	97	509,972	178	1,143,624
<u>TOTAL</u>	<u>3,455</u>	<u>\$31,717,932</u>	<u>2,640</u>	<u>\$29,056,634</u>	<u>6,229</u>	<u>\$77,478,547</u>	<u>7,648</u>	<u>\$105,264,320</u>

AGE	YEARS OF SERVICE							
	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	56	845,057	-	-	-	-	-	-
30 to 34	374	6,361,275	5	100,889	-	-	-	-
35 to 39	435	7,468,752	61	1,132,750	1	14,156	-	-
40 to 44	400	6,783,578	114	2,269,274	33	676,960	3	51,210
45 to 49	371	5,802,818	111	2,090,901	60	1,226,902	18	375,617
50 to 54	450	6,655,988	142	2,348,894	85	1,575,601	48	896,924
55 to 59	483	7,050,070	187	2,889,025	115	1,846,144	63	1,057,466
60 to 64	388	5,154,411	146	2,006,757	83	1,250,113	41	618,545
65 & Up	61	530,318	18	190,676	9	138,879	2	33,535
<u>TOTAL</u>	<u>3,018</u>	<u>\$46,652,267</u>	<u>784</u>	<u>\$13,029,166</u>	<u>386</u>	<u>\$ 6,728,755</u>	<u>175</u>	<u>\$ 3,033,297</u>

AGE	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	2,654	\$ 25,327,139
25 to 29	-	-	-	-	-	-	4,308	52,872,803
30 to 34	-	-	-	-	-	-	3,852	55,866,368
35 to 39	-	-	-	-	-	-	2,526	36,484,376
40 to 44	-	-	-	-	-	-	2,154	30,385,175
45 to 49	2	43,764	-	-	-	-	2,147	29,401,859
50 to 54	16	328,379	9	146,791	-	-	2,407	31,733,196
55 to 59	20	412,734	8	109,499	-	-	2,322	30,062,237
60 to 64	11	214,042	7	146,961	-	-	1,622	19,421,557
65 & Up	1	2,787	-	-	1	10,179	418	2,821,344
<u>TOTAL</u>	<u>50</u>	<u>\$ 1,001,706</u>	<u>24</u>	<u>\$ 403,251</u>	<u>1</u>	<u>\$ 10,179</u>	<u>24,410</u>	<u>\$314,376,054</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

CONSIDERED EARNINGS

Active Female Employees
(Age and Service as of July 1, 1979)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	2,872	\$18,197,470	1,631	\$12,578,572	1,937	\$15,884,024	367	\$ 3,187,557
25 to 29	1,431	10,190,971	1,038	8,570,733	2,092	19,583,826	1,418	14,308,839
30 to 34	1,211	7,484,868	835	5,932,280	1,645	12,921,945	1,147	11,861,253
35 to 39	1,018	5,837,114	852	5,395,960	1,958	13,383,207	1,499	11,992,070
40 to 44	682	3,848,534	620	3,776,876	1,810	11,469,346	2,046	14,912,893
45 to 49	477	2,699,441	428	2,713,320	1,312	8,617,243	2,080	15,008,865
50 to 54	356	1,928,108	279	1,759,320	1,040	6,686,603	1,884	13,293,545
55 to 59	210	1,130,641	167	979,561	713	4,589,273	1,379	9,570,625
60 to 64	62	300,208	73	355,969	316	1,786,107	856	5,497,042
65 & Up	23	99,353	26	85,006	95	372,974	227	1,092,603
<u>TOTAL</u>	<u>8,342</u>	<u>\$51,716,708</u>	<u>5,949</u>	<u>\$42,147,597</u>	<u>12,918</u>	<u>\$95,294,548</u>	<u>12,903</u>	<u>\$100,725,292</u>

AGE	YEARS OF SERVICE							
	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	97	1,013,344	-	-	-	-	-	-
30 to 34	292	3,488,146	7	52,352	-	-	-	-
35 to 39	322	3,432,566	43	449,510	4	28,864	-	-
40 to 44	365	3,448,705	20	191,617	18	190,412	1	2,957
45 to 49	519	4,928,055	29	353,431	13	139,423	7	68,841
50 to 54	600	5,642,801	52	560,590	15	204,999	11	132,171
55 to 59	521	4,609,577	59	657,280	31	365,028	14	194,831
60 to 64	355	2,928,311	76	734,934	27	299,354	22	246,879
65 & Up	86	473,669	10	110,714	6	24,380	1	12,697
<u>TOTAL</u>	<u>3,157</u>	<u>\$29,965,174</u>	<u>296</u>	<u>\$ 3,110,428</u>	<u>114</u>	<u>\$ 1,252,460</u>	<u>56</u>	<u>\$ 658,376</u>

AGE	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	1	\$ 4,980	-	\$ -	6,808	\$ 49,852,603
25 to 29	-	-	-	-	-	-	6,076	53,667,713
30 to 34	-	-	-	-	-	-	5,137	41,740,844
35 to 39	-	-	-	-	-	-	5,696	40,519,291
40 to 44	-	-	-	-	-	-	5,562	37,841,340
45 to 49	2	7,512	-	-	-	-	4,867	34,536,131
50 to 54	3	22,413	-	-	-	-	4,240	30,230,550
55 to 59	4	51,688	4	37,596	1	11,051	3,103	22,197,151
60 to 64	4	55,643	7	74,701	4	62,766	1,802	12,341,914
65 & Up	2	6,440	-	-	2	11,714	478	2,289,550
<u>TOTAL</u>	<u>15</u>	<u>143,696</u>	<u>12</u>	<u>\$ 117,277</u>	<u>7</u>	<u>\$ 85,531</u>	<u>43,769</u>	<u>\$325,217,087</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCOORDINATED MEMBERSSUMMARY OF PLAN1. 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 the 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

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 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. 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. 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 \$225 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 Annuities

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. Expenses

Paid by Association from retirement fund.

20. Actuarial Method

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

PERA VALUATION AS OF JUNE 30, 1979
(General Fund)

The purpose of this memorandum is to discuss the Valuation Report of the Public Employees' Retirement Association, dated November 20, 1979, which was submitted to the Commission in accordance with Minnesota Statutes, Chapter 356. The valuation was made using the entry age normal cost method and assuming 5% interest. The 1979 and 1978 valuation reports were completed by David H. Roenisch of Compensation and Capital, Consulting Actuaries.

This memorandum contains the following:

1. Statistical and Valuation Data
2. Discussion of Valuation Results
3. Conclusion

Although separate discussions of the Basic Group and the Coordinated Group are no longer required, the Report did contain both separate and consolidated information, and all three will be reviewed here.

A. BASIC GROUP

1. Statistical and Valuation Data

Results of the valuation reports as of June 30, 1978 and June 30, 1979 are shown for comparative purposes. Figures are rounded where necessary for simplicity of presentation.

	<u>As of</u> <u>June 30, 1978</u>	<u>As of</u> <u>June 30, 1979</u>
(1) <u>Membership</u>		
Active Members	14,262	13,486
Retired Members	7,699*	8,075
Disabled Members	417*	431
Survivors of Deceased Members	3,486*	3,641
Deferred Annuitants	1,029	1,138
(2) Payroll and Annuities Payable (Millions of Dollars)		
Covered Payroll	\$173.7	\$178.0
Annuities Payable (annual)	29.6	32.0

* Differs from figure given in 1978 Report.

	As of June 30, 1978	As of June 30, 1979
(3) <u>Valuation Balance Sheet</u>	(Millions of Dollars)	
Accrued Liability	\$778.0	\$838.6
Assets	<u>447.4</u>	<u>479.0</u>
Unfunded Accrued Liability (Deficit)	\$330.6	\$359.6
Funding Ratio (Assets/ Accrued Liability)	57.5%	57.1%
(4) <u>Normal Cost and Funding Costs</u>		
Normal Cost	13.528%	12.866%
Expenses	<u>0.148</u>	<u>0.148</u>
Normal Cost Plus Expenses	13.676%	13.014%
Normal Cost Plus Expenses	13.676%	13.014%
Interest on Deficit	<u>9.520</u>	<u>10.102</u>
Minimum Contribution	23.196%	23.116%
Normal Cost Plus Expenses	13.676%	13.014%
Amortization by 2009	<u>12.211</u>	<u>13.143</u>
Required Contribution	25.887%	26.157%
(5) <u>Statutory Contributions</u>		
Employee	8.0%	8.0%
Employer Regular	8.0	8.0
Employer Additional	<u>2.5</u>	<u>2.5</u>
Total Contributions	18.5%	18.5%

2. Discussion of Valuation Results

The normal cost declined from 13.528% to 12.866%, but no explanation was given for this change. The normal cost is determined as the ratio of the present value of future normal costs to the present value of future payroll. With a closed aging group like this one, the present value of future normal costs is likely to decline from one year to the next, but increases in salaries keep the present value of future salaries about level. Thus, the ratio would decrease.

On the other hand, since the contribution toward the deficit for this group separately does not come up to the minimum, the deficit for this group increases each year which means that the amortization figure also goes up. However, actuarial balance is not required for this group separately, and the adequacy of the total funding will be reviewed in the consolidation section of this Report.

The unfunded accrued liability increased by \$28,947,261. Increases came from salary increases in excess of the assumed rate, the contribution deficiency and from a mortality loss among retired lives. Interest earnings in excess of the assumed rate offset some of the increase. We were not able to pin down the numbers from these items.

B. COORDINATED GROUP

1. Statistical and Valuation Data

	As of <u>June 30, 1978</u>	As of <u>June 30, 1979</u>
(1) <u>Membership</u>		
Active Members	67,066	68,179
Retired Members	2,054*	2,347
Disabled Members	165*	197
Survivors of Deceased Members	45	58
Deferred Annuitants	203	256
(2) <u>Payroll and Annuities Payable</u>	(Millions of Dollars)	
Covered Payroll	\$589.8	\$640.0
Annuities Payable (annual)	3.6	4.1
(3) <u>Valuation Balance Sheet</u>		
Accrued Liability	\$258.8	\$299.2
Assets	<u>268.7</u>	<u>333.4</u>
Unfunded Accrued Liability (Deficit)	(\$ 9.9)	(\$ 34.7)
Funding Ratio (Assets/Accrued Liability)	103.8%	111.6%
(4) <u>Normal Cost and Funding Costs</u>		
Normal Cost	6.567%	6.826%
Expenses	<u>0.148</u>	<u>0.148</u>
Normal Cost Plus Expenses	6.715%	6.974%
Normal Cost Plus Expenses	6.715%	6.974%
Interest on Deficit	<u>(0.084)</u>	<u>(0.270)</u>
Minimum Contribution	6.631%	6.704%
Normal Cost Plus Expenses	6.715%	6.974%
Amortization by 2009	<u>(0.108)</u>	<u>(0.352)</u>
Required Contribution	6.607%	6.622%

* Differs from figure in 1978 Report

	<u>1978</u>	<u>1979</u>
(5) <u>Statutory Contributions</u>		
Employee	4.0%	4.0%
Employer Regular	4.0	4.0
Employer Additional	<u>1.5</u>	<u>1.5</u>
Total Contributions	9.5%	9.5%

The normal cost increased slightly and the change is within the bounds of normal fluctuation.

Although this part of the PERA fund is in an overfunded position (ratio 111.6%) when viewed separately, it must be kept in mind that the Legislature intends that all PERA employer additional contributions go toward the amortization of the total deficit. Therefore, a review of the combined report will be more meaningful.

The unfunded accrued liability for the Coordinated Group decreased by \$24,740,832 during the year. The PERA actuary shows the following breakdown:

Decreases came from support in excess of the minimum amount and from interest earnings in excess of the assumed rate. Increases included a mortality loss among retired lives and a salary scale loss. We were not able to pin down the numbers for these items.

C. CONSOLIDATED REPORT

Since the Basic Report shows a deficiency in financing and the Coordinated Report shows a surplus, the question arises as to whether the system as a whole is in balance. This question can be answered best by comparing the total requirement with the support either in percentages of payroll or in dollars. If the former basis is used, then the Statutory support is obtained by weighting the percentage contributions by the ratio of each group's payroll to the total.

The results as a percentage of payroll follow:

	<u>1978</u>	<u>1979</u>
Required Support		
Normal Cost	8.215%	8.281%
Expenses	0.148	0.148
Amortization	<u>2.694</u>	<u>2.585</u>
Total	11.057%	11.014%
Statutory Support		
Employee	4.910%	4.871%
Employer Regular	4.910	4.871
Employer Additional	<u>1.727</u>	<u>1.717</u>
Total	11.547%	11.459%
Excess	0.490%	0.445%

	<u>1978</u>	<u>1979</u>
The results in dollars follow:		
Required Support		
Normal Cost Plus Expense	\$63,355,965	\$67,768,255
Amortization	<u>20,568,918</u>	<u>21,137,402</u>
Total	\$83,924,883	\$88,905,657
Statutory Support		
Employee	\$37,485,496	\$39,822,563
Employer Regular	<u>37,485,496</u>	<u>39,822,563</u>
Sub Total	\$74,970,992	\$79,645,126
Employer Additional	<u>13,188,792</u>	<u>14,043,534</u>
Total	\$88,159,784	\$93,688,660
Excess	\$ 4,234,901	\$4,783,003

The total statutory support appears adequate to pay the normal cost and retire the deficit before 2009. In fact, the deficit could be retired in 19 to 20 years according to the above analysis.

5. CONCLUSION

The Report filed by PERA conforms with the statutes with two exceptions. The figures in the analysis of the change in the deficit need to be pinned down. Second, the quadrennial experience study was not included.

Under the present laws and standards, the financing for the Coordinated Group appears to be more than adequate but that for the Basic Group is not sufficient to retire the Basic deficit by 2009. However, when PERA-General Employees is viewed as one system, the financing is adequate.

Franklin C. Smith
Associate, Society of Actuaries
Commission Actuary

PERA VALUATION AS OF JUNE 30, 1979

(Police and Fire Fund)

The purpose of this memorandum is to discuss the valuation report of the PERA Police and Fire Fund, dated November 20, 1979, which was submitted to the Commission in accordance with Minnesota Statutes, Chapter 356. The valuation was made using the entry age normal cost method and assuming 5% interest. The 1979 and 1978 valuation reports were completed by Davis H. Roenisch of Compensation and Capital, Consulting Actuaries.

This memorandum contains the following:

1. Statistical and Valuation Data
2. Discussion of Valuation Results
3. Conclusion

1. Statistical and Valuation Data

Results of the valuation report are shown below. Figures are rounded where necessary for simplicity of presentation.

	As of <u>June 30, 1978</u>	As of <u>June 30, 1979</u>
(1) <u>Membership</u>		
Active Members	3,971	4,092
Retired Members	437*	515
Disabled Members	29*	30
Survivors of Deceased Members	276*	268
Deferred Annuitants	200	210
(2) <u>Payroll and Annuities Payable</u>		
Covered Payroll	\$59,933,726	\$68,125,873
Annuities Payable (annual)	2,421,612	2,931,102
(3) <u>Valuation Balance Sheet</u>	(Millions of Dollars)	
Accrued Liability	\$119.0	\$139.3
Assets	98.8	120.4
Unfunded Accrued Liability (Deficit)	\$ 21.1	\$ 18.9
Funding Ratio (Assets/Accrued Liability)	82.4%	86.4%

* Differs from figure in 1978 Report

	As of <u>June 30, 1978</u>	As of <u>June 30, 1979</u>
(4) <u>Normal Cost and Funding Costs</u>		
Normal Cost	15.867%	15.682%
Expenses	<u>0.089</u>	<u>0.089</u>
Normal Cost Plus Expenses	15.956%	15.771%
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Interest on Deficit	<u>1.762</u>	<u>1.388</u>
Minimum Contribution	17.718%	17.159%
Normal Cost Plus Expenses	15.956%	15.771%
Amortization by 2009	<u>2.260</u>	<u>1.806</u>
Required Contribution	18.316%	17.577%
(5) <u>Statutory Contributions</u>		
Employee	8.0%	8.0%
Employer Regular	12.0	12.0
Employer Additional	<u>0.0</u>	<u>0.0</u>
Total	20.0%	20.0%

2. Discussion of Valuation Results

The normal cost changed very little, and no comment is needed. The larger payroll has reduced contributions toward the deficit as a percentage of payroll.

The deficit decreased from \$21,125,817 to \$18,911,920 which is a drop of \$12,213,897. Decreases occurred from the level of support, interest earnings in excess of the assumed rate and a mortality gain among retired lives. Salary increases produced a loss which offset some of the gain. We were not able to pin down the figures.

3. Conclusion

The Report filed by PERA relative to the Police and Fire Fund conforms with the requirements of the various statutes with two exceptions. The figures in the analysis of the change in the deficit need to be pinned down. Second, the quadrennial experience study was not included.

The margin between the statutory contribution and the required support increased during the year.

Attention is also directed to the fact that the total financing of this plan is shared by the Employees and Employers.

Franklin C. Smith
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Commission Actuary