

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL VALUATION REPORT  
(Based on a June 30, 1980 Census)

 **FILE COPY**

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PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

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# COMPENSATION & CAPITAL INCORPORATED

125 SOUTH WACKER DRIVE

CHICAGO, ILLINOIS 60606

TELEPHONE 312 332-4420

November 28, 1980

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

Gentlemen:

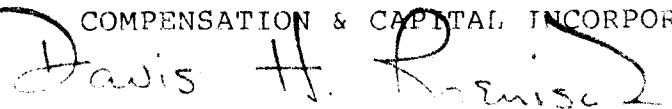
In accordance with your request, we have made an actuarial valuation of the Public Employees Retirement Association of the State of Minnesota for the year ended June 30, 1980, in order to determine the adequacy of the contributions being made to that system and to prepare the financial and actuarial 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, 1980.

Respectfully submitted,

COMPENSATION & CAPITAL INCORPORATED



Davis H. Roenisch  
Enrolled Actuary No. 174

DHR:kc

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

SUMMARY OF ACTUARIAL REQUIREMENTS  
(July 1, 1980)

General Fund  
Exhibit 8  
Page 21

Police and  
Fire Fund  
Exhibit 20  
Page 39

AMORTIZATION REQUIREMENTS

Present Value of Benefits (For Both Past and Future Service)	\$1,735,741,906	\$302,841,913
Obligation for Service Rendered to Date	✓ 1,262,499,353	161,723,394
Net Assets	✓ 923,152,292	143,124,478
Accrued Unfunded Obligation	✓ 339,347,061	18,598,916
Funding Ratio	✓ 73%	88%
Amortization (29-Year) Requirement	22,412,351	1,228,375
Covered Payroll	930,299,069	75,851,475
Amortization (29-Year) Rate Requirement	<u>2.409%</u>	<u>1.619%</u>

ENTRY AGE NORMAL RATE REQUIREMENTS

Value of Benefits to be Earned in the Future	\$ 473,242,553	\$141,118,519
Present Value of Future Payroll	5,809,894,000	910,842,700
Normal Cost Rate Requirement	8.145%	15.493%
Employee Contribution Rate	4.735*	8.000
Employer Normal Cost Rate Requirement	<u>3.410%</u>	<u>7.493%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law	6.419%*	12.000%
Amortization (30-Year) Rate Requirement	2.409%	1.619%
Normal Cost Rate Requirement	3.410	7.493
Allowance for Expenses	<u>0.148</u>	<u>0.089</u>
Total Requirement	<u>5.967%</u>	<u>9.201%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>0.452%</u>	<u>2.799%</u>

\* Weighted by Covered Payroll 18.38% Basic and 81.62% Coordinated.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Value of Benefits Earned to June 30, 1980

	<u>General Fund</u>	
	<u>Without Augmentation*</u>	<u>With Augmentation</u>
Benefits Payable to Retired Members and their Beneficiaries	\$348,569,825	\$348,569,825
Deferred Annuitants	11,255,528	11,255,528
Former Members without Vested Rights	7,721,362	7,721,362
Active Members:		
a. Eligible for Normal Retirement	49,850,594	49,850,594
b. Eligible for Early Retirement	130,172,200	130,172,200
c. Eligible for Deferred Benefits	393,075,248	570,421,056
d. Under 10 years service (Refund of Contributions only)	<u>62,628,996</u>	<u>62,628,996</u>
<u>Total</u>	<u>\$1,003,273,753</u>	<u>\$1,180,619,561</u>

	<u>Police and Fire Fund</u>	
Benefits Payable to Retired Members and their beneficiaries	\$ 36,112,505	\$ 36,112,505
Deferred Annuitants	2,384,482	2,384,482
Former Members without Vested Rights	376,467	376,467
Active Members:		
a. Eligible for Normal Retirement	19,785,280	19,785,280
b. Eligible for Early Retirement	-	-
c. Eligible for Deferred Benefits	66,752,160	88,251,136
d. Under 10 years service (Refund of Contribution only)	<u>13,387,587</u>	<u>13,387,587</u>
<u>Total</u>	<u>\$ 138,798,481</u>	<u>\$ 160,297,457</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, 1980 -

Assets

## Cash:

On hand	\$	100.00	
On deposit		<u>1,645,319.03</u>	\$ 1,645,419.03

## Accounts Receivable:

State General Fund	\$	54,121.50	
Employer contributions		21,604.72	
From Police and Fire Fund		84,857.05	
Interest on late employer contributions and delinquent payrolls		15,736.99	
Other		<u>3,933.05</u>	180,253.31

Accrued interest on investments			6,952,092.89
Accrued dividends			1,433,632.52
Prepaid interest			37,014.58
Prepaid expense			<u>33,169.28</u>

Total Current Assets			\$ 10,281,581.61
----------------------	--	--	------------------

## Investments:

Bonds - at amortized cost	\$292,467,614.56	
Common stock - at cost	238,879,125.08	
Short-term	<u>98,603,885.41</u>	629,950,625.05

Minnesota Post-Retirement Fund -  
at participation value

279,303,169.23

Deferred yield adjustment

3,632,796.19

Equipment, furniture and fixtures -  
less accumulated depreciation

154,779.00

Total Assets

\$923,322,951.08Current Liabilities and Reserves

## Liabilities:

Accounts payable	\$	170,659.22
------------------	----	------------

## Reserves:

Members accumulated contributions	258,890,661.12
Benefits reserve	384,958,461.51
Reserve for participation in Minnesota Post-Retirement Fund	<u>279,303,169.23</u>

Total Liabilities and Reserves

\$923,322,951.08

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRegular FundSources and Uses of Funds

- July 1, 1979 - June 30, 1980 -

SOURCESUSES

<u>Employee Contributions</u>	\$ 44,051,382.79	<u>Refunds</u>	
<u>Employer Contributions</u>	59,553,873.57	Employee	\$ 10,372,896.20
<u>Investment Income</u>	52,332,920.34	Employer	69,005.33
<u>Investment Sales and Redemptions</u>		<u>Interest Paid on Refunds</u>	577,978.43
<u>Bonds and Notes</u>	671,398,664.48	<u>Net Payments to Minnesota</u>	
<u>Stocks Sold</u>	45,563,024.84	<u>Post-Retirement Investment Fund</u>	22,147,911.29
<u>Cancelled Warrants</u>	288,588.71	<u>Benefits Paid</u>	
<u>Interest Other than Investment Interest</u>	230,956.18	Retirement	33,585,781.08
<u>Transfers from State General Fund</u>	4,398,635.92	Survivor	5,649,390.85
<u>Transfers from Police and Fire Fund</u>	80,864.78	Disability	2,334,992.54
<u>Miscellaneous Receipts</u>	5,457.76	<u>Direct Expense</u>	1,542,191.46
	\$877,904,369.37	<u>Investment Purchases</u>	
<u>Add Cash Balance, July 1, 1979</u>	24,099.29	Bonds	758,683,777.74
<u>Less Cash Balance, July 1, 1980</u>	(1,645,319.03)	Stocks	41,319,224.71
	<u>\$876,283,149.63</u>		
			<u>\$876,283,149.63</u>

Accounting Statement of Income and Expense

- July 1, 1979 to June 30, 1980 -

Income

Employer contributions 8%	\$14,150,054.04	
Employer contributions 2½%	4,421,910.06	
Employer contributions 4%	29,622,693.46	
Employer contributions 1½%	11,108,551.90	
Additional employer contributions	<u>277,778.46</u>	\$ 59,580,987.92
Member contributions		44,050,932.69
Transferred from Police and Fire Fund:		
Members contributions - active	\$ 5,395.80	
Employer contributions	<u>1,943.38</u>	7,339.18
Minnesota Post-Retirement Fund income		13,223,305.18
Investment income		46,049,910.03
Gain on sales of stock		14,662,802.44
Interest on refunds repaid		169,831.55
Interest on delinquent employer contributions and late payrolls		56,783.02
Unit matching contribution		392.89
State transfer for payment of special benefits, 1979 and 1980		4,338,030.00
Gain on trade-in of equipment		508.00
Other income		<u>606.35</u>
Total Income		\$182,141,429.25

Expense

Retirement annuities paid		\$33,403,842.06
Survivor benefits paid:		
Old Law	\$2,465,872.97	
With children	680,815.47	
Without children	<u>1,947,343.34</u>	5,094,031.78
Disability benefits paid		2,261,937.93
Disability survivors paid:		
With children	\$ 125,319.73	
Without children	<u>398,330.95</u>	523,650.68
Payment of death benefits		250.00
Refunds of Deposits:		
Active members due to withdrawal	\$9,704,596.27	
Active members due to death	<u>432,483.33</u>	10,137,079.60

Accounting Income and Expense (Continued)Expense (Continued)

## Refunds of Deposits: (Continued)

Deferred members due to withdrawal	\$ 112,347.35	
Deferred members due to death	<u>11,411.86</u>	\$ 123,759.21
Annuitants due to death	\$ 42,420.37	
Disabilitants due to death	<u>17,856.04</u>	60,276.41
Interest paid on refunds		573,739.92
Refunds of employer contributions		67,083.62
Transfers to Police and Fire Fund:		
Active members contributions	\$ 3,339.95	
Deferred members contributions	4,361.45	
Employer contributions	2,772.93	
Retirement reserves	<u>10,818.30</u>	21,292.63
Loss on sales of bonds	\$ 634,105.02	
Loss on sales of stock	<u>4,130,030.30</u>	4,764,135.32
Adjustments for prior year entries		9,319.81
Utilities charge from State		
Administration Department		17,472.00
Administrative expense		<u>1,445,077.42</u>
Total Expense		<u>\$ 58,502,948.39</u>
Excess of Income over Deductions		<u>\$123,638,480.86</u>

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Reconciliation of Asset Balances

- June 30, 1980 -

Asset Balance, July 1, 1979		\$812,971,818.76
Add:		
Employer contributions	\$59,581,380.81	
Employee contributions	44,050,932.69	
Employer and employee contributions transferred from Police and Fire Fund	7,339.18	
Realized income of the Minnesota Adjustable Fixed Benefit Fund	13,223,305.18	
Investment earnings	46,049,910.03	
Gains on sales of stock	14,662,802.44	
Interest on omitted contributions, delinquent employer contributions and refunds repaid	226,614.57	
State transfer for payment of special benefits	4,338,030.00	
Other income	1,114.35	
Total Additions		<u>\$182,141,429.25</u>
		\$995,113,248.01
Deduct:		
Benefits paid - Retirement	\$33,403,842.06	
Survivor	5,617,682.46	
Disability	2,261,937.93	
Death benefit payment	250.00	
		<u>\$41,283,712.45</u>
Refunds	10,388,198.84	
Interest paid on refunds	573,739.92	
Transfers to Police and Fire Fund	21,292.63	
Adjustments for prior year entries	9,319.81	
Losses on sales of bonds and stock	4,764,135.32	
Net adjustment to annuity stabilization reserve account	13,458,007.76	
Administrative expenses	1,462,549.42	
Total Deductions		<u>71,960,956.15</u>
		\$923,152,291.86
Current Liabilities and Accounts Payable		<u>170,659.22</u>
Asset Balance, June 30, 1980		<u><u>\$923,322,951.08</u></u>

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Comparative Balance Sheet

June 30, 1980 with June 30, 1979

	<u>1980</u>	<u>1979</u>	<u>Increase (Decrease)</u>
Assets:			
Cash	\$ 1,645,419.03	\$ 24,199.29	\$ 1,621,219.74
Employer contributions receivable	21,604.72	27,898.02	(6,293.30)
Other accounts receivable	158,648.59	180,592.10	(21,943.51)
Accrued interest and dividends	8,385,725.41	6,607,798.06	1,777,927.35
Minnesota Post-Retirement Investment Fund	279,303,169.23	257,389,960.52	21,913,208.71
Short-term investments	98,603,885.41	46,279,924.43	52,323,960.98
Long-term investments	531,346,739.64	498,302,317.94	33,044,421.70
Office equipment	154,779.00	28,883.53	125,895.47
Prepaid expense and interest	70,183.86	12,289.61	57,894.25
Deferred yield adjustment account	3,632,796.19	4,157,613.46	(524,817.27)
Total Assets	<u>\$923,322,951.08</u>	<u>\$813,011,476.96</u>	<u>\$110,311,474.12</u>
Liabilities:			
Accounts payable	\$ 170,659.22	\$ 39,658.20	\$ 131,001.02
Reserves:			
Members accumulated contributions	258,890,661.12	226,947,847.87	31,942,813.25
Benefits reserve	384,958,461.51	328,634,010.37	56,324,451.14
Minnesota Post-Retirement Fund	279,303,169.23	257,389,960.52	21,913,208.71
Total Liabilities and Reserves	<u>\$923,322,951.08</u>	<u>\$813,011,476.96</u>	<u>\$110,311,474.12</u>

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

EXHIBIT 4B

## Comparative Income and Expense Statement

For years ended June 30, 1980 and 1979

	1980	1979	Increase (Decrease)	Percentage Of Increase or (Decrease)
<b>Income:</b>				
Employer contributions -				
8% Basic	\$ 14,150,054.04	\$ 14,124,213.27	\$ 25,840.77	.18%
2½% Basic	4,421,910.06	4,414,098.44	7,811.62	.18
4% Coordinated	29,622,693.46	25,455,072.02	4,167,621.44	16.37
1½% Coordinated	11,386,330.36	9,645,271.65	1,741,058.71	18.05
Total Employer Contributions	\$ 59,580,987.92	\$ 53,638,655.38	\$ 5,942,332.54	11.08%
Employee contributions	\$ 44,050,932.69	\$ 39,776,777.77	\$ 4,274,154.92	10.75
Investment earnings	60,712,712.47	38,129,007.40	22,583,705.07	59.23
Interest on refunds repaid and Employer contributions	227,007.46	254,525.68	(27,518.22)	(10.81)
Transfers from Police & Fire Fund	7,339.18	28,011.47	(20,672.29)	---
Minnesota Post-Retirement Fund	13,223,305.18	13,620,630.16	(397,324.98)	(2.92)
State transfer for payment of Benefits	4,338,030.00	----	4,338,030.00	---
Other income	1,114.35	(19,618.07)	20,732.42	---
Gross Income	\$182,141,429.25	\$145,427,989.79	\$36,713,439.46	25.25%
<b>Expense:</b>				
Operating expenses -				
Salaries	\$ 824,589.58	\$ 725,134.00	\$ 99,455.58	13.71%
Office rent	45,592.44	58,778.76	(13,186.32)	(22.44)
Equipment rental	109,427.43	114,962.99	(5,535.56)	(4.82)
Other expenses	482,939.97	357,024.20	125,915.77	35.27
Nonoperating expenses -				
Interest paid on refunds	573,739.92	498,862.22	74,877.70	15.01
Annuities paid	33,403,842.06	28,741,644.74	4,662,197.32	16.22
Benefits paid -				
Survivor	5,094,031.78	4,310,310.09	783,721.69	18.18
Disability	2,261,937.93	2,024,043.12	237,894.81	11.75
Disability survivor	523,650.68	434,272.28	89,378.40	20.58
Refunds from members accounts -				
Due to withdrawal	9,816,943.62	9,204,075.54	612,868.08	6.66
Due to death	504,171.60	480,991.06	23,180.54	4.81
Other expenses -				
Unit refunds	67,083.62	57,528.47	9,555.15	16.61
Loss on sale of investments	4,764,135.32	1,424,028.17	3,340,107.15	---
From earnings	9,569.81	500.00	9,069.81	---
Transfer to Police & Fire Fund	21,292.63	25,211.93	(3,919.30)	---
Total Expenses	\$ 58,502,948.39	\$ 48,457,367.57	\$10,045,580.82	20.73%
Amount Held as Excess of Income over Deductions from Income	\$123,638,480.86	\$ 96,970,622.22	\$26,667,858.64	27.50%

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

SCHEDULE OF LEDGER BALANCES OF  
MEMBERS ACCUMULATED CONTRIBUTIONS

June 30, 1980

Members accumulated contributions - active	\$245,834,769.75
Members accumulated contributions - retired	7,182,023.05
Survivors Old Law accumulated contributions	----
Survivors with and without children accumulated contributions	470,038.77
Disability - accumulated contributions	1,029,214.51
Disability - survivors with and without children accumulated contributions	56,589.90
Members accumulated contributions - deferred	<u>4,318,025.14</u>
Total Members Accumulated Contributions	<u>\$258,890,661.12</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONASSET ALLOCATION

(July 1, 1980)

	<u>Basic Fund</u>	<u>Coordinated Fund</u>	<u>General Fund Total</u>
Asset Balance July 1, 1979	\$479,056,978.10	\$333,914,840.66	\$812,971,818.76
MPRF	220,703,283.62	36,686,676.90	257,389,960.52
General Fund	258,353,694.48	297,228,163.76	555,581,858.24
1. Employer Contributions	18,571,964.10	41,009,416.71	59,581,380.81
2. Employee Contributions	14,174,561.59	29,876,371.10	44,050,932.69
3. State Transfer for Special Benefits	3,822,429.01	515,600.99	4,338,030.00
4. Transfers from Police and Fire Fund	(13,953.45)	-	(13,953.45)
5. Benefits Paid			
i. Survivors	(5,519,608.18)	(98,074.28)	(5,617,682.46)
ii. Disability and Death	(1,955,449.27)	(306,738.66)	(2,262,187.93)
6. MPRF Annuity Stabilization Reserve	(11,594,455.66)	(1,863,552.10)	(13,458,007.76)
7. Refunds	(213,757.81)	(10,748,180.95)	(10,961,938.76)
8. Net (Items 1 to 7)	17,271,730.33	58,384,842.81	75,656,573.14
9. Benefits Paid from MPRF	(28,901,837.11)	(4,502,004.95)	(33,403,842.06)
10. Income from MPRF	11,316,053.85	1,907,251.33	13,223,305.18
11. Investment Income	26,118,470.56	30,048,515.70	56,166,986.26
12. Administrative Expenses	(403,136.54)	(1,059,412.88)	(1,462,549.42)
13. Net (Items 9 to 12)	8,129,550.76	26,394,349.20	34,523,899.96
14. Increase for Year (Sum of Items 8 and 13)	25,401,281.09	84,779,192.01	110,180,473.10
15. Asset Balance			
July 1, 1980	<u>\$504,458,259.19</u>	<u>\$418,694,032.67</u>	<u>\$923,152,291.86</u>
i. MPRF	238,580,403.55	40,722,765.68	279,303,169.23
ii. General Fund	265,877,855.64	377,971,266.99	643,849,122.63

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:	PFRA 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 EmployeesMORTALITY 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, 1980)General FundRESERVES

## Entry Age Normal Reserve

Retirement \$1,080,757,322

Vesting 127,524,534

Disability 69,531,718

Survivors 33,701,241

Refund 56,680,376

\$1,368,195,191

Less Value of Benefits  
Earned in the Future

473,242,553 \$894,952,638

Deferred Annuitants 11,255,528  
Former Members without 7,721,362  
Vested Rights

## Retired Members:

Minnesota

Post-Retirement

Fund Admitted Assets \$ 279,303,169\*

Disability 16,847,563

Survivors 45,345,621

## Reserve for Future

Old Law Survivors 6,642,385

## Plus Net Mortality Loss

Payable to

Minnesota Post-Retirement  
Fund

431,087 348,569,825 \$1,262,499,353

## Unfunded Obligation

339,347,061

## Funded Obligation

\$ 923,152,292

\* Retired Life Reserves are \$295,338,817.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS  
(July 1, 1980)General FundAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$1,735,741,906
Obligation for Service Rendered to Date	\$1,262,499,353	
Net Assets	923,152,292	
Accrued Unfunded Obligation	339,347,061	
Funding Ratio		73%
Amortization (29-Year) Requirement	\$ 22,412,351	
Covered Payroll	930,299,069	
Amortization (29-Year) Rate Requirement		<u>2.409%</u>

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	\$ 473,242,553	
Present Value of Future Payroll	5,809,894,000	
Normal Cost Rate Requirement	8.145%	
Employee Contribution Rate*	<u>4.735</u>	
Employer Normal Cost Rate Requirement		<u>3.410%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law*		6.419%
Amortization (29-Year) Rate Requirement	2.409%	
Normal Cost Rate Requirement	3.410	
Allowance for Expenses	<u>0.148</u>	
Total Requirement		<u>5.967%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		<u>0.452%</u>

\* Weighted by Covered Payroll 18.38% Basic and 81.62% Coordinated

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS  
(July 1, 1980)General FundAMORTIZATION RATE REQUIREMENT

	Period			
	<u>10-Year</u>	<u>20-Year</u>	<u>30-Year</u>	<u>40-Year</u>
Accrued Unfunded Obligation	\$339,347,061	\$339,347,061	\$339,347,061	\$339,347,061
Amortization Requirement	43,946,997	27,230,086	22,075,013	19,776,523
Covered Payroll	930,299,069	930,299,069	930,299,069	930,299,069
Amortization Rate Requirement	<u>4.724%</u>	<u>2.927%</u>	<u>2.373%</u>	<u>2.126%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law*	<u>6.419%</u>	<u>6.419%</u>	<u>6.419%</u>	<u>6.419%</u>
Amortization Rate Requirement	4.724%	2.927%	2.373%	2.126%
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>8.282%</u>	<u>6.485%</u>	<u>5.931%</u>	<u>5.684%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>(1.863%)</u>	<u>0.066%</u>	<u>0.488%</u>	<u>0.735%</u>

\* Weighted by Covered Payroll

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral FundSTATEMENT OF REVENUE, EXPENDITURES,  
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)  
(Year Ending June 30, 1980)Revenue:

Employer Contributions	\$59,581,380.81	
Member Contributions	44,050,932.69	
State Transfer for Special Benefits	4,338,030.00	
Investment Income	56,166,986.26	
Minnesota Post-Retirement Investment Fund Income	<u>13,223,305.18</u>	
Total Revenue		\$177,360,634.94

Expenditure:

Benefits	\$41,283,712.45	
Refund of Contributions	10,961,938.76	
Transfer to Police and Fire Fund	13,953.45	
Annuity Stabilization Reserve Adjustment	13,458,007.76	
Administrative Expense	<u>1,462,549.42</u>	
Total Expenditures		<u>67,180,161.84</u>
Increase in Assets (1980)		<u>\$110,180,473.10</u>

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	\$107,970,344	\$ 82,804,923 <sup>1</sup>	\$(25,165,421)
Investment Income	<u>69,390,291<sup>2</sup></u>	<u>40,648,591</u>	<u>(28,741,700)</u>
Total Income	177,360,635	123,453,514	(53,907,121)
Benefit Payments and Transfers	(53,722,154)	(53,722,154)	-
Exclusion of Annuity Stabilization Reserve	(13,458,008)	(13,458,008)	-
Increase in Reserves Based on Salary Change	-	66,645,911	66,645,911
Mortality Loss	-	431,087	431,087
Other Experience Variation <sup>3</sup>	<u>-</u>	<u>1,243,505</u>	<u>1,243,505</u>
Net Change	<u>\$110,180,473</u>	<u>\$124,593,855</u>	<u>\$ 14,413,382</u>

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

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral FundESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income Less Reserves	\$53,907,121
-----------------------------	--------------

Estimated Sources of Gain:

Amortization Payment	\$ 5,412,325	
Excess Interest (3.0% x Average Invested Assets)	26,041,832	
Contribution Rates Applied to Larger Payroll	10,077,821	
Excess in Contribution Rate	<u>4,779,143</u>	<u>46,311,121</u>
Actual Less Estimated Gain		<u>\$7,596,000</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSGeneral Fund

As of July 1, 1979	89,284
New Entrants	16,510
Reinstated	4,292
Transfer	-
TOTAL	<u>110,086</u>

Separations:

a. With Refund of Contributions	
(i) Death	223
(ii) Withdrawal	14,472
b. With Deferred Annuity	175
c. With Disability Annuity	169
d. With Normal Retirement Annuity	1,096
e. With Survivor Annuity	164
f. With Disability Survivor Annuity	-
TOTAL	<u>16,299</u>
Members as of July 1, 1980	93,787
Inactive Members*	<u>7,927</u>
Members Included in Entry Age Normal Cost Calculation	<u>85,860</u>

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

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ANNUITANTSGeneral FundNormal Retirement Annuitants

As of July 1, 1979	10,422
Additions During Year	1,271
Deletions During Year	-397
<u>Total as of July 1, 1980</u>	<u>11,296</u>

Annual Annuity - July 1, 1979	\$28,904,392
- July 1, 1980	\$32,049,940

Disability Annuitants

As of July 1, 1979	628
Additions During Year	169
Deletions During Year	-175
<u>Total as of July 1, 1980</u>	<u>622</u>

Annual Annuity - July 1, 1979	\$ 1,975,712
- July 1, 1980	\$ 2,208,764

Survivor Annuitants

(a) Spouse Only as of July 1, 1979	2,995
Optional Survivors as of July 1, 1979	157
Additional Spouse Only During Year*	144
Additional Optional Survivors During Year	29
Deletions During Year	-77
<u>Total as of July 1, 1980</u>	<u>3,248</u>

Annual Annuity - July 1, 1979	\$ 4,487,619
- July 1, 1980	\$ 4,863,045

(b) Survivor with Children as of July 1, 1979	179
Additions During Year	19
Deletions During Year	-35
<u>Total as of July 1, 1980</u>	<u>163</u>

Annual Annuity - July 1, 1979	\$ 411,580
- July 1, 1980	\$ 446,762

(c) Children as of July 1, 1979	368
Additions During Year	38
Deletions During Year	-119
<u>Total as of July 1, 1980</u>	<u>287</u>

Annual Annuity - July 1, 1979	\$ 383,899
- July 1, 1980	\$ 319,312

Deferred Vested Members

As of July 1, 1979	1,394
Additions During Year	175
Deletions During Year	-30
<u>Total as of July 1, 1980</u>	<u>1,539</u>

\* Includes Survivors with children at initial commencement date who have no dependent children at June 30, 1980.

Police and Fire FundAccounting Balance Sheet

- June 30, 1980 -

Assets

Cash on deposit		\$ 195,324.82
Accounts Receivable:		
State General Fund	\$ 60.00	
From Regular Fund	33,666.56	
Employer contributions	918.61	
Police State Aid	71,768.93	
New units	73,555.09	
Interest from new units	26,791.48	
Interest on late contributions	<u>1,370.55</u>	208,131.22
Accrued interest on investments		1,379,311.45
Accrued dividends		238,795.50
Prepaid interest		<u>8,396.18</u>
Total Current Assets		\$ 2,029,959.17
Investments:		
Bonds - at amortized cost	\$51,728,477.04	
Common stock - at cost	40,979,204.43	
Short-term	<u>18,366,436.48</u>	111,074,117.95
Long-term receivable - new units		479,716.53
Minnesota Post-Retirement Fund		29,244,752.63
Deferred yield adjustment		<u>381,304.70</u>
Total Assets		<u>\$143,209,850.98</u>

Current Liabilities and Reserves

Liabilities:		
Accounts payable		\$ 85,372.28
Reserves:		
Members accumulated contributions		33,387,970.48
Benefits reserve		80,491,755.59
Reserve for participation in Minnesota Post-Retirement Fund		<u>29,244,752.63</u>
Total Liabilities and Reserves		<u>\$143,209,850.98</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundSources and Uses of Funds

- July 1, 1979 - June 30, 1980 -

<u>SOURCES</u>		<u>USES</u>	
<u>Employee Contributions</u>	\$ 6,304,497.60	<u>Refunds</u>	
		Employee	\$ 971,983.24
<u>Employer Contributions</u>		Employer	11,069.02
12%	9,460,103.85		
Payments from New Units	68,256.20	<u>Interest Paid on Refunds</u>	57,266.41
<u>Police State Aid</u>	533,821.62	<u>Payments to Minnesota Post-Retirement Investment Fund</u>	2,691,049.49
<u>Investment Income</u>	9,193,083.48	<u>Annuities Paid</u>	
<u>Investment Sales and</u>		Retirement	2,714,846.18
<u>Redemptions</u>		Survivor	452,887.53
Bonds	138,429,803.39	Disability	142,415.55
Stocks	16,428,785.97	<u>Net Transfers to</u>	
<u>Interest Other than</u>		<u>Regular Fund</u>	80,864.78
<u>Investment Interest</u>	51,255.29	<u>Investment Purchases</u>	
<u>Cancelled Warrants</u>	35,855.49	Bonds	165,248,602.29
<u>Transfers From State</u>		Stocks	8,179,275.41
<u>General Fund</u>	157,456.96		
<u>Miscellaneous Receipts</u>	2,163.69		
	\$180,665,083.54		
Add Cash Balance,			
July 1, 1979	80,501.18		
Less Cash Balance,			
July 1, 1980	(195,324.82)		
	<u>\$180,550,259.90</u>		<u>\$180,550,259.90</u>

Police and Fire FundAccounting Statement of Income and Expense

- July 1, 1979 to June 30, 1980 -

Income

Employer contributions - 1979-1980		\$ 9,415,553.91
Employer contributions - other		44,271.59
Member contributions		6,304,756.15
Special income for Police State Aid		514,182.23
Transfer from Regular Fund:		
Member contributions	\$ 7,701.40	
Employer contributions	2,772.93	
Retirement reserves	<u>10,818.30</u>	21,292.63
Minnesota Post-Retirement Fund		1,336,510.44
Investment income		8,120,612.70
Gain on sales of stock		2,526,832.19
Interest on refunds repaid		16,617.76
Interest on delinquent employer contributions and late payrolls		21,265.48
Interest on purchased coverage from new units		26,791.48
Purchased coverage from new members		16,158.64
State transfer for payment of special benefits		157,290.00
Adjustment for prior year entries		<u>24,151.43</u>
Total Income		\$28,546,286.63

Expense

Retirement annuities paid		\$2,709,646.69
Survivor benefits paid:		
Old Law	\$ 82,406.17	
With children	153,299.42	
Without children	<u>177,217.54</u>	412,923.13
Disability benefits paid		127,206.38
Disability survivors paid:		
With children		15,705.00
Without children		22,764.60
Refunds of Deposits:		
Active members due to withdrawal	\$915,493.22	
Active members due to death	<u>1,509.19</u>	917,002.41
Deferred members due to withdrawal	\$ 42,779.44	
Deferred members due to death	<u>74.92</u>	42,854.36

Police and Fire FundAccounting Income and Expense (Continued)Expense (Continued)

Interest paid on refunds	\$	55,027.54	
Refunds of employer contributions		7,481.81	
Transfers to Regular Fund:			
Members contributions - active	\$	5,266.00	
Members contributions - deferred		129.80	
Employer contributions		<u>1,943.38</u>	7,339.18
Loss on sales of stock			600,192.38
Loss on sales of bonds			66,429.10
General administrative expense			<u>76,400.74</u>
Total Expense			<u>\$ 5,060,973.32</u>
Excess of Income over Expense for the year ended June 30, 1980			<u><u>\$23,485,313.31</u></u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPOLICE AND FIRE FUNDReconciliation of Asset Balances

- June 30, 1980 -

Asset Balance, July 1, 1979		\$120,427,887.70
Add:		
Employer contributions	\$9,459,825.50	
Employee contributions	6,304,756.15	
Special income - Police State Aid	514,182.23	
Employee and employer contributions transferred from Regular Fund	21,292.63	
Realized income of the Minnesota Adjustable Fixed Benefit Fund	1,336,510.44	
Investment Earnings	8,120,612.70	
Gains on sales of stock	2,526,832.19	
Purchased coverage from new units (including interest of \$26,791.48)	42,950.12	
Interest on omitted contributions, delinquent contributions and refunds repaid	37,883.24	
State transfer for payment of special benefits	157,290.00	
Adjustments for prior year entries	24,151.43	28,546,286.63
Total Additions		\$148,974,174.33
Deduct:		
Benefits paid -		
Retirement	\$2,709,646.69	
Survivor	451,392.73	
Disability	127,206.38	\$3,288,245.80
Refunds		967,338.58
Interest paid on refunds		55,027.54
Transfers to Regular Fund		7,339.18
Losses on sales of bonds and stocks		666,621.48
Net adjustment to annuity stabilization reserve account		788,722.31
General administrative expense		76,400.74
Total Deductions		5,849,695.63
		\$143,124,478.70
Current Liabilities and Accounts Payable		85,372.28
Asset Balance, June 30, 1980		<u>\$143,209,850.98</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundComparative Balance Sheet

June 30, 1980 and 1979

	<u>1980</u>	<u>1979</u>	<u>Increase (Decrease)</u>
<b>Assets:</b>			
Cash	\$ 195,324.82	\$ 80,501.18	\$ 114,823.64
Employer contributions receivable	918.61	1,142.17	(223.56)
Other accounts receivable	686,929.14	723,248.16	(36,319.02)
Accrued interest and dividends	1,618,106.95	1,148,530.12	469,576.83
Minnesota Post-Retirement Investment Fund	29,244,752.63	26,005,915.01	3,238,837.62
Short-term investments	18,366,436.48	7,455,504.31	10,910,932.17
Long-term investments	92,707,681.47	84,694,379.41	8,013,302.06
Prepaid interest	8,396.18	----	8,396.18
Deferred yield adjustment account	381,304.70	425,876.73	(44,572.03)
<b>Total Assets</b>	<u>\$143,209,850.98</u>	<u>\$120,535,097.09</u>	<u>\$ 22,674,753.89</u>
<b>Liabilities:</b>			
Accounts payable	\$ 85,372.28	\$ 107,209.39	\$ (21,837.11)
<b>Reserves:</b>			
Members accumulated contributions	33,387,970.48	28,292,739.82	5,095,230.66
Benefits reserve	80,491,755.59	66,129,232.87	14,362,522.72
Minnesota Post-Retirement Investment Fund	29,244,752.63	26,005,915.01	3,238,837.62
<b>Total Liabilities and Reserves</b>	<u>\$143,209,850.98</u>	<u>\$120,535,097.09</u>	<u>\$ 22,674,753.89</u>

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

## Police and Fire Fund

## Comparative Income and Expense Statement

For year ended June 30, 1980 and 1979

	<u>1979</u>	<u>1980</u>	<u>Increase (Decrease)</u>	<u>Percentage of Increase or (Decrease)</u>
<b>Income:</b>				
Employer contributions	\$ 9,459,825.50	\$ 8,433,975.06	\$1,025,850.44	12.16%
Employee contributions	6,304,756.15	6,234,689.36	70,066.79	1.12
Purchased coverage from new units	----	2,546,897.20	(2,546,897.20)	---
Investment earnings	10,647,444.89	6,393,795.00	4,253,649.89	66.53
Special income (Police State Aid)	514,182.23	441,360.40	72,821.83	16.50
Transfers from Regular Fund	21,292.63	25,211.93	(3,919.30)	15.55
Minnesota Post-Retirement Income	1,336,510.44	1,273,287.26	63,223.18	4.97
State transfer for payment of benefits	157,290.00	----	157,290.00	---
Other income	104,984.79	24,496.18	80,488.61	---
<b>Gross Income</b>	<b>\$28,546,286.63</b>	<b>\$25,373,712.39</b>	<b>\$3,172,574.24</b>	<b>12.50%</b>
<b>Expense:</b>				
Interest paid on refunds	\$ 55,027.54	\$ 32,456.89	\$ 22,570.65	69.54%
Annuities paid from MPRI Fund	2,709,646.69	2,231,295.99	478,350.70	21.44
Benefits paid -				
Survivor	412,923.13	346,481.11	66,442.02	19.18
Disability	127,206.38	140,260.19	(13,053.81)	(9.31)
Disability survivor	38,469.60	32,115.02	6,354.58	19.79
Refunds from members accounts -				
Due to withdrawal	958,272.66	628,272.91	329,999.75	52.52
Due to death	1,584.11	35,957.46	(34,373.35)	(95.60)
Other expenses -				
Unit refunds	7,481.81	22,216.21	(14,734.40)	(66.32)
From earnings	76,400.74	77,071.37	(670.63)	(.87)
Loss on sale of investments	666,621.48	175,722.67	490,898.81	279.36
Transfers to Regular Fund	7,339.18	28,011.47	(20,672.29)	---
<b>Total Expenses</b>	<b>\$ 5,060,973.32</b>	<b>\$ 3,749,861.29</b>	<b>\$1,311,112.03</b>	<b>34.96%</b>
<b>Amount Held as Excess of Income over Deductions from Income</b>	<b>\$23,485,313.31</b>	<b>\$21,623,851.10</b>	<b>\$1,861,462.21</b>	<b>8.6 %</b>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

SCHEDULE OF LEDGER BALANCES OF  
MEMBERS ACCUMULATED CONTRIBUTIONS

June 30, 1980

Members accumulated contributions - active	\$ 32,083,189.80
Members accumulated contributions - retired	561,684.19
Survivors with and without children accumulated contributions	66,290.97
Disability - accumulated contributions	78,238.48
Disability - survivors with and without children accumulated contributions	11,290.69
Members accumulated contributions - deferred	<u>587,276.35</u>
Total Members Accumulated Contributions	<u>\$ 33,387,970.48</u>

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 ASSOCIATIONFINANCIAL BALANCE SHEET  
(Year Commencing July 1, 1980)Police and Fire FundRESERVES

## Entry Age Normal Reserves

Retirement \$184,706,173

Vesting 14,349,863

Disability 50,359,907

Survivors 9,199,263

Refund 5,353,253

\$263,968,459

Less Value of Benefits to be  
Earned in the Future

\$141,118,519

\$122,849,940

Deferred Annuitants

2,384,482

Former Members without  
Vested Rights

376,467

Retired Members:  
Minnesota Post-  
Retirement Fund  
Admitted Assets

\$ 29,244,753\*

Disability 1,483,704

Survivors 5,117,565

Reserve for Future  
Old Law Survivors

285,562

Minus Net Mortality Gain  
Receivable from  
Minnesota Fund(19,079)36,112,505

\$161,723,394

Unfunded Obligation

18,598,916

Funded Obligation

\$143,124,478

\* Retired Life Reserves are \$29,686,512.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS  
(July 1, 1980)Police and Fire FundAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$302,841,913
Obligation for Service Rendered to Date	\$161,723,394	
Net Assets	143,124,478	
Accrued Unfunded Obligation	18,598,916	
Funding Ratio		88%
Amortization (29-Year) Requirement	1,228,375	
Covered Payroll	75,851,475	
Amortization (29-Year) Rate Requirement		1.619%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned In the Future	\$141,118,519	
Present Value of Future Payroll	910,842,700	
Normal Cost Rate Requirement		
Employee Contribution Rate	15.493%	
Employer Normal Cost Rate Requirement	<u>8.000</u>	
		<u>7.493%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		12.000%
Amortization (29-Year) Rate Requirement	1.619%	
Normal Cost Rate Requirement	7.493	
Allowance for Expenses	<u>0.089</u>	
Total Requirement		<u>9.201%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		<u>2.799%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS  
(July 1, 1980)Police and Fire FundAMORTIZATION RATE REQUIREMENT

	Period			
	<u>10-Year</u>	<u>20-Year</u>	<u>30-Year</u>	<u>40-Year</u>
Accrued Unfunded Obligation	\$18,598,916	\$18,598,916	\$18,598,916	\$18,598,916
Amortization Requirement	2,408,645	1,492,425	1,209,886	1,083,911
Covered Payroll	75,851,475	75,851,475	75,851,475	75,851,475
Amortization Rate Requirement	<u>3.175%</u>	<u>1.968%</u>	<u>1.595%</u>	<u>1.429%</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	3.175%	1.968%	1.595%	1.429%
Normal Cost Rate Requirement	7.493	7.493	7.493	7.493
Allowance for Expenses	<u>0.089</u>	<u>0.089</u>	<u>0.089</u>	<u>0.089</u>
Total Requirement	<u>10.757%</u>	<u>9.550%</u>	<u>9.177%</u>	<u>9.011%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>1.243%</u>	<u>2.450%</u>	<u>2.823%</u>	<u>2.989%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundSTATEMENT OF REVENUE, EXPENDITURES,  
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)  
(Year Ending June 30, 1980)Revenue:

Employer Contributions	\$ 9,459,825.50	
Member Contributions	6,304,756.15	
State Transfer for Special Benefits	157,290.00	
Special Income	514,182.23	
Investment Income	10,042,858.08	
Minnesota Post-Retirement Investment Fund Income	1,336,510.44	
Transfer from Regular Fund	13,953.45	
New Units	<u>42,950.12</u>	
Total Revenue		\$27,872,325.97

Expenditures:

Benefits	\$ 3,288,245.80	
Refund of Contributions	1,022,366.12	
Administrative Expense	76,400.74	
Annuity Stabilization Reserve Adjustment	788,722.31	
Total Expenditures		<u>5,175,734.97</u>

Increase in Assets (1980)		<u>\$22,696,591.00</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	\$15,921,872	\$11,629,095 <sup>1</sup>	\$ (4,292,777)
Investment Income	11,379,369 <sup>2</sup>	6,021,394	(5,357,975)
New Units and Transfers	56,903	56,903	-
Other Income	<u>514,182</u>	<u>-</u>	<u>(514,182)</u>
Total Income	27,872,326	17,707,392	(10,164,934)
Benefit Payments	(4,387,013)	(4,387,013)	-
Exclusion of Annuity Stabilization Reserve	(788,722)	(788,722)	-
Increase in Reserves Based on Salary Change	-	9,320,367	9,320,367
Mortality Gain	-	(19,079)	(19,079)
Other Experience Variation	<u>-</u>	<u>550,642</u>	<u>550,642</u>
Net Change	<u>\$22,696,591</u>	<u>\$22,383,587</u>	<u>\$ (313,004)</u>

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

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

Actual Income less Reserves		\$10,164,934
-----------------------------	--	--------------

Estimated Sources of Change:

Amortization Payment	\$ 284,652	
Excess Interest (3.1% x Average Invested Assets)	4,085,062	
Excess Contribution Rate	1,650,690	
Contribution Rate Applied to Larger Payroll	1,545,120	
Other Income	<u>514,182</u>	<u>8,079,706</u>
Actual Less Estimated Gain		<u>\$2,085,228</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSPolice and Fire Fund

As of July 1, 1979	4,400
New Entrants	396
Reinstated	<u>193</u>
TOTAL	<u>4,989</u>

Separations:

a. With Refund of Contribution	
(i) Death	10
(ii) Withdrawal	413
b. With Deferred Annuity	4
c. With Disability Annuity	7
d. With Normal Retirement Annuity	58
e. With Survivor Annuity	<u>5</u>
TOTAL	<u>497</u>
Members as of July 1, 1980	4,492
Inactive Members*	<u>307</u>
Members Included in Entry Age Normal Cost Calculation	<u>4,185</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 ANNUITANTSPolice and Fire FundNormal Retirement Annuitants

As of July 1, 1979	515
Additions During Year	62
Deletions During Year	-23
<u>Total as of July 1, 1980</u>	<u>554</u>
Annual Annuity - July 1, 1979	2,388,698
- July 1, 1980	2,732,763

Disability Annuitants

As of July 1, 1979	30
Additions During Year	7
Deletions During Year	-10
<u>Total as of July 1, 1980</u>	<u>27</u>
Annual Annuity - July 1, 1979	128,582
- July 1, 1980	148,153

Survivor Annuitants

(a) Spouse Only as of July 1, 1979	140
Optional Survivors as of July 1, 1979	15
Additional Spouse Only During Year*	5
Additional Optional Survivors During Year	7
Deletions During Year	-7
<u>Total as of July 1, 1980</u>	<u>160</u>
Annual Annuity - July 1, 1979	270,318
- July 1, 1980	322,528
(b) Survivor with Children as of July 1, 1979	35
Additions During Year	2
Deletions During Year*	-1
<u>Total as of July 1, 1980</u>	<u>36</u>
Annual Annuity - July 1, 1979	80,267
- July 1, 1980	109,912
(c) Children as of July 1, 1979	78
Additions During Year	18
Deletions During Year	-30
<u>Total as of July 1, 1980</u>	<u>66</u>
Annual Annuity - July 1, 1979	63,237
- July 1, 1980	65,429

Deferred Vested Members

As of July 1, 1979	210
Additions During Year	32
Deletions During Year	-26
<u>Total as of July 1, 1980</u>	<u>216</u>

\* Includes Survivors with children at initial commencement date who have no dependent children at June 30, 1980.

Police and Fire Fund

SUPPORTING EXHIBITS

Exhibit 26	Retired Prior to July 1, 1973	45
Exhibit 27	Retired Under Law in Force July 1, 1973 and Subsequent	46
Exhibit 28	Survivor Annuities	47
Exhibit 29	Disability Retirements	48
Exhibit 30	Considered Earnings - Male	49
Exhibit 31	Considered Earnings - Female	50
Exhibit 32	Summary of Plan	51 - 54

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

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
62	1	\$ 262.34	-	\$ -
63	4	630.36	-	-
64	1	275.39	-	-
65	6	1,545.71	-	-
66	3	1,326.13	1	140.24
67	6	1,264.46	-	-
68	6	1,359.25	-	-
69	3	644.10	-	-
70	8	2,404.09	-	-
71	10	2,800.70	-	-
72	8	2,537.02	1	383.07
73	11	3,094.58	-	-
74	16	4,650.88	1	228.58
75	9	2,757.94	1	99.93
76	8	1,475.84	-	-
77	8	1,920.96	-	-
78	14	3,660.43	-	-
79	10	3,173.44	1	244.82
80	12	5,525.19	-	-
81	8	2,134.86	1	73.81
82	2	493.87	1	260.07
83	5	1,097.94	-	-
84	4	1,223.31	-	-
85	4	688.63	-	-
86	2	281.60	-	-
91	1	240.36	-	-
TOTAL	<u>170</u>	<u>\$47,469.38</u>	<u>7</u>	<u>\$1,430.52</u>

Police and Fire Fund

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
55	6	\$ 2,796.36	-	\$ -
56	15	9,682.91	1	159.59
57	16	10,067.47	2	494.05
58	18	11,177.32	1	180.33
59	14	6,292.92	2	249.43
60	22	13,655.02	1	540.34
61	22	11,964.70	1	40.46
62	15	8,519.29	2	1,001.50
63	27	14,928.55	1	272.11
64	33	15,636.14	2	764.67
65	24	8,865.67	-	-
66	33	13,809.77	1	234.36
67	30	12,058.03	2	825.53
68	19	10,010.04	2	790.48
69	16	5,959.15	-	-
70	15	5,293.34	1	186.03
71	11	2,193.72	-	-
72	12	6,486.82	1	118.79
73	2	1,050.96	-	-
74	1	232.10	-	-
75	3	1,393.11	-	-
76	1	490.74	-	-
78	1	114.37	-	-
83	1	294.15	-	-
TOTALS	<u>357</u>	<u>\$172,972.65</u>	<u>20</u>	<u>\$5,857.67</u>

Survivor Annuities

Payable From Adjustable Fixed Benefit Fund

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
55	-	\$ -	1	\$ 411.56
57	-	-	1	318.46
58	-	-	1	173.07
59	-	-	1	261.86
61	-	-	3	629.12
62	-	-	1	238.20
63	-	-	4	705.44
64	-	-	1	245.14
65	-	-	2	588.28
67	-	-	1	256.04
68	-	-	1	194.73
70	-	-	1	50.02
71	-	-	1	73.80
74	-	-	1	125.43
75	1	160.36	1	36.83
83	-	-	1	71.01
84	-	-	1	45.48
TOTALS	<u>1</u>	<u>\$160.36</u>	<u>23</u>	<u>\$4,424.47</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>
29	1	\$361.59	60	4	\$ 792.12
31	1	372.79	61	3	661.61
32	1	450.00	62	12	1,877.57
33	2	524.13	63	3	426.98
34	1	405.68	64	5	1,179.72
37	2	730.80	65	1	28.11
38	1	450.00	66	5	579.27
42	2	263.46	67	4	357.30
43	1	330.60	68	3	679.90
44	2	606.75	69	6	968.02
45	4	1,203.12	70	3	281.29
46	2	793.20	71	7	795.41
47	3	601.68	72	7	1,012.08
48	5	1,309.25	73	4	462.74
49	3	878.22	74	3	356.19
50	2	485.02	75	4	547.03
51	3	848.73	76	7	854.73
52	2	406.80	77	3	246.86
53	5	787.15	78	3	392.17
54	4	1,217.47	79	1	70.92
55	6	1,252.85	80	5	491.76
56	2	176.22	81	6	665.44
57	4	796.70	83	2	274.13
58	1	445.69	84	5	582.95
59	2	736.35	85	2	233.81
			90	1	91.14
			92	1	108.35
TOTALS				<u>172</u>	<u>\$31,451.85</u>

CHILDREN

<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
<u>66</u>	<u>\$5,452.42</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundDISABILITY

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
34	1	\$ 436.27
35	1	485.50
36	1	246.98
37	1	746.51
40	1	639.17
41	1	729.01
43	1	559.27
44	1	304.10
45	3	1,677.68
46	1	368.04
47	2	836.14
48	3	749.80
50	2	858.55
51	1	186.49
52	2	966.71
53	1	221.14
54	1	919.31
55	3	1,415.40
TOTALS	<u>27</u>	<u>\$12,346.07</u>

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

## Police and Fire Fund

## CONSIDERED EARNINGS

Active Male Employees  
(Age and Service as of July 1, 1980)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	112	\$ 1,261,955	79	\$1,087,577	71	\$ 1,069,686	1	\$ 18,782
25 to 29	102	1,259,549	127	1,898,194	374	6,399,515	216	3,863,858
30 to 34	63	760,198	72	1,102,277	228	4,021,812	498	9,658,028
35 to 39	18	247,565	27	449,309	87	1,488,100	186	3,562,691
40 to 44	8	81,095	20	309,926	41	732,859	97	1,772,778
45 to 49	6	71,549	8	118,856	24	353,030	61	1,023,147
50 to 54	5	75,439	7	112,369	23	453,990	33	565,559
55 to 59	3	46,343	3	38,722	11	248,318	22	320,282
60 to 64	3	56,123	-	-	3	23,599	9	146,565
65 & Up	1	12,302	-	-	1	4,368	5	52,603
Total	321	\$ 3,872,118	343	\$5,117,230	863	\$14,795,277	1,128	\$20,984,293

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	5	96,719	-	-	-	-	-	-
30 to 34	106	2,159,599	8	168,277	-	-	-	-
35 to 39	258	5,383,346	32	761,012	2	49,737	-	-
40 to 44	163	3,318,701	101	2,254,335	20	464,209	2	46,596
45 to 49	90	1,836,182	83	1,746,760	48	1,096,667	15	342,640
50 to 54	62	1,205,270	49	1,044,972	60	1,368,901	39	906,627
55 to 59	44	755,619	45	907,041	30	626,644	16	329,473
60 to 64	24	424,200	17	318,719	10	195,417	9	169,767
65 & Up	9	111,783	2	42,963	2	37,674	1	25,566
Total	761	\$15,291,419	337	\$7,244,079	172	\$ 3,839,249	82	\$ 1,820,669

AGE	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		All	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	263	\$ 3,438,000
25 to 29	-	-	-	-	-	-	824	13,517,835
30 to 34	-	-	-	-	-	-	975	17,870,191
35 to 39	-	-	-	-	-	-	610	11,941,760
40 to 44	-	-	-	-	-	-	452	8,980,499
45 to 49	-	-	-	-	-	-	335	6,588,831
50 to 54	4	95,320	-	-	-	-	282	5,828,447
55 to 59	7	151,809	-	-	-	-	181	3,424,251
60 to 64	3	69,034	1	25,777	-	-	79	1,429,201
65 & Up	-	-	-	-	1	38,465	22	325,724
Total	14	\$ 316,163	1	\$ 25,777	1	\$ 38,465	4,023	\$73,344,739

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

## Police and Fire Fund

## CONSOLIDATED EARNINGS

Active Female Employees  
(Age and Service as of July 1, 1980)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	8	\$ 82,132	5	\$ 66,349	4	\$ 53,545	1	\$ 14,939
25 to 29	12	143,032	13	201,898	23	408,268	6	108,610
30 to 34	1	13,478	4	54,701	7	110,011	11	182,398
35 to 39	-	-	4	49,797	4	66,080	2	27,599
40 to 44	-	-	2	27,950	2	37,914	5	69,551
45 to 49	-	-	-	-	2	25,558	6	82,438
50 to 54	-	-	2	20,732	1	11,096	3	45,723
55 to 59	-	-	-	-	-	-	2	46,696
60 to 64	-	-	-	-	-	-	-	-
65 & Up	-	-	-	-	-	-	-	-
Total	<u>21</u>	<u>\$238,642</u>	<u>30</u>	<u>\$421,427</u>	<u>43</u>	<u>\$712,472</u>	<u>36</u>	<u>\$ 577,954</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	1	19,065	-	-	-	-	-	-
30 to 34	3	58,132	-	-	-	-	-	-
35 to 39	5	82,200	-	-	-	-	-	-
40 to 44	-	-	-	-	-	-	-	-
45 to 49	5	101,936	-	-	1	16,125	-	-
50 to 54	3	58,973	3	53,980	-	-	-	-
55 to 59	6	92,327	1	10,777	-	-	-	-
60 to 64	4	62,726	-	-	-	-	-	-
65 & Up	-	-	-	-	-	-	-	-
Total	<u>27</u>	<u>\$475,359</u>	<u>4</u>	<u>\$ 64,757</u>	<u>1</u>	<u>\$ 16,125</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	-	\$ -	-	\$ -	-	\$ -	18	\$ 216,965
25 to 29	-	-	-	-	-	-	55	880,873
30 to 34	-	-	-	-	-	-	26	418,720
35 to 39	-	-	-	-	-	-	15	225,676
40 to 44	-	-	-	-	-	-	9	135,415
45 to 49	-	-	-	-	-	-	14	226,057
50 to 54	-	-	-	-	-	-	12	190,504
55 to 59	-	-	-	-	-	-	9	149,800
60 to 64	-	-	-	-	-	-	4	62,726
65 & Up	-	-	-	-	-	-	-	-
Total	<u>-</u>	<u>\$ -</u>	<u>-</u>	<u>\$ -</u>	<u>-</u>	<u>\$ -</u>	<u>162</u>	<u>\$2,506,736</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. Service Maximum

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

#### 18. Expenses

Paid by Association from retirement fund.

#### 19. Actuarial Method

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

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

FINANCIAL BALANCE SHEET  
 (Year Commencing July 1, 1980)

Basic MembersRESERVES

## Entry Age Normal Reserves

Retirement	\$626,362,384	
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Vesting	40,880,099	
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Disability	39,448,845	
------------	------------	--

Survivors	25,345,859	
-----------	------------	--

Refund	<u>1,949,998</u>	
--------	------------------	--

	\$733,987,185	
--	---------------	--

Less Value of Benefits to be Earned in the Future		
--	--	--

	154,361,774	\$579,625,411
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Deferred Annuitants		10,026,546
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Former Members without Vested Rights		2,316,308
---	--	-----------

Retired Members:		
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Minnesota Fund		
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Admitted Assets	238,580,403*	
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Disability	14,409,178	
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Survivors	45,345,621	
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Reserve for Future		
--------------------	--	--

Old Law Survivors	6,642,385	
-------------------	-----------	--

Plus Net Mortality Loss		
-------------------------	--	--

Payable to		
------------	--	--

Minnesota Fund		
----------------	--	--

	<u>368,910</u>	
--	----------------	--

		<u>305,346,497</u>
--	--	--------------------

		\$897,314,762
--	--	---------------

Unfunded Obligation		<u>392,856,503</u>
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Funded Obligation		<u>\$504,458,259</u>
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\* Includes Annuity Stabilization Reserve. Retired Life Reserves are \$252,278,033.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS

(July 1, 1980)

Basic MembersAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$1,051,676,536
Obligation for Service		
Rendered to Date	\$ 897,314,762	
Net Assets	504,458,259	
Accrued Unfunded Obligation	392,856,503	
Funding Ratio		56%
Amortization (29-Year) Requirement	25,946,410	
Covered Payroll	170,978,559	
Amortization (29-Year) Rate Requirement		<u>15.175%</u>

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	\$ 154,361,774	
Present Value of Future Payroll	1,207,847,600	
Normal Cost Rate Requirement	12.780%	
Employee Contribution Rate	<u>8.000%</u>	
Employer Normal Cost Rate Requirement		<u>4.780%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		10.500%
Amortization (29-Year) Rate Requirement	15.175%	
Normal Cost Rate Requirement	4.780	
Allowance for Expenses	<u>0.148</u>	
Total Requirement		<u>20.103%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		<u>(9.603%)</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS  
(July 1, 1980)Basic MembersAMORTIZATION RATE REQUIREMENT

	Period			
	<u>10-Year</u>	<u>20-Year</u>	<u>30-Year</u>	<u>40-Year</u>
Accrued Unfunded Obligation	\$392,856,503	\$392,856,503	\$392,856,503	\$392,856,503
Amortization Requirement	50,876,714	31,523,822	25,555,879	22,894,955
Covered Payroll	170,978,559	170,978,559	170,978,559	170,978,559
Amortization Rate Requirement	<u>29.756%</u>	<u>18.437%</u>	<u>14.947%</u>	<u>13.391%</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	29.756%	18.437%	14.947%	13.391%
Normal Cost Rate Requirement	4.780	4.780	4.780	4.780
Allowance for Expenses	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>
Total Requirement	<u>34.684%</u>	<u>23.365%</u>	<u>19.875%</u>	<u>18.319%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>(24.184%)</u>	<u>(12.865%)</u>	<u>(9.375%)</u>	<u>(7.819%)</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersSTATEMENT OF REVENUE, EXPENDITURES,  
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)  
(Year Ending June 30, 1980)Revenue:

Employer Contribution	\$18,571,964.10	
Member Contributions	14,174,561.59	
State Transfer for Special Benefits	3,822,429.01	
Investment Income	26,118,470.56	
Minnesota Post-Retirement Investment Fund Income	<u>11,316,053.85</u>	
Total Revenue		\$74,003,479.11

Expenditure:

Benefits	\$36,376,894.56	
Refund of Contributions	213,757.81	
Transfers to Police and Fire Fund	13,953.45	
Annuity Stabilization Reserve Adjustment	11,594,455.66	
Administrative Expenses	<u>403,136.54</u>	
Total Expenditures		<u>48,602,198.02</u>

Increase in Assets (1980)		<u>\$25,401,281.09</u>
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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	\$36,568,955	\$40,879,042 <sup>1</sup>	\$ 4,310,087
Investment Income	<u>37,434,524<sup>2</sup></u>	<u>23,952,849</u>	<u>(13,481,675)</u>
Total Income	74,003,479	64,831,891	(9,171,588)
Benefit Payments and Transfers	(37,007,742)	(37,007,742)	-
Exclusion of Annuity Stabilization Reserve	(11,594,456)	(11,594,456)	-
Increase in Reserves Based on Salary Change	-	43,157,738	43,157,738
Mortality Loss	-	368,910	368,910
Other Experience Variation <sup>3</sup>	<u>-</u>	<u>(1,087,180)</u>	<u>(1,087,180)</u>
Net Change	<u>\$25,401,281</u>	<u>\$58,669,161</u>	<u>\$ 33,267,880</u>

1 Normal Cost Plus Interest on Unfunded

2 Includes MPRF Income

3 Includes Actual Less Estimated Income Gain

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income less Reserves		\$9,171,588
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Estimated Sources of Change:

Amortization Payment	\$ 5,412,325	
Excess Interest (3.0% x Average Invested Assets)	14,752,699	
Contribution Rate Applied to Smaller Payroll	(1,296,279)	
Deficit in Contribution Rate	<u>(13,628,348)</u>	<u>5,240,397</u>
Actual Less Estimated Gain		<u>\$3,931,191</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSBasic Members

As of July 1, 1979	17,110
New Entrants	1
Reinstated	61
Transfers	<u>-8</u>
TOTAL	<u>17,164</u>

Separations:

a. With Refund of Contributions	
(i) Death	56
(ii) Withdrawal	-77
b. With Deferred Annuity	122
c. With Disability Annuity	95
d. With Normal Retirement Annuity	686
e. With Survivor Annuity	<u>148</u>
TOTAL	<u>1,030</u>
Members as of July 1, 1980	16,134
Inactive Members*	<u>4,339</u>
Members Included in Entry Age Normal Cost Calculation	<u>11,795</u>

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

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ANNUITANTSBasic MembersNormal Retirement Annuitants

As of July 1, 1979	8,075
Additions During Year	808
Deletions During Year	-347
<u>Total as of July 1, 1980</u>	<u>8,536</u>
Annual Annuity - July 1, 1979	25,120,182
- July 1, 1980	27,619,026

Disability Annuitants

As of July 1, 1979	431
Additions During Year	95
Deletions During Year	-115
<u>Total as of July 1, 1980</u>	<u>411</u>
Annual Annuity - July 1, 1979	1,730,502
- July 1, 1980	1,886,585

Survivor Annuitants

(a) Spouse Only as of July 1, 1979	2,937
Optional Survivors as of July 1, 1979	157
Additional Spouse Only During Year*	119
Additional Optional Survivors During Year	29
Deletions During Year	-76
<u>Total as of July 1, 1980</u>	<u>3,166</u>

Annual Annuity - July 1, 1979	4,402,905
- July 1, 1980	4,757,252

(b) Survivor with Children as of July 1, 1979	179
Additions During Year	19
Deletions During Year*	-35
<u>Total as of July 1, 1980</u>	<u>163</u>

Annual Annuity - July 1, 1979	411,580
- July 1, 1980	446,762

(c) Children as of July 1, 1979	368
Additions During Year	38
Deletions During Year	-119
<u>Total as of July 1, 1980</u>	<u>287</u>

Annual Annuity - July 1, 1979	383,899
- July 1, 1980	319,312

Deferred Vested Members

As of July 1, 1979	1,138
Additions During Year	122
Deletions During Year	-24
<u>Total as of July 1, 1980</u>	<u>1,236</u>

\* Includes Survivors with children at initial commencement date who have no dependent children at June 30, 1980.

Basic Members

SUPPORTING EXHIBITS

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## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic MembersRetired Prior to July 1, 1973Payable From Adjustable Fixed Benefit Fund

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
65	2	\$ 474.76	-	\$ -
66	2	295.22	3	310.78
67	3	480.67	4	613.35
68	7	1,110.70	8	839.89
69	14	2,518.20	15	2,415.33
70	17	3,602.50	27	4,221.74
71	34	6,623.50	26	4,364.56
72	76	1,7659.22	58	9,551.96
73	158	35,548.12	127	19,566.79
74	135	29,868.52	136	21,204.52
75	138	29,998.80	110	17,728.53
76	113	25,407.80	122	20,113.99
77	122	26,970.19	116	18,223.11
78	139	30,063.46	127	21,581.39
79	150	34,360.99	99	16,718.09
80	126	27,303.57	97	16,798.15
81	124	26,623.77	102	16,708.76
82	102	21,772.76	76	14,511.02
83	101	19,612.71	71	14,051.69
84	104	23,816.60	71	12,807.39
85	90	20,010.10	61	10,080.77
86	88	19,196.36	45	7,866.03
87	59	12,894.51	41	6,053.70
88	51	11,536.73	41	5,938.87
89	52	11,021.17	28	5,515.03
90	21	4,836.03	24	3,951.64
91	27	5,424.77	22	3,934.96
92	21	4,288.58	9	1,599.41
93	17	3,117.08	12	1,592.16
94	10	1,735.62	7	1,750.03
95	6	928.98	7	809.96
96	5	1,193.67	5	821.25
97	7	1,252.76	2	226.05
98	1	72.42	3	622.45
99	1	172.55	-	-
100	-	-	1	148.55
102	1	174.12	-	-
103	1	136.25	-	-
106	-	-	1	183.22
TOTALS	<u>2,125</u>	<u>\$462,103.76</u>	<u>1,704</u>	<u>\$283,425.12</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersRetired Under Law in Force July 1, 1973 and SubsequentPayable 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>
58	4	\$ 2,288.66	2	\$ 382.89
59	10	5,319.79	16	5,374.61
60	18	8,437.01	20	4,303.28
61	22	8,639.32	25	6,744.74
62	33	20,759.73	39	10,662.37
63	107	57,719.66	74	22,516.31
64	128	76,682.57	89	27,654.11
65	174	89,610.64	156	45,408.73
66	316	137,267.05	268	74,214.24
67	280	109,015.96	285	75,132.17
68	292	113,692.56	298	69,541.72
69	260	96,304.47	234	60,319.16
70	258	94,103.73	235	49,350.52
71	213	69,874.26	208	40,807.51
72	138	48,902.46	132	25,263.61
73	54	18,169.14	46	9,960.46
74	36	11,320.21	31	5,336.90
75	27	7,913.07	14	1,256.55
76	17	3,963.17	16	2,953.79
77	19	7,665.82	13	1,929.95
78	9	1,829.71	7	937.09
79	12	5,613.60	6	905.35
80	6	4,030.85	2	187.52
81	9	1,673.17	10	1,373.83
82	6	1,290.16	2	215.13
83	2	715.62	2	166.74
84	-	-	4	614.53
85	2	975.26	-	-
86	2	107.85	-	-
88	1	787.96	-	-
89	1	818.63	-	-
90	1	34.34	-	-
TOTAL	<u>2,457</u>	<u>\$1,005,526.43</u>	<u>2,234</u>	<u>\$543,513.81</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>
51	1	\$ 399.55	-	\$ -
56	-	-	1	378.78
59	-	-	1	439.94
60	-	-	1	383.45
61	-	-	1	373.11
68	-	-	1	384.23
70	-	-	1	419.31
73	2	863.87	1	479.70
77	1	486.34	-	-
78	1	465.06	-	-
79	-	-	1	487.50
80	-	-	1	482.44
82	1	487.12	-	-
84	-	-	1	485.94
TOTALS	<u>6</u>	<u>\$2,701.94</u>	<u>10</u>	<u>\$4,314.40</u>

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

<u>AGE</u>	<u>NUMBER</u>	<u>MALE</u> <u>MONTHLY ANNUITY</u>	<u>NUMBER</u>	<u>FEMALE</u> <u>MONTHLY ANNUITY</u>
44	1	\$ 40.93	-	\$ -
46	-	-	1	147.11
52	-	-	1	177.91
53	1	33.70	1	229.57
55	-	-	1	177.22
56	-	-	4	1,013.10
58	-	-	5	1,692.85
59	-	-	2	606.33
60	-	-	5	1,514.56
61	1	152.79	5	1,148.76
62	-	-	9	2,176.14
63	-	-	8	1,160.58
64	-	-	9	2,738.48
65	-	-	11	2,037.15
66	-	-	12	3,975.39
67	1	117.56	10	1,776.09
68	-	-	7	826.22
69	1	234.71	10	3,461.32
70	-	-	9	2,277.13
71	-	-	6	1,794.41
72	1	319.86	9	2,071.47
73	-	-	7	1,662.83
74	1	35.26	3	171.85
75	1	144.09	3	465.68
76	1	288.81	5	1,824.09
77	-	-	7	1,575.66
78	1	392.83	3	417.74
79	-	-	4	560.32
80	-	-	1	370.01
81	-	-	1	110.88
82	-	-	1	479.01
83	-	-	4	690.19
84	-	-	5	1,341.31
85	-	-	2	243.74
89	-	-	1	159.90
91	-	-	1	55.27
TOTALS	<u>10</u>	<u>\$1,760.54</u>	<u>173</u>	<u>\$41,130.27</u>

Annuities Payable for a Certain Period Not Dependent on Age

<u>Number</u>	<u>Monthly Annuity</u>
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6\$1,356.24

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersDISABILITY RETIREMENTS

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
33	2	\$ 670.73	-	\$ -
36	1	235.04	-	-
43	1	284.45	-	-
44	2	666.32	-	-
45	1	197.85	1	202.37
46	1	289.84	1	103.65
48	1	173.30	-	-
49	4	1,991.03	1	242.70
50	6	2,853.29	2	704.41
51	6	3,791.41	3	494.00
52	2	748.19	2	337.20
53	8	4,353.67	2	329.68
54	5	2,393.50	1	116.25
55	9	5,216.07	6	1,152.77
56	13	6,062.87	2	787.43
57	20	9,535.61	9	1,341.50
58	17	7,785.82	10	1,749.97
59	14	6,619.30	8	1,436.06
60	15	5,911.32	9	1,469.86
61	24	10,369.48	9	2,190.23
62	34	14,139.73	12	4,115.93
63	41	20,372.23	20	4,502.72
64	34	15,105.38	19	4,093.71
65	23	10,384.19	10	1,694.32
TOTALS	<u>284</u>	<u>\$130,150.62</u>	<u>127</u>	<u>\$27,064.76</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>
29	1	\$ 450.00	69	83	\$ 9,134.25
30	1	363.64	70	91	9,988.15
36	1	370.27	71	88	10,202.03
37	3	982.25	72	90	9,949.06
38	3	651.82	73	104	10,938.30
39	1	282.11	74	86	8,980.49
41	3	937.05	75	117	12,075.57
42	5	1,345.56	76	98	10,124.00
43	5	1,236.54	77	120	12,335.46
44	4	1,315.19	78	122	13,045.68
45	11	3,570.26	79	115	11,982.05
46	6	1,429.18	80	98	11,405.33
47	8	1,749.21	81	106	11,119.88
48	13	3,295.19	82	100	10,865.06
49	10	2,474.32	83	118	11,590.19
50	12	2,978.06	84	83	8,963.47
51	24	5,156.74	85	83	8,086.79
52	26	5,453.14	86	73	7,182.55
53	21	4,094.51	87	80	7,729.28
54	28	4,904.53	88	53	4,808.14
55	23	4,884.47	89	45	3,730.53
56	35	7,416.57	90	23	2,177.96
57	34	6,478.91	91	34	2,734.34
58	53	9,018.78	92	29	2,776.90
59	47	9,120.45	93	17	1,483.40
60	53	10,675.57	94	14	1,188.33
61	57	9,632.51	95	10	782.34
62	53	10,191.73	96	5	349.11
63	74	9,797.69	97	3	242.03
64	72	10,812.28	98	3	326.56
65	71	8,366.05	99	1	82.34
66	63	6,856.84	100	2	168.31
67	91	10,449.26	101	1	205.16
68	86	9,818.77	106	1	112.25
			TOTALS	<u>3,094</u>	<u>\$383,424.74</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic MembersSURVIVOR ANNUITIESMALE

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
50	1	\$ 207.34
51	1	106.76
54	1	305.29
59	1	385.03
62	3	334.00
64	1	450.00
66	3	325.05
67	6	1,110.77
68	4	338.93
69	1	327.91
71	1	165.92
72	2	169.40
74	1	127.07
75	2	122.07
76	3	240.63
77	1	136.54
78	1	138.78
79	4	412.81
81	2	90.52
82	1	26.74
84	2	259.39
85	3	128.85
93	1	86.28
TOTALS	<u>46</u>	<u>\$5,996.08</u>

CHILDREN

<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
<u>287</u>	<u>\$26,609.33</u>

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

## Basic Members

## CONSIDERED EARNINGS

Active Male Employees  
(Age and Service as of July 1, 1980)

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	-	-	-	-	-	-	-	-
30 to 34	-	-	-	-	15	101,606	2	18,980
35 to 39	-	-	-	-	1	30,239	2	44,792
40 to 44	-	-	-	-	1	16,758	7	131,597
45 to 49	-	-	-	-	3	43,647	4	64,469
50 to 54	-	-	-	-	3	43,332	1	25,000
55 to 59	-	-	-	-	4	69,816	9	125,450
60 to 64	-	-	-	-	10	137,064	4	73,122
65 & Up	-	-	-	-	1	12,389	5	31,668
<u>TOTAL</u>	-	\$ -	-	\$ -	38	\$ 454,851	34	\$ 515,078

	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	50	888,631	7	120,020	-	-	-	-
35 to 39	189	3,430,527	171	3,218,901	11	196,438	1	25,553
40 to 44	234	3,867,802	387	7,054,305	183	3,421,531	11	190,401
45 to 49	202	3,241,534	373	6,618,688	314	6,116,925	130	2,588,973
50 to 54	218	3,241,489	361	5,970,936	383	6,888,879	315	6,060,066
55 to 59	203	2,850,656	460	7,423,869	408	7,012,751	353	6,648,283
60 to 64	174	2,290,703	340	4,984,705	318	4,996,013	301	5,146,695
65 & Up	54	585,046	94	1,178,739	66	845,770	58	887,981
<u>TOTAL</u>	<u>1,324</u>	<u>\$20,396,388</u>	<u>2,193</u>	<u>\$36,570,163</u>	<u>1,683</u>	<u>\$29,478,307</u>	<u>1,169</u>	<u>\$ 21,547,952</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	-	-	-	-	-	-	-	-
30 to 34	-	-	-	-	-	-	74	1,129,237
35 to 39	-	-	-	-	-	-	375	6,946,450
40 to 44	-	-	-	-	-	-	823	14,682,394
45 to 49	9	186,569	-	-	-	-	1,035	18,860,805
50 to 54	93	1,926,553	2	34,292	-	-	1,376	24,190,547
55 to 59	206	4,239,513	18	365,394	-	-	1,661	28,735,732
60 to 64	119	2,241,790	19	359,811	7	134,523	1,292	20,364,426
65 & Up	20	324,204	5	120,700	1	9,501	304	3,995,998
<u>TOTAL</u>	<u>447</u>	<u>\$ 8,918,629</u>	<u>44</u>	<u>\$ 880,197</u>	<u>8</u>	<u>\$ 144,024</u>	<u>6,940</u>	<u>\$118,905,589</u>

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

## Basic Members

## CONSIDERED EARNINGS

Active Female Employees  
(Age and Service as of July 1, 1980)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	2	\$ 5,884	-	\$ -
25 to 29	-	-	-	-	5	21,231	2	6,737
30 to 34	-	-	-	-	2	6,396	2	34,471
35 to 39	-	-	-	-	1	3,392	2	21,500
40 to 44	-	-	-	-	2	8,465	3	35,513
45 to 49	-	-	-	-	2	22,470	6	40,438
50 to 54	-	-	-	-	1	1,301	11	110,227
55 to 59	-	-	-	-	1	6,142	13	155,693
60 to 64	-	-	-	-	7	54,524	9	104,111
65 & Up	-	-	-	-	4	30,096	2	6,346
<u>TOTAL</u>	-	\$ -	-	\$ -	27	\$ 159,901	50	\$ 515,036

	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	1	12,678	-	-	-	-	-	-
30 to 34	59	719,692	21	277,988	-	-	-	-
35 to 39	101	1,563,312	93	1,337,383	6	101,808	-	-
40 to 44	139	1,453,631	84	1,241,156	51	731,472	8	121,076
45 to 49	296	2,755,325	162	2,028,254	58	892,171	30	456,991
50 to 54	489	4,222,294	320	3,441,288	97	1,269,818	55	774,175
55 to 59	513	4,411,390	452	4,768,436	191	2,442,117	95	1,385,040
60 to 64	376	2,937,314	398	4,041,782	208	2,302,229	82	1,090,018
65 & Up	88	618,465	85	765,333	52	504,536	18	210,220
<u>TOTAL</u>	2,062	\$18,694,101	1,615	\$17,901,620	663	\$8,244,151	288	\$ 4,037,520

AGE	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	2	\$ 5,884
25 to 29	-	-	-	-	-	-	8	40,646
30 to 34	-	-	-	-	-	-	84	1,038,547
35 to 39	-	-	-	-	-	-	203	3,027,395
40 to 44	-	-	-	-	-	-	287	3,591,313
45 to 49	4	54,940	-	-	-	-	558	6,250,589
50 to 54	36	602,622	6	96,452	-	-	1,015	10,518,177
55 to 59	27	461,309	14	233,268	-	-	1,306	13,863,395
60 to 64	25	429,848	16	244,303	6	117,108	1,127	11,321,237
65 & Up	7	126,694	6	102,982	3	51,115	265	2,415,787
<u>TOTAL</u>	99	\$ 1,675,413	42	\$ 677,005	9	\$ 168,223	4,855	\$52,072,970

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. Service Maximum

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

20. Expenses

Paid by Association from retirement fund.

21. Actuarial Method

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

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

FINANCIAL BALANCE SHEET  
(Year Commencing July 1, 1980)Coordinated MembersRESERVES

## Entry Age Normal Reserves

Retirement \$454,394,938

Vesting 86,644,435

Disability 30,082,873

Survivors 8,355,382

Refund 54,730,378

\$634,208,006

Less Value of Benefits to be  
Earned in the Future

318,880,779

\$315,327,227

Deferred Annuitants

1,228,982

Former Members without  
Vested Rights

5,405,054

Retired Members:

Minnesota Fund

Admitted Assets

40,722,766\*

Disability

2,438,385

Plus Net Mortality Loss  
Payable to

Minnesota Fund

62,17743,223,328

\$365,184,591

Unfunded Obligation

(53,509,442)

Funded Obligation

\$418,694,033

\* Includes Annuity Stabilization Reserve. The Retired Life Reserves are \$43,060,784.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS  
(July 1, 1980)Coordinated MembersAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$684,065,370
Obligation for Service Rendered to Date	\$ 365,184,591	
Net Assets	418,694,033	
Accrued Unfunded Obligation	(53,509,442)	
Funding Ratio		115%
Amortization (29-Year) Requirement	(3,534,059)	
Covered Payroll	759,320,510	
Amortization (29-Year) Rate Requirement		<u>(0.465%)</u>

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	\$ 318,880,779	
Present Value of Future Payroll	4,602,046,400	
Normal Cost Rate Requirement	6.929%	
Employee Contribution Rate	<u>4.000</u>	
Employer Normal Cost Rate Requirement		<u>2.929%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		5.500%
Amortization (29-Year) Rate Requirement	(0.465%)	
Normal Cost Rate Requirement	2.929	
Allowance for Expenses	<u>0.148</u>	
Total Requirement		2.612%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		<u>2.888%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS  
(July 1, 1980)Coordinated MembersAMORTIZATION RATE REQUIREMENT

	Period			
	<u>10-Year</u>	<u>20-Year</u>	<u>30-Year</u>	<u>40-Year</u>
Accrued Unfunded Obligation	\$ (53,509,442)	\$ (53,509,442)	\$ (53,509,442)	\$ (53,509,442)
Amortization Requirement	(6,929,718)	(4,293,736)	(3,480,886)	(3,118,432)
Covered Payroll	759,320,510	759,320,510	759,320,510	759,320,510
Amortization Rate Requirement	<u>(0.913%)</u>	<u>(0.565%)</u>	<u>(0.458%)</u>	<u>(0.411%)</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	(0.913%)	(0.565%)	(0.458%)	(0.411%)
Normal Cost Rate Requirement	2.929	2.929	2.929	2.929
Allowance for Expenses	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>
Total Requirement	<u>2.164%</u>	<u>2.512%</u>	<u>2.619%</u>	<u>2.666%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>3.336%</u>	<u>2.988%</u>	<u>2.881%</u>	<u>2.834%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersSTATEMENT OF REVENUE, EXPENDITURES,  
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)  
(Year Ending June 30, 1980)Revenue:

Employer Contributions	\$41,009,416.71	
Member Contributions	29,876,371.10	
State Transfer for Special Benefits	515,600.99	
Investment Income	30,048,515.70	
Minnesota Post-Retirement Investment Fund Income	<u>1,907,251.33</u>	
Total Revenue		\$103,357,155.83

Expenditure:

Benefits	\$ 4,906,817.89	
Refund of Contributions	10,748,180.95	
Annuity Stabilization Reserve Adjustment	1,863,552.10	
Administrative Expense	<u>1,059,412.88</u>	
Total Expenditures		<u>18,577,963.82</u>

Increase in Assets (1980)		<u>\$ 84,779,192.01</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	\$ 71,401,389	\$41,925,881 <sup>1</sup>	\$(29,475,508)
Investment Income	<u>31,955,767<sup>2</sup></u>	<u>16,695,742</u>	<u>(15,260,025)</u>
Total Income	103,357,156	58,621,623	(44,735,533)
Benefit Payments	(16,714,412)	(16,714,412)	-
Exclusion of Annuity Stabilization Reserve	(1,863,552)	(1,863,552)	-
Increase in Reserves Based on Salary Change	-	23,488,173	23,488,173
Mortality Loss	-	62,177	62,177
Other Experience Variation <sup>3</sup>	<u>-</u>	<u>2,330,685</u>	<u>2,330,685</u>
Net Change	<u>\$84,779,192</u>	<u>\$65,924,694</u>	<u>\$(18,854,498)</u>

1 Normal Cost Plus Interest on the Unfunded

2 Includes MPRF Income

3 Includes Actual Less Estimated Income Gain

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersESTIMATED SOURCE OF GAIN FROM INCOME

Actual Income less Reserves		\$44,735,533
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Estimated Sources of Gain:

Excess Interest (3.0% x Average Invested Assets)	\$11,289,133	
Contribution Rate Applied to Larger Payroll	11,374,100	
Excess Contribution Rate	<u>18,407,491</u>	<u>41,070,724</u>
Actual Less Estimated Gain		<u>\$ 3,664,809</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSCoordinated Members

As of July 1, 1979	72,174
New Entrants	16,509
Reinstated	4,231
Transfer	<u>8</u>
TOTAL	<u>92,922</u>

Separations:

a. With Refund of Contributions	
(i) Death	167
(ii) Withdrawal	14,549
b. With Deferred Annuity	53
c. With Disability Annuity	74
d. With Normal Retirement Annuity	410
e. With Survivor Annuity	<u>16</u>
TOTAL	<u>15,269</u>
Members as of July 1, 1980	77,653
Inactive Members*	<u>3,588</u>
Members Included in Entry Age Normal Cost Calculation	<u>74,065</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, 1979	2,347
Additions During Year	463
Deletions During Year	-50

<u>Total as of July 1, 1980</u>	<u>2,760</u>
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Annual Annuity - July 1, 1979	\$3,784,210
- July 1, 1980	\$4,430,914

Disability Annuitants

As of July 1, 1979	197
Additions During Year	74
Deletions During Year	-60

<u>Total as of July 1, 1980</u>	<u>211</u>
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Annual Annuity - July 1, 1979	245,210
- July 1, 1980	322,179

Survivor Annuitants

Spouse Only	
As of July 1, 1979	58
Additions During Year	25
Deletions During Year	-1

<u>Total as of July 1, 1980</u>	<u>82</u>
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Annual Annuity - July 1, 1979	\$ 84,714
- July 1, 1980	\$ 105,793

Deferred Vested Members

As of July 1, 1979	256
Additions During Year	53
Deletions During Year	-6

<u>Total as of July 1, 1980</u>	<u>303</u>
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Coordinated Members

SUPPORTING EXHIBITS

Exhibit 57	Retired Prior to July 1, 1973	82
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PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersRetired Prior to July 1, 1973

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
64	1	\$ 611.42	-	\$ -
67	1	44.30	-	-
69	-	-	1	52.45
70	3	281.22	2	182.48
71	2	325.60	5	736.63
72	28	2,332.10	13	1,499.34
73	67	6,891.19	31	3,124.99
74	64	6,589.67	30	2,963.17
75	78	7,378.07	32	3,009.30
76	66	5,682.73	24	2,230.23
77	63	6,152.57	24	3,290.83
78	28	2,345.76	20	1,532.79
79	20	1,482.98	10	1,034.01
80	19	2,431.55	8	1,196.08
81	7	1,008.68	9	1,449.31
82	5	604.72	5	278.26
83	5	815.15	1	87.03
84	6	487.96	2	147.05
85	2	618.07	3	523.09
86	4	513.79	-	-
87	1	77.90	2	428.28
88	3	210.57	-	-
89	1	51.23	1	185.98
90	2	299.69	1	195.87
TOTALS	<u>476</u>	<u>\$47,236.92</u>	<u>224</u>	<u>\$24,147.17</u>

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

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
59	2	\$ 331.92	1	\$ 96.10
60	4	1,355.99	2	383.38
61	2	417.30	3	179.10
62	13	2,763.64	10	2,235.83
63	45	7,188.95	23	1,910.89
64	39	9,036.40	24	2,515.96
65	87	18,361.29	40	6,205.32
66	160	26,614.60	87	9,414.81
67	206	31,094.64	108	10,705.28
68	165	24,574.01	86	9,398.03
69	172	28,017.77	94	10,985.66
70	148	21,321.16	81	8,462.49
71	138	20,427.27	55	7,633.44
72	85	12,904.46	34	5,299.54
73	34	4,769.96	18	1,493.66
74	15	2,779.61	12	758.41
75	22	3,080.96	6	702.94
76	7	661.29	3	164.12
77	8	868.64	2	98.53
78	2	112.51	-	-
79	2	66.97	1	275.80
80	3	379.97	1	81.84
81	3	350.68	1	170.73
82	2	45.66	-	-
83	2	1,127.46	1	13.48
88	1	20.33	-	-
TOTALS	<u>1,367</u>	<u>\$218,673.44</u>	<u>693</u>	<u>\$79,185.34</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersPayable From Adjustable Fixed Benefit FundSURVIVOR ANNUITIESFEMALE

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
36	1	\$ 33.14
54	1	59.13
56	2	147.54
57	1	48.56
59	2	193.16
60	4	401.26
61	1	224.51
62	4	532.72
63	6	1,430.25
64	6	423.37
65	7	609.34
66	4	465.35
67	1	17.69
68	6	463.19
69	4	384.96
70	4	488.67
71	3	186.76
72	2	234.68
73	1	92.62
74	3	343.94
75	2	73.96
76	2	330.72
77	2	124.30
79	1	193.46
80	2	231.67
84	1	58.10
87	1	146.96
88	1	138.42
TOTALS	<u>75</u>	<u>\$8,078.43</u>

MALES

<u>AGE</u>	<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
67	1	\$ 258.54
87	<u>1</u>	<u>161.99</u>
	<u>2</u>	<u>\$ 420.53</u>

Annuities Payable for a Certain Period Not Dependent on Age

<u>NUMBER</u>	<u>MONTHLY ANNUITY</u>
<u>5</u>	<u>\$317.10</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersDISABILITY RETIREMENTS

AGE	MALE		FEMALE	
	NUMBER	MONTHLY ANNUITY	NUMBER	MONTHLY ANNUITY
34	1	\$ 81.38	-	\$ -
38	-	-	1	45.25
47	1	197.09	-	-
48	2	189.60	1	101.29
49	1	139.07	-	-
50	2	430.87	-	-
51	2	479.27	-	-
52	3	876.94	1	36.16
53	3	240.12	4	88.62
54	3	392.61	3	264.40
55	7	625.59	3	656.06
56	3	299.10	4	321.25
57	9	1,115.06	3	699.19
58	7	785.45	7	253.94
59	9	1,080.27	3	258.28
60	6	700.14	1	68.53
61	15	1,694.93	7	430.30
62	12	2,310.56	10	913.97
63	21	2,768.62	6	456.61
64	20	4,499.12	8	731.89
65	15	2,270.92	7	345.76
TOTALS	<u>142</u>	<u>\$21,176.71</u>	<u>69</u>	<u>\$5,671.50</u>

## PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

## Coordinated Members

## CONSIDERED EARNINGS

## Active Male Employees

(Age and Service as of July 1, 1980)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	1,000	\$ 8,465,499	504	\$ 5,230,928	463	\$ 5,388,047	51	\$ 654,064
25 to 29	1,045	10,719,870	754	9,074,037	1,464	20,141,939	912	13,094,155
30 to 34	1,714	14,986,061	617	8,485,855	1,295	19,425,154	1,773	29,367,824
35 to 39	360	4,035,545	300	4,091,385	642	9,874,170	1,014	17,403,873
40 to 44	241	2,544,460	190	2,397,936	445	6,458,323	743	11,685,763
45 to 49	238	2,495,300	170	1,882,761	409	5,641,844	690	10,195,475
50 to 54	188	1,915,799	152	1,881,981	416	5,239,447	787	11,095,944
55 to 59	184	1,796,482	138	1,442,594	349	4,321,970	742	10,131,318
60 to 64	89	696,654	89	889,890	267	3,007,378	563	7,044,134
65 & Up	61	406,811	37	186,064	116	720,911	258	2,195,316
<u>TOTAL</u>	<u>5,120</u>	<u>\$48,062,481</u>	<u>2,951</u>	<u>\$35,563,431</u>	<u>5,866</u>	<u>\$80,219,193</u>	<u>7,533</u>	<u>\$112,867,866</u>

	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	32	524,032	-	-	-	-	-	-
30 to 34	412	7,577,094	15	258,457	1	18,592	-	-
35 to 39	617	11,701,751	57	1,133,069	4	70,187	-	-
40 to 44	505	9,364,365	121	2,653,878	27	586,399	5	110,057
45 to 49	482	8,592,616	115	2,717,847	80	1,864,559	15	321,389
50 to 54	517	8,407,817	155	3,062,777	86	1,902,997	61	1,580,697
55 to 59	571	8,862,779	166	2,891,863	109	2,188,311	71	1,499,403
60 to 64	456	6,860,645	142	2,349,377	111	1,843,518	54	972,617
65 & Up	131	1,439,517	36	493,709	24	420,538	5	92,777
<u>TOTAL</u>	<u>3,723</u>	<u>\$63,330,616</u>	<u>807</u>	<u>\$15,560,977</u>	<u>442</u>	<u>\$ 8,895,101</u>	<u>211</u>	<u>\$ 4,576,940</u>

AGE	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$ -	-	\$ -	-	\$ -	2,018	\$ 19,738,538
25 to 29	-	-	-	-	-	-	4,207	53,554,033
30 to 34	-	-	-	-	-	-	5,827	80,119,047
35 to 39	-	-	-	-	-	-	2,994	48,309,980
40 to 44	-	-	-	-	-	-	2,277	35,801,181
45 to 49	2	49,098	-	-	-	-	2,201	33,760,889
50 to 54	22	542,278	2	52,569	-	-	2,386	35,682,306
55 to 59	36	858,005	8	199,985	-	-	2,374	34,192,710
60 to 64	22	478,519	5	132,358	-	-	1,798	24,275,090
65 & Up	2	28,464	1	34,166	1	11,601	672	6,029,874
<u>TOTAL</u>	<u>84</u>	<u>\$ 1,956,364</u>	<u>16</u>	<u>\$ 419,078</u>	<u>1</u>	<u>\$ 11,601</u>	<u>26,754</u>	<u>\$371,463,648</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated MembersCONSIDERED EARNINGS

Active Female Employees  
(Age and Service as of July 1, 1980)

AGE	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	2,465	\$16,515,898	1,493	\$11,471,727	1,432	\$12,070,976	166	\$1,603,195
25 to 29	1,728	13,655,758	1,262	11,722,047	2,309	23,549,432	1,558	16,250,041
30 to 34	1,480	9,847,755	1,086	8,180,423	1,738	16,440,432	1,529	17,971,633
35 to 39	1,237	7,733,945	933	6,251,897	1,867	14,495,409	1,467	14,010,866
40 to 44	905	5,568,527	740	4,735,269	1,718	12,181,093	2,018	16,308,759
45 to 49	662	3,980,045	470	3,114,988	1,304	9,053,783	2,048	15,805,846
50 to 54	474	2,776,954	370	2,420,873	1,021	7,281,595	1,831	14,027,337
55 to 59	304	1,840,184	240	1,472,051	668	4,542,537	1,493	11,194,561
60 to 64	152	887,636	97	579,148	369	2,371,629	914	6,110,149
65 & Up	78	451,605	30	125,807	116	528,719	311	1,742,354
<u>TOTAL</u>	<u>9,485</u>	<u>\$63,258,307</u>	<u>6,721</u>	<u>\$50,074,230</u>	<u>12,542</u>	<u>\$102,515,605</u>	<u>13,335</u>	<u>\$115,024,741</u>

	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	2	\$23,837	-	\$-	-	\$-	-	\$-
25 to 29	68	793,062	1	16,157	-	-	-	-
30 to 34	418	5,718,392	11	140,682	-	-	-	-
35 to 39	488	6,835,178	28	491,459	-	-	-	-
40 to 44	543	5,857,933	38	513,370	12	195,551	1	9,225
45 to 49	706	7,115,121	35	515,067	8	142,088	5	66,353
50 to 54	817	8,127,245	73	950,600	16	272,579	10	192,716
55 to 59	812	7,705,660	75	1,031,535	26	367,808	15	235,670
60 to 64	581	5,324,045	80	937,293	39	491,914	17	272,398
65 & Up	215	1,442,403	27	266,195	14	152,026	6	69,131
<u>TOTAL</u>	<u>4,650</u>	<u>\$48,942,876</u>	<u>368</u>	<u>\$4,862,358</u>	<u>115</u>	<u>\$1,621,966</u>	<u>54</u>	<u>\$845,493</u>

AGE	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		ALL	
	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS	NO.	EARNINGS
Under 25	-	\$-	-	\$-	-	\$-	5,558	\$41,685,633
25 to 29	-	-	-	-	-	-	6,926	65,986,497
30 to 34	-	-	-	-	-	-	6,262	58,299,317
35 to 39	-	-	-	-	-	-	6,020	49,818,754
40 to 44	-	-	-	-	-	-	5,975	45,369,727
45 to 49	2	28,278	1	14,894	-	-	5,241	39,836,463
50 to 54	1	18,911	1	12,650	-	-	4,614	36,081,460
55 to 59	11	201,172	7	95,645	-	-	3,651	28,686,823
60 to 64	8	149,289	3	52,262	5	90,789	2,265	17,266,552
65 & Up	1	16,096	-	-	1	31,300	799	4,825,636
<u>TOTAL</u>	<u>23</u>	<u>\$413,746</u>	<u>12</u>	<u>\$175,451</u>	<u>6</u>	<u>\$122,089</u>	<u>47,311</u>	<u>\$387,856,862</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. Service Maximum

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

20. Expenses

Paid by Association from retirement fund.

21. Actuarial Method

For purposes of reports to the Legislative Commission 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, 1980  
(General Fund)

The purpose of this memorandum is to discuss valuation reports of the Public Employees Retirement Association which were submitted to the Commission in accordance with Minnesota Statutes, Chapter 356. The valuations were made using the entry age normal cost method and assuming 5% interest. Although a separate memorandum was prepared on the 1979 Valuation, the Commission's schedule did not permit a review of it, and the results are incorporated into this memorandum. The 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 reports 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, are shown for comparative purposes. Figures are rounded where necessary for simplicity of presentation.

	<u>1978</u>	<u>1979</u>	<u>1980</u>
(1) <u>Membership</u>			
Active Members	14,262	13,486	11,795
Retired Members	7,699*	8,075	8,536
Disabled Members	417*	431	411
Survivors of Deceased			
Members	3,623	3,641	3,616
Deferred Annuitants	1,029	1,138	1,236
(2) Payroll and Annuities Payable (Millions of Dollars)			
Covered Payroll	\$173.7	\$178.0	\$171.0
Annuities Payable			
(Annual)	29.6	32.0	36.0

\* Differs from figure given in 1978 Report.

	<u>1978</u>	<u>1979</u>	<u>1980</u>
(3) <u>Valuation Balance Sheet</u>	(Millions of Dollars)		
Accrued Liability	\$778.0	\$838.6	\$897.3
Assets	<u>447.4</u>	<u>479.0</u>	<u>504.4</u>
Unfunded Accrued Liability (Deficit)	\$330.6	\$359.6	\$392.9
Funding Ratio (Assets/ Accrued Liability)	57.5%	57.1%	56.2%
(4) <u>Normal Cost and Funding Costs</u>			
Normal Cost	13.528%	12.866%	12.780%
Expenses	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>
Normal Cost Plus Expenses	13.676%	13.014%	12.928%
Normal Cost Plus Expenses	13.676%	13.014%	12.928%
Interest on Deficit	<u>9.520</u>	<u>10.102</u>	<u>11.488</u>
Minimum Contribution	23.196%	23.116%	24.416%
Normal Cost Plus Expenses	13.676%	13.014%	12.928%
Amortization by 2009	<u>12.211</u>	<u>13.143</u>	<u>15.175</u>
Required Contribution	25.887	26.157%	28.103%
(5) <u>Statutory Contributions</u>			
Employee	8.0%	8.0%	8.0%
Employer Regular	8.0	8.0	8.0
Employer Additional	<u>2.5</u>	<u>2.5</u>	<u>2.5</u>
Total Contributions	18.5%	18.5%	18.5%
(6) Investment Yield*	6.72%	7.51%	8.57%

\* Rate of return on mean assets excluding Minnesota Post Retirement Fund.

## 2. Discussion of Valuation Results

The normal cost declined from 13.528% in 1978 to 12.866% in 1979, 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 from 1978 to 1979, and then by \$33,267,880 from 1979 to 1980. An approximate analysis of these changes follows:

<u>Increases:</u>	<u>1978-79</u>	<u>1979-80</u>
Salary Scale Loss	\$33,381,173	\$43,157,738
Contribution Deficiency	7,064,822	4,310,087
Mortality Loss-Retireds	216,774	368,910
Total Increase	\$40,662,769	\$47,836,735
<u>Decreases:</u>		
Excess Interest	\$ 8,554,955	\$ 8,897,251
Net Capital Gain	374,594	4,584,424
Other Actuarial Gains	2,785,959	1,087,180
Total Decreases	\$11,715,508	\$14,568,855
Net Increase	\$28,947,261	\$33,267,880

#### B. COORDINATED GROUP

##### 1. Statistical and Valuation Data

	<u>1978</u>	<u>1979</u>	<u>1980</u>
(1) <u>Membership</u>			
Active Members	67,066	68,179	74,065
Retired Members	2,054*	2,347	2,760
Disabled Members	165*	197	211
Survivors of Deceased Members	45	58	82
Deferred Annuitants	203	256	303
(2) <u>Payroll and Annuities Payable</u> (Millions of Dollars)			
Covered Payroll	\$589.8	\$640.0	\$759.3
Annuities Payable (annual)	3.6	4.1	4.9
(3) <u>Valuation Balance Sheet</u>			
Accrued Liability	\$258.8	\$299.2	\$365.2
Assets	268.7	333.9	418.7
Unfunded Accrued Liability (Deficit)	(\$ 9.9)	(\$ 34.7)	(\$ 53.5)
Funding Ratio (Assets/Accrued Liability)	103.8%	111.6%	114.7%
(4) <u>Normal Cost and Funding Costs</u>			
Normal Cost	6.567%	6.826%	6.929
Expenses	0.148	0.148	0.148
Normal Cost Plus Expenses	6.715%	6.974%	7.077%

	<u>1978</u>	<u>1979</u>	<u>1980</u>
(4) <u>Normal Cost and Funding Costs (cont'd.)</u>			
Normal Cost Plus Expenses	6.715%	6.974%	7.077%
Interest on Deficit	(0.084)	(0.270)	(0.352)
Minimum Contribution	<u>6.631%</u>	<u>6.704%</u>	<u>6.725%</u>
Normal Cost Plus Expenses	6.715%	6.974%	7.077%
Amortization by 2009	(0.108)	(0.352)	(0.465)
Required Contribution	<u>6.607%</u>	<u>6.622%</u>	<u>6.612%</u>

\* Differs from figure in 1978 Report

(5) Statutory Contributions

Employee	4.0%	4.0%	4.0%
Employer Regular	4.0	4.0	4.0
Employer Additional	<u>1.5</u>	<u>1.5</u>	<u>1.5</u>
Total Contributions	<u>9.5%</u>	<u>9.5%</u>	<u>9.5%</u>

(6) <u>Investment Yield</u>	6.32%	6.73%	7.62%
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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 114.7%) 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 from 1978 to 1979 and then by \$18,854,498 from 1979 to 1980. An approximate analysis of these changes follows:

	<u>1978-79</u>	<u>1979-80</u>
<u>Decreases:</u>		
Amortization	\$22,218,172	\$29,475,508
Capital Gain	523,325	5,274,243
Excess Interest	5,980,193	9,985,782
Mortality Gain - Retirees	0	0
Other Actuarial Gains	<u>0</u>	
Total Decrease	\$28,721,690	\$ 44,735,533
<u>Increases:</u>		
Salary Increases	\$ 1,785,041	\$23,488,173
Mortality Loss - Retirees	35,458	62,177
Other Actuarial Losses	<u>2,160,359</u>	<u>2,330,685</u>
Total Increase	\$ 3,980,858	\$25,881,035
Net Decrease	\$24,740,832	\$18,854,498

### C. CONSOLIDATED REPORT

Since the Basic Reports show deficiencies in financing and the Coordinated Reports show surpluses, 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>	<u>1980</u>
Required Support			
Normal Cost	8.215%	8.281%	8.145%
Expenses	0.148	0.148	0.148
Amortization	<u>2.694</u>	<u>2.585</u>	<u>2.409</u>
Total	11.057%	11.014%	10.702%
Statutory Support			
Employee	4.910%	4.871%	4.735%
Employer Regular	4.910	4.871	4.735
Employer Additional	<u>1.727</u>	<u>1.717</u>	<u>1.684</u>
Total	11.547%	11.459%	11.154%
Excess	0.490%	0.445%	0.452%

	<u>1978</u>	<u>1979</u>	<u>1980</u>
The results in dollars follow:			
Required Support			
Normal Cost Plus Expenses	\$63,355,965	\$67,768,255	\$ 75,841,220
Amortization	<u>20,568,918</u>	<u>21,137,402</u>	<u>22,412,351</u>
Total	\$83,924,883	\$88,905,657	\$ 98,253,571
Statutory Support			
Employee	\$37,485,496	\$39,822,563	\$ 44,051,101
Employer Regular	<u>37,485,496</u>	<u>39,822,563</u>	<u>\$ 44,051,101</u>
Sub Total	\$74,970,992	\$79,645,126	\$ 88,102,202
Employer Additional	<u>13,188,792</u>	<u>14,043,534</u>	<u>15,664,271</u>
Total	\$88,159,784	\$93,688,660	\$103,766,473
Excess	\$ 4,234,901	\$ 4,783,003	\$ 5,512,902

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. However, until we get a better picture of the effect of phasing out the Basic Group, we believe that it would be premature to consider changes in the support rates.

## CONCLUSION

The Reports filed by PERA conform with the statutes with one exception. The quadrennial experience study was not included with the 1979 report. We understand that this study is in process, and a memorandum on this will be presented at a later time.

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, 1980

(Police and Fire Fund)

The purpose of this memorandum is to discuss the valuation reports of the PERA Police and Fire Fund which were submitted to the Commission in accordance with Minnesota Statutes, Chapter 356. The valuations were made using the entry age normal cost method and assuming 5% interest. Although a separate memorandum was prepared on the 1979 valuation, the Commission's schedule did not permit a review of it, and the results are incorporated into this memorandum. The valuation reports were compiled 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 reports as of June 30, 1978, June 30, 1979 and June 30, 1980, are shown below. Figures are rounded where necessary for simplicity of presentation.

	<u>1978</u>	<u>1979</u>	<u>1980</u>
(1) <u>Membership</u>			
Active Members	3,971	4,092	4,185
Retired Members	437*	515	554
Disabled Members	29*	30	27
Survivors of Deceased Members	276*	268	262
Deferred Annuitants	200	210	216
(2) <u>Payroll and Annuities Payable</u>			
Covered Payroll	\$59,933,726	\$68,125,873	\$75,851,475
Annuities Payable (annual)	2,421,612	2,931,102	3,378,785
(3) <u>Valuation Balance Sheet</u> (Millions of Dollars)			
Accrued Liability	\$119.1	\$139.3	\$161.7
Assets	<u>98.0</u>	<u>120.4</u>	<u>143.1</u>
Unfunded Accrued Liability	\$ 21.1	\$ 18.9	\$ 18.6
(Deficit)			
Funding Ratio (Assets/Accrued Liability)	82.4%	86.4%	88.5%

\* Differs from figure given in 1978 Report.

	<u>1978</u>	<u>1979</u>	<u>1980</u>
(4) <u>Normal Cost and Funding Costs</u>			
Normal Cost	15.867%	15.682%	15.493%
Expenses	<u>0.089</u>	<u>0.089</u>	<u>0.089</u>
Normal Cost Plus Expenses	15.956%	15.771%	15.582%
Normal Cost Plus Expenses	15.956%	15.771%	15.582%
Interest on Deficit	<u>1.762</u>	<u>1.388</u>	<u>1.226</u>
Minimum Contribution	17.718%	17.159%	16.808%
Normal Cost Plus Expenses	15.956%	15.771%	15.582%
Amortization by 2009	<u>2.260</u>	<u>1.806</u>	<u>1.619</u>
Required Contribution	18.216%	17.577%	17.203%
(5) <u>Statutory Contributions</u>			
Employee	8.0%	8.0%	8.0%
Employer Regular	12.0	12.0	12.0
Employer Additional	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
Total	20.0%	20.0%	20.0%
(6) <u>Investment Yield*</u>	6.63%	7.22%	8.11%

\*Ratio of return on mean assets excluding Minnesota Post Retirement Fund.

## 2. Discussion of Valuation Results

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

The deficit decreased by \$12,213,897 from 1978 to 1979, and then by \$313,004 from 1979 to 1980. An approximate analysis of these changes follows:

	<u>1978-1979</u>	<u>1979-1980</u>
<u>Decreases:</u>		
Amortization	\$ 4,102,688	\$ 4,806,959
Capital Gain	174,801	1,860,211
Excess Interest	2,424,602	3,497,764
Mortality Gain-Retireds	91,399	19,079
Other Actuarial Gains	<u>4,896,880</u>	<u>0</u>
Total Decrease	\$11,690,370	\$10,184,013
<u>Increases:</u>		
Salary Increases	\$ 9,476,473	\$ 9,320,367
Other Actuarial Losses	<u>0</u>	<u>550,642</u>
Total Increase	\$ 9,476,473	\$ 9,871,009
<u>Net Decrease</u>	\$ 2,213,897	\$ 313,004

### 3. Conclusion

The reports filed by PERA relative to the Police and Fire Fund conforms with the requirements of the various statutes with one exception. The quadrennial experience study was not included with the 1979 report. We understand that this study is in process, and a memorandum on this will be presented at a later time.

The margin between the statutory contribution and the required report increased during the two-year period.

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

Franklin C. Smith  
Associate, Society of Actuaries  
Commission Actuary