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PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL VALUATION REPORT
(Based on a June 30, 1982 Census)

 **FILE COPY**

JAN 10 1983 LCP&R

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

TABLE OF CONTENTS

	<u>Page No.</u>
<u>Letter of Transmittal</u>	1
<u>Summary of Actuarial Requirements</u>	2
<u>Value of Benefits Earned to June 30, 1982</u>	3
<u>General Fund</u>	
Exhibit 1 Accounting Balance Sheet	4
Exhibit 2 Accounting Statement of Revenues and Expenses	5-6
Exhibit 3 Reconciliation of Asset Balances	7
Exhibit 4 Statement of Changes in Financial Position	8
Exhibit 5 Asset Allocation	9
Exhibit 6 Actuarial Assumptions	10-16
Exhibit 7 Financial Balance Sheet	17
Exhibit 8 Actuarial Requirements	18
Exhibit 9 Actuarial Requirements	19
Exhibit 10 Statement of Revenue, Expenditures Changes in Reserves and Experience Gain (Loss)	20
Exhibit 11 Allocation of Change in Actuarial Reserves	21
Exhibit 12 Estimated Sources of Gain from Income	22
Exhibit 13 Reconciliation of Active Members	23
Exhibit 14 Reconciliation of Annuitants	24
<u>Police and Fire Fund</u>	
Exhibit 15 Accounting Balance Sheet	25
Exhibit 16 Accounting Statement of Revenues and Expenses	26-27
Exhibit 17 Reconciliation of Asset Balances	28
Exhibit 18 Statement of Changes in Financial Position	29
Exhibit 19 Actuarial Assumptions	30-34
Exhibit 20 Financial Balance Sheet	35
Exhibit 21 Actuarial Requirements	36
Exhibit 22 Actuarial Requirements	37
Exhibit 23 Statement of Revenue, Expenditures Changes in Reserves and Experience Gain (Loss)	38
Exhibit 24 Allocation of Change in Actuarial Reserves	39
Exhibit 25 Estimated Sources of Gain from Income	40
Exhibit 26 Reconciliation of Active Members	41
Exhibit 27 Reconciliation of Annuitants	42
Exhibit 28 Summary of Active Members	43-44
Exhibit 29 Summary of Present Plan	45-48

Table of Contents
(Continued)

Page No.

Basic Members

Exhibit 30	Financial Balance Sheet	49
Exhibit 31	Actuarial Requirements	50
Exhibit 32	Actuarial Requirements	51
Exhibit 33	Statement of Revenue, Expenditures Changes in Reserves and Experience Gain (Loss)	52
Exhibit 34	Allocation of Change in Actuarial Reserves	53
Exhibit 35	Estimated Sources of Gain from Income	54
Exhibit 36	Reconciliation of Active Members	55
Exhibit 37	Reconciliation of Annuitants	56
Exhibit 38	Summary of Active Members	57-58
Exhibit 39	Summary of Present Plan	59-62

Coordinated Members

Exhibit 40	Financial Balance Sheet	63
Exhibit 41	Actuarial Requirements	64
Exhibit 42	Actuarial Requirements	65
Exhibit 43	Statement of Revenue, Expenditures Changes in Reserves and Experience Gain (Loss)	66
Exhibit 44	Allocation of Changes in Actuarial Reserves	67
Exhibit 45	Estimated Sources of Gain from Income	68
Exhibit 46	Reconciliation of Active Members	69
Exhibit 47	Reconciliation of Annuitants	70
Exhibit 48	Summary of Active Members	71-72
Exhibit 49	Summary of Present Plan	73-76

COMPENSATION & CAPITAL
INCORPORATED

125 SOUTH WACKER DRIVE
DAVIS H. ROENISCH, FSA

CHICAGO, ILLINOIS 60606

TELEPHONE 312 332-4420
ACTUARIAL SERVICES

December 22, 1982

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

Gentlemen:

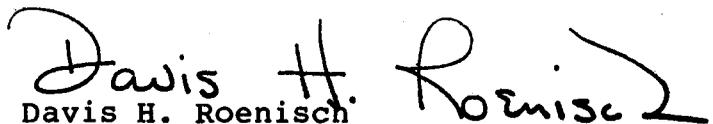
In accordance with your request, we have made an actuarial valuation of the Public Employees Retirement Association of the State of Minnesota for the year ended June 30, 1982, in order to determine the adequacy of the contributions being made to that system and to prepare the financial and actuarial 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, 1982.

Respectfully submitted,

COMPENSATION & CAPITAL INCORPORATED


Davis H. Roenisch
Enrolled Actuary No. 174

DHR:kc

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

SUMMARY OF ACTUARIAL REQUIREMENTS
(July 1, 1982)

<u>General Fund</u>	<u>Police and</u>
<u>Exhibit 8</u>	<u>Fire Fund</u>
<u>Page 18</u>	<u>Exhibit 21</u>
	<u>Page 36</u>

AMORTIZATION REQUIREMENTS

Present Value of Benefits (For Both Past and Future Service)	\$2,169,254,944 ✓	\$ 403,228,184 ✓
Obligation for Service Rendered to Date	1,646,987,789	222,472,470
Net Assets	1,278,462,836 ✓	209,225,419 ✓
Accrued Unfunded Obligation	368,524,953	13,247,051
Funding Ratio	78%	94%
Amortization (27-Year) Requirement	25,167,254	904,666
Covered Payroll	1,079,973,418 ✓	97,295,847 ←
Amortization (27-Year) Rate Requirement	<u>2.330%</u>	<u>.930%</u>

ENTRY AGE NORMAL RATE REQUIREMENTS

Value of Benefits to be Earned in the Future	\$ 522,267,055	\$ 180,755,714
Present Value of Future Payroll	6,450,432,000	1,169,444,500
Normal Cost Rate Requirement ←	8.097% <i>N.C.</i>	15.457% <i>ok</i>
Employee Contribution Rate	4.642% <i>ok</i>	8.000
Employer Normal Cost Rate Requirement	<u>3.455%</u>	<u>7.457%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law	6.303%* <i>ok</i>	12.000%
Amortization (27-Year) Rate Requirement	2.330% <i>Amort</i>	.930%
Normal Cost Rate Requirement	3.455%	7.457%
Allowance for Expenses	3.455 <u>0.148</u> <i>up</i>	<u>0.089</u>
Total Requirement	<u>5.933%</u>	<u>8.476%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>0.370%</u>	<u>3.524%</u> <i>ok</i>

* Weighted by Covered Payroll 16.05% Basic and 83.95% Coordinated.

8x16.05
4x83.95

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Value of Benefits Earned to June 30, 1982

	<u>General Fund</u>	
	<u>Without Augmentation*</u>	<u>With Augmentation</u>
Benefits Payable to Retired Members and their Beneficiaries	\$ 493,331,640	\$ 493,331,640
Deferred Annuitants	13,557,847	13,557,847
Former Members without Vested Rights	6,329,552	6,329,552
Active Members:		
a. Eligible for Normal Retirement	63,835,074	63,835,074
b. Eligible for Early Retirement	458,533,858	161,041,056
c. Eligible for Deferred Benefits	666,372,336	666,372,336
d. Under 10 years service (Refund of Contributions only)	<u>76,297,170</u>	<u>76,297,170</u>
<u>Total</u>	<u>\$1,272,926,197</u>	<u>\$1,480,764,675</u>

	<u>Police and Fire Fund</u>	
Benefits Payable to Retired Members and their beneficiaries	\$ 53,137,975	\$ 53,137,975
Deferred Annuitants	2,018,411	2,018,411
Former Members without Vested Rights	472,219	472,219
Active Members:		
a. Eligible for Normal Retirement	24,709,898	24,709,898
b. Eligible for Early Retirement	-	-
c. Eligible for Deferred Benefits	94,606,256	125,645,952
d. Under 10 years service (Refund of Contribution only)	<u>17,525,026</u>	<u>17,525,026</u>
<u>Total</u>	<u>\$ 192,469,785</u>	<u>\$ 223,509,481</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.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPublic Employees Retirement FundBalance Sheet

June 30, 1982

Assets

Cash:			
On hand	\$	100.00	
On deposit		<u>906,202.61</u>	\$ 906,302.61
Accounts Receivable:			
Employer contributions		111,728.04	
Interest on late contributions		44,083.09	
Other		<u>67,104.01</u>	\$ 222,915.14
Due from Police and Fire Fund			165,761.47
Accrued interest on investments			10,532,538.39
Accrued dividends			2,005,182.82
Prepaid interest			189,283.33
Prepaid expense			<u>26,433.53</u>
Total Current Assets			\$ 14,048,417.29
Investments:			
Bonds - at amortized cost	\$403,446,982.85		
Common stock - at cost	393,786,155.42		
Short-term	<u>48,088,105.87</u>		845,321,244.14
Minnesota Post-Retirement Investment Fund - at participation value	\$405,574,791.71		
Annuity stabilization	<u>6,564,258.00</u>		412,139,049.71
Deferred yield adjustment			6,459,478.26
Fixed assets, net of accumulated depreciation			<u>574,159.87</u>
Total Assets			<u>\$1,278,542,349.27</u>
<u>Current Liabilities and Reserves</u>			
Liabilities:			
Accounts payable	\$	71,855.08	
Payable to Police and Fire Fund		<u>7,657.88</u>	\$ 79,512.96
Reserves:			
Member accumulated contributions			319,169,116.16
Reserve for participation in Minnesota Post-Retirement Investment Fund			405,574,791.71
Reserve for annuity stabilization			6,564,258.00
Benefit Reserve			<u>547,154,670.44</u>
			<u>\$1,278,542,349.27</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPublic Employees Retirement FundAccounting Statement of Revenues and Expenses

For the fiscal year ended June 30, 1982

Operating Revenues:

Employer contributions 8%	\$ 14,315,853.30	
Employer contributions 2½%	4,473,713.02	
Employer contributions 4%	37,796,027.74	
Employer contributions 1½%	14,173,546.00	
Additional employer contribution	<u>154,173.39</u>	\$ 70,913,313.45
Member contributions		52,277,225.70
Minnesota Post-Retirement Investment		
Fund income	\$ 40,214,676.23	
Investment income	70,883,903.20	
Gain on sale of investments	<u>6,484,193.88</u>	117,582,773.31
Interest on refunds repaid	\$ 246,138.28	
Interest on delinquent employer contributions and late payrolls	<u>69,891.98</u>	316,030.26
Other income		<u>(234.41)</u>
Total Operating Revenues		\$ 241,089,108.31

Operating Expenses:

Retirement annuities paid		\$ 43,865,092.79
Survivor benefits paid:		
Old Law	\$ 2,587,645.69	
With Children	635,252.94	
Without Children	<u>2,267,583.64</u>	5,490,482.27
Disability benefits paid		2,666,106.81
Disability survivors paid:		
With children	\$ 140,916.59	
Without children	<u>581,387.06</u>	722,303.65
Refunded contributions:		
Members due to withdrawal	\$ 10,428,970.06	
Members due to death	<u>547,833.13</u>	10,976,803.19
Annuitants due to death	\$ 51,559.80	
Disabilitants due to death	2,039.93	
Survivors due to death	<u>16,801.53</u>	70,401.26
Employer contributions	\$ 111,782.64	
Interest paid on refunds	<u>709,948.06</u>	821,730.70
Administrative expense		<u>2,257,242.04</u>
Total Operating Expense		\$ 66,870,162.71

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Public Employees Retirement Fund

Accounting Statement of Revenues and Expenses (Continued)

Operating transfers (In)/Out			
From Police and Fire Fund	\$	(44,068.12)	
To Police and Fire Fund		18,376.97	
From State General Fund		(2,130,902.46)	
To State General Fund		<u>8,498.00</u>	\$ (2,148,095.61)
Prior year adjustments		<u>(247,901.11)</u>	\$ <u>64,474,165.99</u>
Net Income			\$ <u>176,614,942.32</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPublic Employees Retirement FundReconciliation of Asset Balances

June 30, 1982

Asset Balance, July 1, 1981			\$1,101,847,894.23
Add:			
Employer contributions		\$ 70,913,313.45	
Employee contributions		52,277,225.70	
Transfer from Police and Fire		25,691.15	
Realized income of the Minnesota Post-Retirement Fund		40,214,676.23	
Investment income		70,883,903.20	
Gain on sales of investments		6,484,193.88	
Interest on late contributions and refunds repaid		316,030.26	
Transfer from State General Fund		2,122,404.46	
Other income		<u>247,666.70</u>	
Total Additions			<u>243,485,105.03</u>
Deduct:			\$1,345,332,999.26
Benefits paid -			
Retirement	\$ 43,865,092.79		
Survivor	6,212,785.92		
Disability	<u>2,666,106.81</u>	\$ 52,743,985.52	
Refunds		11,868,935.15	
Administrative expenses		2,257,242.04	
Adjustment to annuity stabilizaton		<u>.24</u>	
Total Deductions			<u>66,870,162.95</u>
			\$1,278,462,836.31
Current Liabilities and Accounts Payable			<u>79,512.96</u>
Asset Balance, June 30, 1982			<u><u>\$1,278,542,349.27</u></u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPublic Employees Retirement FundStatement of Changes in Financial PositionFor the Fiscal Year Ended June 30, 1982

Cash Provided:	
From Operations -	
Net Operating Income	<u>\$ 176,614,942.32</u>
Items to be Added to (Deducted From)	
Net Operating Income:	
(Increase) In accounts receivable	\$ (151,871.04)
(Increase) In due from other funds	(11,241.89)
Decrease in accrued investment income	1,422,934.17
Decrease in other assets	145,480.70
(Decrease) In accounts payable	(747,302.91)
(Decrease) In payables to other funds	(1,762,700.44)
(Decrease) In security purchases payable	<u>(751,721.00)</u>
Total Items To Be (Deducted)	<u>\$ (1,856,422.41)</u>
Total Cash Provided From Operations	<u>\$ 174,758,519.91</u>
Cash Applied:	
Increase in fixed assets (net)	<u>\$ 83,246.88</u>
Total Cash Applied	<u>\$ 83,246.88</u>
Net Increase in Cash and Investments	<u>\$ 173,421,811.35</u>
Cash and Investments, July 1, 1981	<u>\$1,091,404,263.37</u>
Cash and Investments, June 30, 1982	<u><u>\$1,264,826,074.72</u></u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONASSET ALLOCATION
(July 1, 1982)

	<u>Basic Fund</u>	<u>Coordinated Fund</u>	<u>General Fund Total</u>
Asset Balance July 1, 1981	\$562,301,399.10	\$539,546,495.13	\$1,101,847,894.23
MPRF	280,005,712.18	51,329,375.96	331,335,088.14
General Fund	282,295,686.92	488,217,119.17	770,512,806.09
1. Employer Contributions	18,789,566.32	52,123,747.13	70,913,313.45
2. Employee Contributions	14,361,275.76	37,915,949.94	52,277,225.70
3. Transfer from State General Fund	1,822,091.90	300,312.56	2,122,404.46
4. Transfers from Police and Fire Fund	25,691.15	-	25,691.15
5. Benefits Paid			
i. Survivors	(6,001,369.99)	(211,415.93)	(6,212,785.92)
ii. Disability and Death	(2,328,833.74)	(337,273.07)	(2,666,106.81)
6. MPRF Annuity Stabilization Reserve	(56)	.32	(.24)
7. Refunds	(231,444.24)	(11,637,490.91)	(11,868,935.15)
8. Net (Items 1 to 7)	26,436,976.60	78,153,830.04	104,590,806.64
9. Benefits Paid from MPRF	(36,950,698.56)	(6,914,394.23)	(43,865,092.79)
10. Income from MPRF	34,029,396.78	6,185,279.45	40,214,676.23
11. Investment Income	28,552,165.72	49,379,628.32	77,931,794.04
12. Administrative Expenses	(536,499.71)	(1,720,742.33)	(2,257,242.04)
13. Net (Items 9 to 12)	25,094,364.23	46,929,771.21	72,024,135.44
14. Increase for Year (Sum of Items 8 and 13)	51,531,340.83	125,083,601.25	176,614,942.08
15. Asset Balance July 1, 1982	<u>\$613,832,739.93</u>	<u>\$664,630,096.38</u>	<u>\$1,278,462,836.31</u>
i. MPRF	349,123,209.07	63,015,840.64	412,139,049.71
ii. General Fund	264,709,530.86	601,614,255.74	866,323,786.60

Public Employees Retirement Association

General Fund

ACTUARIAL ASSUMPTIONS

The assumptions can be summarized as follows:

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

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

Public Employees Retirement 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 Association

General Fund

Female Employees

SEPARATION 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, 1982)

General Fund

RESERVES

Entry Age Normal Reserve

Retirement	\$1,344,206,833
Vesting	152,910,848
Disability	66,615,519
Survivors	25,913,312
Refund	<u>66,389,393</u>

\$1,656,035,905

Less Value of Benefits
Earned in the Future

- 522,267,155 = \$1,133,768,750

Deferred Annuitants	13,557,847
Former Members without Vested Rights	6,329,552

Retired Members:

Minnesota Post-Retirement Fund Admitted Assets	\$ 412,139,050*
--	-----------------

Disability 20,129,338

Survivors 53,780,095

Reserve for Future
Old Law Survivors 5,781,325

Plus Net Mortality Loss
Payable to
Minnesota Post-Retirement
Fund

1,501,832

436,0380
912

493,331,640

AL

\$1,646,987,789

Unfunded Obligation

368,524,953

Funded Obligation

assets

\$1,278,462,836

* Includes Annuity Stabilization Reserve. Retired Life Reserves are \$413,640,882.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS

(July 1, 1982)

General FundAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$2,169,254,944	
Obligation for Service			
Rendered to Date	\$1,646,987,789		
Net Assets	1,278,462,836		
Accrued Unfunded Obligation	368,524,953		
Funding Ratio			78%
Amortization (27-Year) Requirement	\$ 25,167,254		
Covered Payroll	1,079,973,418		
Amortization (27-Year) Rate Requirement			<u>2.330%</u>

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	\$ 522,267,055		
Present Value of Future Payroll	6,450,432,000		
Normal Cost Rate Requirement	8.097%		
Employee Contribution Rate*	<u>4.642</u>		
Employer Normal Cost Rate Requirement			<u>3.455%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law*			6.303%
Amortization (27-Year) Rate Requirement	2.330%		
Normal Cost Rate Requirement	3.455		
Allowance for Expenses	<u>0.148</u>		
Total Requirement			<u>5.933%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement			<u>0.370%</u>

* Weighted by Covered Payroll 16.05% Basic and 83.95% Coordinated

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1982)General FundAMORTIZATION RATE REQUIREMENT

	Period			
	<u>10-Year</u>	<u>20-Year</u>	<u>30-Year</u>	<u>40-Year</u>
Accrued Unfunded Obligation	\$ 368,524,953	\$ 368,524,953	\$ 368,524,953	\$ 368,524,953
Amortization Requirement	47,725,668	29,571,395	23,973,077	21,476,957
Covered Payroll	1,079,973,418	1,079,973,418	1,079,973,418	1,079,973,418
Amortization Rate Requirement	<u>4.419%</u>	<u>2.738%</u>	<u>2.220%</u>	<u>1.989%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law*	<u>6.303%</u>	<u>6.303%</u>	<u>6.303%</u>	<u>6.303%</u>
Amortization Rate Requirement	4.419%	2.738%	2.220%	1.989%
Normal Cost Rate Requirement	3.455	3.455	3.455	3.455
Allowance for Expenses	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>
 Total Requirement	 <u>8.022%</u>	 <u>6.341%</u>	 <u>5.823%</u>	 <u>5.592%</u>
 Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	 <u>(1.719%)</u>	 <u>(0.038%)</u>	 <u>0.480%</u>	 <u>0.711%</u>

* Weighted by Covered Payroll

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral Fund

STATEMENT OF REVENUE, EXPENDITURES,
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
 (Year Ending June 30, 1982)

Revenue:

Employer Contributions	\$70,913,313.45	
Member Contributions	52,277,225.70	
Transfer from Police and Fire Fund	25,691.15	
Transfer from State General Fund	2,122,404.46	
Investment Income	77,931,794.04	
Minnesota Post-Retirement Investment Fund Income	<u>40,214,676.23</u>	
Total Revenue		\$243,485,105.03

Expenditure:

Benefits	\$52,743,985.52	
Refund of Contributions	11,868,935.15	
Administrative Expense	2,257,242.04	
Annuity Stabilization Reserve Adjustment	<u>.24</u>	
Total Expenditures		<u>66,870,162.95</u>
Increase in Assets (1982)		<u>\$176,614,942.08</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	\$123,190,539	\$ 98,400,444 ¹	\$(24,790,095)
Investment Income	118,146,471 ²	55,092,395	(63,054,075)
Transfers	<u>2,148,095</u>	<u>2,148,095</u>	<u>-</u>
Total Income	243,485,105	155,640,934	(87,844,171)
Benefit Payments	(66,870,163)	(66,870,163)	-
Amendment		63,546,120	63,546,120
Increase in Reserves Based on Salary Change	-	74,515,685	74,515,685
Mortality Loss	-	1,500,469	1,500,469
Other Experience Variation ³	<u>-</u>	<u>(8,843,836)</u>	<u>(8,843,836)</u>
Net Change	<u>\$176,614,942</u>	<u>\$199,489,209</u>	<u>\$ 42,874,267</u>

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

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

General Fund

ESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income Less Reserves \$87,844,171

Estimated Sources of Gain:

Amortization Payment \$ 7,142,811

Excess Interest 62,434,082

Contribution Rates
Applied to Larger
Payroll 4,212,891

Excess in Contribution
Rate 8,477,124 82,266,908

Actual Less Estimated Gain \$ 5,577,263

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSGeneral Fund

As of July 1, 1981	87,873
New Entrants	8,876
Reinstated	2,946
Reinstated from Errors	<u>573</u>
TOTAL	<u>100,268</u>

Separations:

a. Refund of Contributions	
(i) Death	143
(ii) Withdrawal	8,610
b. With Deferred Annuity	199
c. With Disability Annuity	124
d. With Normal Retirement Annuity	1,242
e. With Survivor Annuity	23
f. With Option Annuity	11
g. Terminated	3,549
h. Terminated to Active	754
i. Died - No Refund or Benefit	36
j. Duplicate Member Number Errors	138
k. Added in Error	<u>1</u>
TOTAL SEPARATIONS	<u>14,076</u>
Current Active Total	<u>85,438</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

RECONCILIATION OF ANNUITANTS

General Fund

<u>Annuitants:</u>	<u>Normal</u>	<u>Option</u>	<u>Survivor</u>	<u>Disabled</u>	<u>Children</u>	<u>Total</u>
Balance - July 1, 1981	12,294	325	3,146	663		16,428
Additons for year	1,546	99	136	152		1,933
Deletions for year	-511	-14	-169	-138		-832
Subtotal - July 1, 1982	13,329	410	3,113	677	263	17,529
Inactives	21	1	15	36		73
Actives	13,308	409	3,098	641	62	17,456

Note - Children are for informational purposes only. They are included as survivors. Active children are active children only.

Deferred Vested Members:

Balance - July 1, 1981	1,144
Additions	388
Deletions	-318
Balance - July 1, 1982	1,214

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPublic Employees Police and Fire FundBalance Sheet

June 30, 1982

Assets

Cash		\$	143,669.13
Accounts Receivable:			
Employer contributions	\$	341.33	
Interest on late contributions		1,543.41	
Police State Aid		145,487.20	
New units		441,838.32	
Other		<u>22,733.35</u>	611,943.61
Due from Public Employees Retirement Fund			18,550.64
Accrued interest on investments			2,326,959.99
Accrued dividends			366,519.78
Prepaid interest			<u>36,383.33</u>
Total Current Assets		\$	3,504,026.48
Investments:			
Bonds - at amortized cost	\$	79,488,848.44	
Common stock - at cost		73,232,763.94	
Short-term		<u>9,599,297.92</u>	162,320,910.30
Minnesota Post-Retirement Investment Fund - at participation value	\$	42,624,214.91	
Annuity stabilization		<u>349,981.30</u>	42,974,196.21
Deferred yield adjustment			<u>592,318.91</u>
Total Assets		\$	<u>209,391,451.90</u>
<u>Current Liabilities and Reserves</u>			
Liabilities:			
Accounts payable	\$	271.79	
Payable to Public Employees Retirement Fund		<u>165,761.47</u>	\$ 166,033.26
Reserves:			
Member accumulated contributions			45,912,886.64
Reserve for participation in Minnesota Post-Retirement Investment Fund			42,624,214.91
Reserve for annuity stabilization			349,981.30
Benefit Reserve			<u>120,338,335.79</u>
		\$	<u>209,391,451.90</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPublic Employees Police and Fire FundAccounting Statement of Revenues and Expenses

For the fiscal year ended June 30, 1982

Operating Revenues:

Employer contributions - 1981-1982	\$ 11,928,938.40	
Employer contributions - other	<u>17,310.03</u>	\$ 11,946,248.43
Member contributions		7,973,442.77
Minnesota Post-Retirement Investment		
Fund income	\$ 4,056,626.42	
Investment income	14,069,708.97	
Gain on sale of investments	<u>912,095.39</u>	19,038,430.78
Interest on refunds repaid	\$ 12,056.45	
Interest on delinquent employer contributions and late payrolls	11,769.95	
Interest on purchased coverage	<u>21,039.94</u>	44,866.34
Police State Aid		<u>607,808.71</u>
Total Operating Revenues		\$ 39,610,797.03

Operating Expenses:

Retirement annuities paid		\$ 3,655,955.30
Survivor benefits paid:		
Old Law	\$ 102,024.48	
With Children	150,499.12	
Without Children	<u>260,873.08</u>	513,396.68
Disability benefits paid		276,318.65
Disability survivors paid:		
With children	\$ 23,308.10	
Without children	<u>30,889.18</u>	54,197.28
Refunded contributions:		
Members due to withdrawal	\$ 654,227.23	
Members due to death	<u>14,471.70</u>	\$ 668,698.93
Employer contributions		14,781.75
Interest paid on refunds		44,542.89
Administrative expense		<u>124,894.35</u> ✓
Total Operating Expense		\$ 5,352,785.83

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Public Employees Police and Fire Fund

Accounting Statement of Revenues and Expenses (Continued)

Operating transfers (In)/Out				
From Public Employees Retirement Fund	\$	(18,376.97)		
To Public Employees Retirement Fund		44,068.12		
From State General Fund		<u>(73,926.00)</u>	\$	(48,234.85)
Prior year adjustments			<u>(22,934.61)</u>	\$ 5,281,616.37
Net Income				<u>\$ 34,329,180.66</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPublic Employees Police and Fire FundReconciliation of Asset Balances

June 30, 1982

Asset Balance, July 1, 1981		\$ 174,896,237.98
Add:		
Employer contributions	\$ 11,946,248.43	
Employee contributions	7,973,442.77	
Transfer from State General Fund	73,926.00	
Realized income of the Minnesota Post-Retirement Fund	4,056,626.42	
Investment income	14,069,708.97	
Gain on sales of investments	912,095.39	
Interest on late contributions and refunds repaid	44,866.34	
Transfer from State General Fund	607,808.71	
Other income	<u>22,934.61</u>	
Total Additions		<u>39,707,657.64</u>
		\$ 214,603,895.62
Deduct:		
Benefits paid -		
Retirement	\$ 3,655,955.30	
Survivor	567,593.96	
Disability	<u>276,318.65</u>	
	\$ 4,499,867.91	
Refunds	728,023.57	
Administrative expenses	124,894.35	
Transfer to Public Employees Retirement Fund	<u>25,691.15</u>	
Total Deductions		<u>5,378,476.98</u>
		\$ 209,225,418.64
Current Liabilities and Accounts Payable		<u>166,033.26</u>
Asset Balance, June 30, 1982		<u>\$ 209,391,451.90</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION
Public Employees Police and Fire Fund
Statement of Changes in Financial Position
For the Fiscal Year Ended June 30, 1982

Cash Provided:	
From Operations -	
Net Operating Income	\$ 34,329,180.66
Items to be Added to (Deducted From)	
Net Operating Income:	
Decrease in accounts receivable	\$ 10,966.88
Decrease in due from other funds	25,540.68
(Increase) In accrued investment income	(492,304.43)
Decrease in other assets	35,008.22
Increase in accounts payable	271.79
Increase in payables to other funds	58,176.01
(Decrease) In security purchases payable	(125,329.00)
Total Items To Be (Deducted)	\$ (487,669.85)
Total Cash Provided From Operations	\$ 33,841,510.81
Total Cash Applied	-0-
Net Increase in Cash and Investments	\$ 33,841,511.45
Cash and Investments, July 1, 1981	\$ 172,189,583.10
Cash and Investments, June 30, 1982	\$ 206,031,094.55

Public Employees Retirement Association

Police and Fire Fund

ACTUARIAL ASSUMPTIONS

The assumptions can be summarized as follows:

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

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

Public Employees Retirement Association

Police and Fire Fund

All Employees

MORTALITY RATES
(Per 1,000 Employees)

<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 Association

Police and Fire Fund

All Employees

DISABILITY 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 Association

Police and Fire Fund

All Employees

SEPARATION 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 Association

Police and Fire Fund

All Employees

EARNINGS 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, 1982)Police and Fire FundRESERVES

Entry Age Normal Reserves

Retirement \$244,878,745

Vesting 19,458,823

Disability 65,744,998

Survivors 11,040,159

Refund 6,476,854

\$347,599,579

Less Value of Benefits to be
Earned in the Future

\$180,755,714

\$166,843,865

Deferred Annuitants

2,018,411

Former Members without
Vested Rights

472,219

Retired Members:
Minnesota Post-
Retirement Fund
Admitted Assets

\$ 42,974,196*

Disability 2,930,791

Survivors 7,033,185

Reserve for Future
Old Law Survivors

235,692

Minus Net Mortality Gain
Receivable from
Minnesota Fund(35,889)53,137,975AL
\$222,472,470

Unfunded Obligation

VAL 13,247,051

Funded Obligation

Assets \$209,225,419* Includes Annuity Stabilization Reserve. Retired Life Reserves
are \$42,938,307.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

ACTUARIAL REQUIREMENTS
(July 1, 1982)

Police and Fire Fund

AMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$403,228,184
Obligation for Service Rendered to Date	\$ 222,472,470	
Net Assets	209,225,419	
Accrued Unfunded Obligation	13,247,051	
Funding Ratio		94%
Amortization (27-Year) Requirement Covered Payroll	904,666 97,295,847	
Amortization (27-Year) Rate Requirement		.930%

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned In the Future	\$ 180,755,714	
Present Value of Future Payroll	1,169,444,500	
Normal Cost Rate Requirement		
Employee Contribution Rate	15.457%	<i>N.C.</i>
Employee Normal Cost Rate Requirement	8.000	<i>ee</i>
		<u>7.457%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		12.000%
Amortization (27-Year) Rate Requirement		.930%
Normal Cost Rate Requirement		<u>7.457</u>
Allowance for Expenses		0.089
Total Requirement		<u>8.476%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		<u>3.524%</u>

*NC 16.476
- .93

15.546
+ .089 exp

15.457*

*20.800
3.524

17.276
- 8.752

8.524*

OK

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1982)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	\$13,247,051	\$13,247,051	\$13,247,051	\$13,247,051
Amortization Requirement	1,715,554	1,062,978	861,740	772,014
Covered Payroll Amortization Rate Requirement	97,295,847	97,295,847	97,295,847	97,295,847
	<u>1.763%</u>	<u>1.093%</u>	<u>0.886%</u>	<u>0.793%</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	1.763%	1.093%	0.886%	0.793%
Normal Cost Rate Requirement	7.457	7.457	7.457	7.457
Allowance for Expenses	<u>0.089</u>	<u>0.089</u>	<u>0.089</u>	<u>0.089</u>
Total Requirement	<u>9.309%</u>	<u>8.639%</u>	<u>8.432%</u>	<u>8.339%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>2.691%</u>	<u>3.361%</u>	<u>3.568%</u>	<u>3.661%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire Fund

STATEMENT OF REVENUE, EXPENDITURES,
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
 (Year Ending June 30, 1982)

Revenue:

Employer Contributions	\$11,946,248.43	
Member Contributions	7,973,442.77	
Special Income	607,808.71	
Investment Income	15,049,605.31	
Minnesota Post-Retirement Investment Fund Income	4,056,626.42	
Transfer from State General Fund	<u>73,926.00</u>	
Total Revenue		\$39,707,657.64

Expenditures:

Benefits	\$ 4,499,867.91	
Refund of Contributions	728,023.57	
Transfer to Regular Fund	25,691.15	
Administrative Expense	124,894.35	
Total Expenditures		<u>5,378,476.98</u>
Increase in Assets (1982)		<u>\$34,329,180.66</u>

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

<u>Item</u>	<i>what have</i> <u>Assets</u>	<i>what expect</i> <u>Reserves</u>	<u>Change in Unfunded Increase (Decrease)</u>
Contribution Income	\$19,919,691	\$13,882,113 ¹	\$ (6,037,578)
Investment Income	19,106,232 ²	8,744,812	(10,361,420)
Other Income	<u>607,809</u>	<u>-</u>	<u>(607,809)</u>
Total Income	39,633,732	22,626,925	(17,006,807)
Benefit Payments	(5,352,786)	(5,352,786)	-
Transfers	48,235	48,235	-
Amendment		914,558	914,558
Increase in Reserves Based on Salary Change	-	15,777,554	15,777,554
Mortality Gain	-	(35,889)	(35,889)
Other Experience Variation ³	<u>-</u>	<u>559,576</u>	<u>559,576</u>
Net Change	<u>\$34,329,181</u>	<u>\$34,538,173</u>	<u>\$ 208,992</u>

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

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

ESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income less Reserves \$17,006,807

Estimated Sources of Change:

Amortization Payment	\$ 223,245	
Excess Interest (4.9% x Average Invested Assets)	9,410,981	
Excess Contribution Rate	2,980,187	
Contribution Rate Applied to Larger Payroll	2,297,138	
Other Income	<u>607,809</u>	<u>15,519,360</u>
Actual Less Estimated Gain		<u>\$ 1,487,447</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSPolice and Fire Fund

As of July 1, 1981	4,449
New Entrants	283
Reinstated	145
Reinstated from Errors	<u>11</u>
TOTAL	<u>4,888</u>

Separations:

a. Refund of Contributions	
(i) Death	1
(ii) Withdrawal	115
b. With Deferred Annuity	7
c. With Disability Annuity	8
d. With Normal Retirement Annuity	54
e. With Survivor Annuity	8
f. With Option Annuity	-
g. Terminated	84
h. Terminated to Active	91
i. Died - No Refund or Benefit	1
j. Duplicate Member Number Errors	11
k. Added in Error	<u>-</u>
TOTAL SEPARATIONS	<u>289</u>
 Current Active Total	 <u>4,508</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ANNUITANTSPolice & Fire Fund

<u>Annuitants:</u>	<u>Normal</u>	<u>Option</u>	<u>Survivor</u>	<u>Disabled</u>	<u>Children</u>	<u>Total</u>
Balance - July 1, 1981	600	30	175	41		846
Additions for year	64	4	14	12		94
Deletions for year	-27	-1	-5	0		-33
Subtotal - July 1, 1982	637	33	184	53	69	907
Inactives	9	1	1	11		22
Actives	628	32	183	42		885

Note - Children are for informational purposes only. They are included as survivors. Active children are active children only.

Deferred Vested Members:

Balance - July 1, 1981	198
Additions	14
Deletions	-34
Balance - July 1, 1982	178

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundCONSIDERED EARNINGSActive Male Employees(Age and Service as of July 1, 1982)

Age	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	90	\$ 737,798	104	\$ 1,654,014	124	\$ 2,246,808	5	\$ 104,921
25 to 29	52	434,992	142	2,455,498	368	7,513,175	274	6,069,898
30 to 34	34	254,492	72	1,241,314	224	4,583,694	506	11,904,016
35 to 39	20	151,744	27	468,110	111	2,312,901	233	5,387,020
40 to 44	8	49,422	10	115,406	49	1,072,347	77	1,675,547
45 to 49	5	25,134	7	111,100	29	590,942	49	985,747
50 to 54	4	37,570	4	71,516	23	517,982	30	600,253
55 to 59	3	6,544	2	34,712	15	305,901	20	437,174
60 to 64	-	-	2	13,413	1	16,950	7	115,148
65 & Up	6	13,870	-	-	-	-	2	30,576
TOTAL	222	\$ 1,711,566	370	\$ 6,165,083	944	\$19,160,700	1,203	\$27,310,300

Age	YEARS OF SERVICE							
	10 to 14		15 to 19		20 to 24		25 to 29	
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 29	7	159,306	-	-	-	-	-	-
30 to 34	175	4,195,155	7	187,241	1	22,835	-	-
35 to 39	270	6,648,368	83	2,223,012	6	168,577	-	-
40 to 44	168	4,062,200	148	4,012,445	21	558,971	4	113,404
45 to 49	91	2,082,209	95	2,411,705	57	1,539,561	15	414,435
50 to 54	50	1,159,679	53	1,368,962	64	1,706,222	56	1,552,997
55 to 59	28	557,455	35	817,672	34	876,130	23	550,241
60 to 64	23	473,429	25	554,497	10	236,773	5	126,592
65 & Up	3	54,547	5	85,578	1	26,760	1	19,680
TOTAL	815	\$19,392,348	451	\$11,661,112	194	\$ 5,135,829	104	\$ 2,777,349

Age	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		All	
Under 25	-	\$ -	-	\$ -	-	\$ -	323	\$ 4,743,541
25 to 29	-	-	-	-	-	-	843	16,632,869
30 to 34	-	-	-	-	-	-	1,019	22,388,747
35 to 39	-	-	-	-	-	-	750	17,359,732
40 to 44	-	-	-	-	-	-	485	11,659,742
45 to 49	2	57,062	-	-	-	-	350	8,217,895
50 to 54	6	207,661	-	-	-	-	290	7,222,842
55 to 59	7	171,279	-	-	-	-	167	3,757,108
60 to 64	4	133,889	1	34,873	-	-	78	1,705,564
65 & Up	-	-	-	-	-	-	18	231,011
TOTAL	19	\$ 569,891	1	\$ 34,873	-	\$ -	4,323	\$93,919,051

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

CONSIDERED EARNINGS

Active Female Employees
(Age and Service as of July 1, 1982)

Age	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	10	\$ 95,786	13	\$203,527	7	\$ 131,791	-	\$ -
25 to 29	8	66,263	7	122,682	33	662,278	13	304,765
30 to 34	3	17,566	5	64,281	11	227,208	13	268,141
35 to 39	-	-	-	-	5	92,943	3	53,103
40 to 44	-	-	-	-	4	66,472	3	52,461
45 to 49	-	-	-	-	1	25,720	4	70,080
50 to 54	-	-	-	-	1	9,566	2	25,621
55 to 59	-	-	-	-	1	15,486	2	43,482
60 to 64	-	-	-	-	-	-	-	-
65 & Up	-	-	-	-	-	-	-	-
TOTAL	21	\$179,615	25	\$390,490	63	\$1,231,464	40	\$ 817,653

Age	YEARS OF SERVICE							
	10 to 14		15 to 19		20 to 24		25 to 29	
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 29	-	-	-	-	-	-	-	-
30 to 34	3	62,428	-	-	-	-	-	-
35 to 39	6	142,059	1	21,948	-	-	-	-
40 to 44	3	50,550	-	-	-	-	-	-
45 to 49	5	106,243	1	26,175	-	-	-	-
50 to 54	6	130,991	2	53,193	1	15,995	1	21,422
55 to 59	3	58,559	2	39,272	-	-	-	-
60 to 64	1	15,592	-	-	1	13,147	-	-
65 & Up	-	-	-	-	-	-	-	-
TOTAL	27	\$566,422	6	\$140,588	2	\$ 29,142	1	\$ 21,422

Age	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		All	
Under 25	-	\$ -	-	\$ -	-	\$ -	30	\$ 431,104
25 to 29	-	-	-	-	-	-	61	1,155,988
30 to 34	-	-	-	-	-	-	35	639,624
35 to 39	-	-	-	-	-	-	15	310,053
40 to 44	-	-	-	-	-	-	10	169,483
45 to 49	-	-	-	-	-	-	11	228,218
50 to 54	-	-	-	-	-	-	13	256,788
55 to 59	-	-	-	-	-	-	8	156,799
60 to 64	-	-	-	-	-	-	2	28,739
65 & Up	-	-	-	-	-	-	-	-
TOTAL	-	\$ -	-	\$ -	-	\$ -	185	\$3,376,796

PUBLIC EMPLOYEES POLICE AND FIRE FUND

SUMMARY OF PLAN

1. Name

Public Employees Police and Fire Fund.

2. Type of Plan

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

3. Employer Included

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

4. Employees Included

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

5. Allowable Service

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

6. Considered Salary

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

7. Employee Contributions

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

8. Employer Contributions

An amount equal to 12% of considered salary.

9. Normal Retirement Annuity

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

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

Annuity equal to:

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

10. Late Retirement Annuity

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

11. Proportionate Annuity

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

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

12. Disability Benefit

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

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

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

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

13. Survivor or Death Benefit

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

Annual Survivor Benefit to dependent spouse, of 30% of average salary during the last six months of allowable service, plus for each dependent child, 10% of such average salary. Maximum family benefit equal to 50% of such average salary, minimum family benefit equal to 30% of such average salary.

Upon the death of an active member after age 55 and completion of 10 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.

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

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

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

14. Separation Benefit

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

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

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

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

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

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

16. Optional Benefits

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

17. Maximum Annuity

Effective March 23, 1982 the normal monthly retirement annuity or disability benefit may not exceed 100% of final monthly salary.

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 ASSOCIATIONFINANCIAL BALANCE SHEET
(Year Commencing July 1, 1982)Basic MembersRESERVES

Entry Age Normal Reserves

Retirement \$724,076,626

Vesting 39,706,100

Disability 32,612,236

Survivors 18,965,192

Refund 1,653,742

\$817,013,896

Less Value of Benefits to be
Earned in the Future

134,572,462 \$682,441,434

Deferred Annuitants 11,665,786

Former Members without
Vested Rights 2,048,170

Retired Members:

Minnesota Fund

Admitted Assets 349,123,209*

Disability 17,566,906

Survivors 53,780,095

Reserve for Future
Old Law Survivors

5,781,325

Plus Net Mortality Loss
Payable to

Minnesota Fund

1,272,203427,523,738AL
\$1,123,679,128

Unfunded Obligation

JAL
509,846,388

Funded Obligation

JAL
\$ 613,832,740* Includes Annuity Stabilization Reserve. Retired Life Reserves
are \$350,395,412.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1982)Basic MembersAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$1,258,251,590	
Obligation for Service Rendered to Date	\$1,123,679,128		
Net Assets	613,832,740		
Accrued Unfunded Obligation	509,846,388		
Funding Ratio			54%
Amortization (27-Year) Requirement	34,818,358		
Covered Payroll	173,365,864		
Amortization (27-Year) Rate Requirement			<u>20.084%</u>

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	\$ 134,572,462		
Present Value of Future Payroll	1,027,734,600		
Normal Cost Rate Requirement	13.094%		
Employee Contribution Rate	<u>8.000%</u>		
Employer Normal Cost Rate Requirement			<u>5.094%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law			10.500%
Amortization (27-Year) Rate Requirement	20.084%		
Normal Cost Rate Requirement	5.094		
Allowance for Expenses	<u>0.148</u>		
Total Requirement			<u>25.326%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement			<u>(14.826%)</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1982)Basic MembersAMORTIZATION RATE REQUIREMENT

	Period			
	<u>10-Year</u>	<u>20-Year</u>	<u>30-Year</u>	<u>40-Year</u>
Accrued Unfunded Obligation	\$509,846,388	\$509,846,388	\$509,846,388	\$509,846,388
Amortization Requirement	66,027,440	40,911,393	33,166,239	29,712,910
Covered Payroll	173,365,864	173,365,864	173,365,864	173,365,864
Amortization Rate Requirement	<u>38.086%</u>	<u>23.598%</u>	<u>19.131%</u>	<u>17.139%</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	38.086%	23.598%	19.131%	17.139%
Normal Cost Rate Requirement	5.094	5.094	5.094	5.094
Allowance for Expenses	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>
Total Requirement	<u>43.328%</u>	<u>28.840%</u>	<u>24.373%</u>	<u>22.381%</u>
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	<u>(32.828%)</u>	<u>(18.340%)</u>	<u>(13.873%)</u>	<u>(11.881%)</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONBasic Members

STATEMENT OF REVENUE, EXPENDITURES,
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
 (Year Ending June 30, 1982)

Revenue:

Employer Contribution	\$18,789,566.32	
Member Contributions	14,361,275.76	
Transfers from Police and Fire Fund	25,691.15	
Transfer from State General Fund	1,822,091.90	
Investment Income	28,552,165.72	
Minnesota Post-Retirement Investment Fund Income	<u>34,029,396.78</u>	
Total Revenue		\$97,580,187.63

Expenditure:

Benefits	\$45,280,902.29	
Refund of Contributions	231,444.24	
Annuity Stabilization Reserve Adjustment	.56	
Administrative Expenses	<u>536,499.71</u>	
Total Expenditures		<u>46,048,846.80</u>

Increase in Assets (1982)		<u>\$51,531,340.83</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	\$33,150,842	\$ 42,707,278 ¹	\$ 9,556,436
Investment Income	62,581,563 ²	28,115,070	(34,466,493)
Transfers	<u>1,847,783</u>	<u>1,847,783</u>	<u>-</u>
Total Income	97,580,188	72,670,131	(24,910,057)
Benefit Payments	(46,048,847)	(46,048,847)	-
Amendment		49,684,433	49,684,433
Increase in Reserves Based on Salary Change	-	69,486,177	69,486,177
Mortality Loss	-	1,270,840	1,270,840
Other Experience Variation ³	<u>-</u>	<u>(2,843,628)</u>	<u>(2,843,628)</u>
Net Change	<u>\$51,531,341</u>	<u>\$144,219,106</u>	<u>\$ 92,687,765</u>

1 Normal Cost Plus Interest on Unfunded

2 Includes MPRF Income

3 Includes Actual Less Estimated Income Gain

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

ESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income less Reserves \$24,910,057

Estimated Sources of Change:

Amortization Payment	\$ 7,142,811	
Excess Interest (5.6% x Average Invested Assets)	32,931,756	
Contribution Rate Applied to Larger Payroll	277,442	
Deficit in Contribution Rate	<u>(18,308,904)</u>	<u>22,043,105</u>
Actual Less Estimated Gain		<u>\$ 2,866,952</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSBasic Members

As of July 1, 1981	10,848
New Entrants	-
Reinstated	13
Reinstated from Errors	<u>36</u>
TOTAL	<u>10,897</u>

Separations:

a. Refund of Contributions	
(i) Death	15
(ii) Withdrawal	93
b. With Deferred Annuity	51
c. With Disability Annuity	65
d. With Normal Retirement Annuity	684
e. With Survivor Annuity	23
f. With Option Annuity	8
g. Terminated	93
h. Terminated to Active	5
i. Died - No Refund or Benefit	13
j. Duplicate Member Number Errors	6
k. Added in Error	<u>-</u>
TOTAL SEPARATIONS	<u>1,051</u>
Current Active Total	<u>9,841</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ANNUITANTSBasic Members

<u>Annuitants:</u>	<u>Normal</u>	<u>Option</u>	<u>Survivor</u>	<u>Disabled</u>	<u>Children</u>	<u>Total</u>
Balance - July 1, 1981	8,986	220	3,146	419		12,771
Additions for year	896	68	136	83		1,183
Deletions for year	-395	-11	-169	-87		-662
Subtotal - July 1, 1982	9,487	277	3,113	415	263	13,292
Inactives	17	1	15	22		55
Actives	9,470	276	3,098	393	62	13,237

Note - Children are for informational purposes only. They are included as survivors. Active children are active children only.

Deferred Vested Members:

Balance - July 1, 1981	634
Additions	141
Deletions	-172
Balance - July 1, 1982	603

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

CONSIDERED EARNINGS

Active Male Employees

(Age and Service as of July 1, 1982)

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	-	-	-	-	-	-	-	-
35 to 39	-	-	-	-	-	-	-	-
40 to 44	-	-	1	13,370	-	-	2	79,840
45 to 49	-	-	2	22,160	2	27,987	1	14,635
50 to 54	-	-	2	27,170	2	45,888	-	-
55 to 59	-	-	1	7,563	-	-	4	66,739
60 to 64	-	-	1	1,998	3	62,221	4	94,112
65 & Up	-	-	-	-	-	-	2	17,300
TOTAL	-	\$ -	7	\$ 72,261	7	\$ 136,096	13	\$ 272,626

Age	YEARS OF SERVICE							
	10 to 14		15 to 19		20 to 24		25 to 29	
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 29	-	-	-	-	-	-	-	-
30 to 34	7	129,511	16	343,884	-	-	-	-
35 to 39	29	638,494	214	4,827,285	22	512,925	1	21,230
40 to 44	40	696,198	386	8,148,973	171	3,758,426	18	425,638
45 to 49	39	638,931	388	7,970,948	331	7,480,449	178	4,156,190
50 to 54	33	513,348	380	7,263,514	356	7,660,312	309	7,224,930
55 to 59	48	696,902	369	6,812,960	397	8,121,132	371	8,137,822
60 to 64	36	547,043	326	5,828,235	316	5,825,743	260	5,520,287
65 & Up	11	118,874	72	1,051,077	55	776,501	38	653,199
TOTAL	243	\$ 3,979,301	2,151	\$42,246,876	1,648	\$34,135,488	1,175	\$ 26,139,296

Age	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		All	
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 29	-	-	-	-	-	-	-	-
30 to 34	-	-	-	-	-	-	23	473,395
35 to 39	-	-	-	-	-	-	266	5,999,934
40 to 44	1	21,031	-	-	-	-	619	13,143,476
45 to 49	22	529,795	-	-	-	-	963	20,841,095
50 to 54	112	2,716,140	6	113,302	-	-	1,200	25,564,604
55 to 59	301	7,102,080	24	636,974	-	-	1,515	31,582,172
60 to 64	152	3,272,306	31	662,684	4	133,463	1,233	21,948,092
65 & Up	36	495,285	12	218,079	5	127,794	221	3,458,109
TOTAL	614	\$14,136,637	73	\$ 1,631,039	9	\$ 261,257	5,940	\$123,010,877

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

CONSIDERED EARNINGS

Active Female Employees
(Age and Service as of July 1, 1982)

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	-	-	-	-	1	4,608	-	-
35 to 39	-	-	-	-	-	-	-	-
40 to 44	-	-	-	-	-	-	1	18,963
45 to 49	-	-	-	-	-	-	1	14,260
50 to 54	-	-	1	14,584	-	-	1	26,675
55 to 59	-	-	1	5,109	-	-	3	47,577
60 to 64	-	-	1	5,085	-	-	2	31,843
65 & Up	-	-	2	17,752	-	-	-	-
TOTAL	-	\$ -	5	\$ 42,530	1	\$ 4,608	8	\$ 139,318

Age	YEARS OF SERVICE							
	10 to 14		15 to 19		20 to 24		25 to 29	
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 29	1	6,173	-	-	-	-	-	-
30 to 34	13	175,189	30	449,773	-	-	-	-
35 to 39	23	324,387	122	2,263,956	18	320,450	-	-
40 to 44	32	351,344	140	2,274,121	61	1,029,726	13	234,629
45 to 49	97	855,654	220	3,082,659	61	1,066,843	34	644,034
50 to 54	161	1,300,248	425	5,090,670	131	1,878,746	55	1,004,482
55 to 59	190	1,539,381	566	6,767,276	208	2,902,239	80	1,418,091
60 to 64	113	837,019	419	4,646,405	205	2,848,337	99	1,470,905
65 & Up	28	147,139	90	887,871	53	639,808	12	147,985
TOTAL	658	\$5,536,534	2,012	\$25,462,731	737	\$10,686,149	293	\$ 4,920,126

Age	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		All	
Under 25	-	\$ -	-	\$ -	-	\$ -	-	\$ -
25 to 29	-	-	-	-	-	-	1	6,173
30 to 34	-	-	-	-	-	-	44	629,570
35 to 39	-	-	-	-	-	-	163	2,908,793
40 to 44	-	-	-	-	-	-	247	3,908,783
45 to 49	4	79,723	-	-	-	-	417	5,743,173
50 to 54	33	624,135	5	90,900	-	-	812	10,030,440
55 to 59	58	1,116,553	21	388,807	-	-	1,127	14,185,033
60 to 64	34	622,870	12	244,800	7	145,497	892	10,852,761
65 & Up	7	122,595	4	76,651	2	50,460	198	2,090,261
TOTAL	136	\$2,565,876	42	\$ 801,158	9	\$ 195,957	3,901	\$50,354,987

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

BASIC MEMBERS

SUMMARY OF PLAN

1. Name

Public Employees Retirement Association.

2. Type of Plan

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

3. Employer Included

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

4. Employees Included

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

5. Allowable Service

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

6. Considered Salary

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

7. Employee Contributions

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

8. Employer Contributions

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

9. Normal Retirement Annuity

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

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

Annuity equal to:

- (a) 2% of "Average Salary" for each of the first 10 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 by 1/4% for each month that the member is under age 65 at the time of retirement.

12. Special Early Retirement Annuity

After attained age plus allowable service totals 90 years.

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 \$700 per month. Minimum family benefit equal to 30% of such average salary subject to the maximum limitation.

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

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

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

16. Separation Benefit

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

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

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

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

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

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

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

18. Optional Benefits

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

19. Maximum Annuity

Effective March 23, 1982 the normal monthly retirement annuity or disability benefit may not exceed 100% of final monthly salary.

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 ASSOCIATIONFINANCIAL BALANCE SHEET
(Year Commencing July 1, 1982)Coordinated MembersRESERVES

Entry Age Normal Reserves

Retirement \$629,130,207

Vesting 113,204,748

Disability 34,003,283

Survivors 6,948,120

Refund 64,735,651

\$839,022,009

Less Value of Benefits to be
Earned in the Future

387,694,693 \$451,327,316

Deferred Annuitants 1,892,061

Former Members without
Vested Rights 4,281,382

Retired Members:

Minnesota Fund
Admitted Assets 63,015,841*

Disability 2,562,432

Plus Net Mortality Loss
Payable toMinnesota Fund 229,629 65,807,902 *Acc. Debt* \$523,308,661Unfunded Obligation *Unf. F.C.* (141,321,435)Funded Obligation *assets* \$664,630,096* Includes Annuity Stabilization Reserve. The Retired
Life Reserves are \$63,245,470.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS

(July 1, 1982)

Coordinated MembersAMORTIZATION RATE REQUIREMENT

Present Value of Benefits (For Both Past and Future Service)		\$911,003,354
Obligation for Service Rendered to Date	\$ 523,308,661	
Net Assets	664,630,096	
Accrued Unfunded Obligation	(141,321,435)	
Funding Ratio		127%
Amortization (27-Year) Requirement Covered Payroll	(9,651,104) 906,607,554	
Amortization (27-Year) Rate Requirement		<u>(1.065%)</u>

ENTRY AGE NORMAL RATE REQUIREMENT

Value of Benefits to be Earned in the Future	\$ 387,694,593	
Present Value of Future Payroll	5,422,697,400	
Normal Cost Rate Requirement	7.149%	
Employee Contribution Rate	<u>4.000</u>	
Employer Normal Cost Rate Requirement		<u>3.149%</u>

ACTUARIAL BALANCE

Employer Contribution Rate Set by Law		5.500%
Amortization (27-Year) Rate Requirement	(1.065%)	
Normal Cost Rate Requirement	3.149	
Allowance for Expenses	<u>0.148</u>	
Total Requirement		2.232%
Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement		<u>3.268%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONACTUARIAL REQUIREMENTS
(July 1, 1982)Coordinated MembersAMORTIZATION RATE REQUIREMENT

	Period			
	<u>10-Year</u>	<u>20-Year</u>	<u>30-Year</u>	<u>40-Year</u>
Accrued Unfunded Obligation	\$(141,321,435)	\$(141,321,435)	\$(141,321,435)	\$(141,321,435)
Amortization Requirement	(18,301,772)	(11,339,998)	(9,193,162)	(8,235,953)
Covered Payroll	906,607,554	906,607,554	906,607,554	906,607,554
Amortization Rate Requirement	<u>(2.019%)</u>	<u>(1.251%)</u>	<u>(1.014%)</u>	<u>(0.908%)</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	(2.019%)	(1.251%)	(1.014%)	(0.908%)
Normal Cost Rate Requirement	3.149	3.149	3.149	3.149
Allowance for Expenses	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>	<u>0.148</u>
 Total Requirement	 <u>1.278%</u>	 <u>2.046%</u>	 <u>2.283%</u>	 <u>2.389%</u>
 Excess (Deficit) of Employer Contribution Rate Set by Law and Total Requirement	 <u>4.222%</u>	 <u>3.454%</u>	 <u>3.217%</u>	 <u>3.111%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONCoordinated Members

STATEMENT OF REVENUE, EXPENDITURES,
CHANGES IN RESERVES AND EXPERIENCE GAIN (LOSS)
 (Year Ending June 30, 1982)

Revenue:

Employer Contributions	\$52,123,747.13	
Member Contributions	37,915,949.94	
Annuity Stabilization Reserve Adjustment	.32	
Investment Income	49,379,628.32	
Minnesota Post-Retirement Investment Fund Income	6,185,279.45	
Transfer from State General Fund	<u>300,312.56</u>	
Total Revenue		\$145,904,917.72

Expenditure:

Benefits	\$ 7,463,083.23	
Refund of Contributions	11,637,490.91	
Administrative Expense	<u>1,720,742.33</u>	
Total Expenditures		<u>20,821,316.47</u>
Increase in Assets (1982)		<u>\$125,083,601.25</u>

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	\$ 90,039,697	\$55,693,166 ¹	\$(34,346,531)
Investment Income	55,564,908 ²	26,977,325	(28,587,583)
Transfers	<u>300,312</u>	<u>300,312</u>	<u>-</u>
Total Income	145,904,917	82,970,803	(62,934,114)
Benefit Payments	(20,821,316)	(20,821,316)	-
Amendment		13,861,687	13,861,687
Increase in Reserves Based on Salary Change	-	5,029,508	5,029,508
Mortality Loss	-	229,629	229,629
Other Experience Variation ³	<u>-</u>	<u>(6,000,208)</u>	<u>(6,000,208)</u>
Net Change	<u>\$125,083,601</u>	<u>\$75,270,103</u>	<u>\$(49,813,498)</u>

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

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

ESTIMATED SOURCES OF GAIN FROM INCOME

Actual Income less Reserves \$62,934,114

Estimated Sources of Gain:

Excess Interest
(4.9% x Average
Invested Assets) \$29,502,326

Contribution Rate Applied
to Larger Payroll 3,935,449

Excess Contribution Rate 26,786,028 60,223,803

Actual Less Estimated Gain \$ 2,710,311

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ACTIVE MEMBERSCoordinated Members

As of July 1, 1981	77,025
New Entrants	8,876
Reinstated	2,933
Reinstated from Error	<u>537</u>
TOTAL	<u>89,371</u>

Separations:

a. Refund of Contributions	
(i) Death	128
(ii) Withdrawal	8,517
b. With Deferred Annuity	148
c. With Disability Annuity	59
d. With Normal Retirement Annuity	558
e. With Survivor Annuity	-
f. With Option Annuity	3
g. Terminated	3,456
h. Terminated to Active	749
i. Died - No Refund or Benefit	23
j. Duplicate Member Number Errors	132
k. Added in Error	<u>1</u>
TOTAL SEPARATIONS	<u>13,025</u>
Current Active Total	<u>75,597</u>

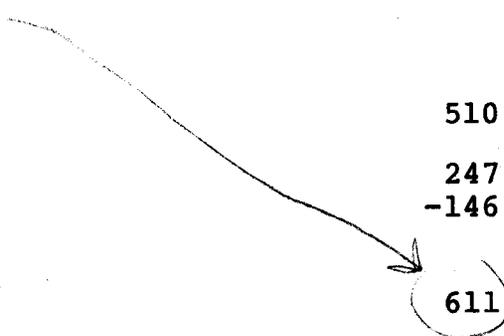
PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONRECONCILIATION OF ANNUITANTSCoordinated Members

<u>Annuitants:</u>	<u>Normal</u>	<u>Option</u>	<u>Disabled</u>	<u>Total</u>
Balance - July 1, 1981	3,308	105	244	3,657
Additions for year	650	31	69	750
Deletions for year	-116	-3	-51	-170
Subtotal - July 1, 1982	3,842	133	262	4,237
Inactives	4	0	14	18
Actives	3,838	133	248	4,219

Note - Children are for informational purposes only. They are included as survivors. Active children are active children only.

Deferred Vested Members:

Balance - July 1, 1981	510
Additions	247
Deletions	-146
Balance - July 1, 1982	611



PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

CONSIDERED EARNINGS

All Male Employees

(Age and Service as of July 1, 1982)

Age	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	508	\$ 2,586,899	550	\$ 5,811,315	678	\$ 9,313,760	68	\$ 1,068,891
25 to 29	492	3,186,350	712	9,304,879	1,579	25,026,331	1,065	18,931,352
30 to 34	381	2,613,075	584	8,295,205	1,569	27,070,395	1,808	36,129,214
35 to 39	202	1,477,426	346	5,256,225	855	15,630,016	1,168	24,712,389
40 to 44	123	760,013	231	3,349,219	515	8,708,448	693	13,537,461
45 to 49	110	669,918	174	2,309,456	430	6,719,031	605	11,035,521
50 to 54	90	544,288	175	2,234,140	415	6,352,539	589	9,958,399
55 to 59	73	394,017	152	1,697,152	341	4,758,486	622	10,349,781
60 to 64	64	263,338	84	734,584	255	3,090,107	446	6,539,457
65 & Up	91	265,407	70	369,470	136	893,800	196	1,715,037
TOTAL	2,134	\$12,760,731	3,078	\$39,361,645	6,773	\$107,562,913	7,260	\$133,977,502

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	49	858,131	2	53,615	-	-	-	-
30 to 34	668	13,982,282	28	691,263	-	-	-	-
35 to 39	965	21,713,238	131	3,116,526	10	234,281	-	-
40 to 44	667	14,336,106	188	4,687,867	41	1,119,241	6	145,991
45 to 49	601	12,339,102	143	3,457,582	119	3,482,491	12	296,090
50 to 54	693	13,077,760	175	4,025,134	101	2,555,465	65	1,881,828
55 to 59	689	12,177,232	198	4,086,443	113	2,565,908	77	2,044,635
60 to 64	550	9,490,937	191	3,817,836	121	2,548,890	73	1,690,886
65 & Up	113	1,423,151	23	268,415	15	225,435	8	141,294
TOTAL	4,995	\$99,397,939	1,079	\$24,204,681	520	\$ 12,731,711	241	\$ 6,200,724

Age	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		All	
	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	-	\$ -	-	\$ -	-	\$ -	1,804	\$ 18,780,865
25 to 29	-	-	-	-	-	-	3,899	57,360,658
30 to 34	-	-	-	-	-	-	5,038	88,781,434
35 to 39	-	-	-	-	-	-	3,677	72,140,101
40 to 44	-	-	-	-	-	-	2,464	46,644,346
45 to 49	3	95,282	1	29,374	-	-	2,198	40,433,847
50 to 54	16	449,442	3	90,558	-	-	2,322	41,169,553
55 to 59	55	1,560,886	5	121,045	-	-	2,325	39,755,585
60 to 64	28	687,402	8	251,781	5	51,660	1,825	29,166,878
65 & Up	1	11,896	2	12,117	2	34,523	657	5,360,545
TOTAL	103	\$ 2,804,908	19	\$ 504,875	7	\$ 86,183	26,209	\$439,593,812

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

CONSIDERED EARNINGS

All Female Employees
(Age and Service as of July 1, 1982)

Age	YEARS OF SERVICE							
	Under 1		1		2 to 4		5 to 9	
	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	1,464	\$ 6,438,368	1,667	\$15,190,211	1,838	\$ 18,579,512	243	\$ 2,686,737
25 to 29	1,026	5,166,883	1,304	13,555,396	2,598	30,623,386	1,830	22,868,492
30 to 34	912	4,008,490	1,209	10,479,770	2,282	24,530,221	1,795	25,337,230
35 to 39	770	3,146,832	1,128	8,222,788	2,300	20,704,796	1,736	19,673,683
40 to 44	515	2,143,353	799	5,470,969	1,949	16,589,488	2,019	19,663,095
45 to 49	327	1,385,973	568	4,008,805	1,427	11,829,399	1,954	17,486,948
50 to 54	204	753,382	412	2,853,974	1,054	8,472,349	1,566	14,224,490
55 to 59	157	496,511	263	1,602,106	744	5,665,115	1,270	11,195,036
60 to 64	55	174,692	130	715,588	351	2,510,185	735	5,970,288
65 & Up	128	198,457	64	295,449	156	804,264	270	1,611,454
TOTAL	5,558	\$23,912,941	7,544	\$62,395,056	14,699	\$140,308,715	13,418	\$140,717,453

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	1	\$ 9,507	-	\$ -	-	\$ -	-	\$ -
25 to 29	129	1,722,731	1	17,344	-	-	-	-
30 to 34	676	10,371,115	24	358,457	1	21,512	-	-
35 to 39	711	11,525,064	107	2,118,665	2	39,381	-	-
40 to 44	872	10,544,597	88	1,566,509	18	345,673	4	69,501
45 to 49	1,199	13,212,687	104	1,565,117	13	281,729	5	80,787
50 to 54	1,270	13,390,209	166	2,430,636	28	535,529	10	173,513
55 to 59	1,191	12,363,335	190	2,710,016	32	539,825	15	245,601
60 to 64	761	7,379,838	134	1,816,175	29	487,293	19	358,179
65 & Up	271	1,875,240	34	359,937	12	142,758	7	106,775
TOTAL	7,081	\$82,394,323	848	\$12,942,856	135	\$ 2,393,700	60	\$ 1,034,356

Age	YEARS OF SERVICE							
	30 to 34		35 to 39		40 & Up		All	
	No.	Earnings	No.	Earnings	No.	Earnings	No.	Earnings
Under 25	-	\$ -	-	\$ -	-	\$ -	5,213	\$ 42,904,335
25 to 29	-	-	-	-	-	-	6,888	73,954,232
30 to 34	-	-	-	-	-	-	6,899	75,106,795
35 to 39	-	-	-	-	-	-	6,754	65,431,209
40 to 44	-	-	-	-	-	-	6,264	56,393,185
45 to 49	-	-	-	-	-	-	5,597	49,851,445
50 to 54	7	146,074	-	-	-	-	4,717	42,980,156
55 to 59	10	218,813	6	116,424	1	13,064	3,879	35,165,846
60 to 64	8	189,621	2	41,326	2	36,076	2,226	19,679,261
65 & Up	2	33,391	1	17,327	6	102,226	951	5,547,278
TOTAL	27	\$ 587,899	9	\$ 175,077	9	\$ 151,366	49,388	\$467,013,742

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

COORDINATED MEMBERS

SUMMARY OF PLAN

1. Name

Public Employees Retirement Association.

2. Type of Plan

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

3. Employer Included

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

4. Employees Included

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

5. Allowable Service

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

6. Considered Salary

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

7. Employee Contributions

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

8. Employer Contributions

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

9. Normal Retirement Annuity

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

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

Annuity equal to:

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

10. Late Retirement Annuity

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

11. Early Retirement Annuity

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

Annual Annuity determined as for Normal Retirement considering allowable service and salary to actual retirement and reduced by 1/4% for each month that the member is under age 65 at the time of retirement.

12. Special Early Retirement Benefit

After attained age plus allowable service totals 90 years.

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

13. Proportionate Annuity

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

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

14. Disability Benefit

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

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

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

15. Death Benefit

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

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

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

16. Separation Benefit

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

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

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

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

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

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

18. Optional Benefits

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

19. Maximum Annuity

Effective March 23, 1982 the normal monthly retirement annuity or disability benefit may not exceed 100% of final monthly salary.

20. Expenses

Paid by Association from retirement fund.

21. Actuarial Method

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

MEMORANDUM TO: Legislative Commission on Pensions and Retirement

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

RE: June 30, 1982 Actuarial Valuation of the Public Employees Retirement Association - General Fund

DATE: January 26, 1982

The purpose of this memorandum is to review and discuss the results of the June 30, 1982 Actuarial Valuation of the Public Employees Retirement Association - General Fund. This Actuarial Valuation was prepared by Mr. Davis H. Roenisch of Compensation and Capital Incorporated.

The Actuarial Valuation was conducted using the Entry Age Normal Cost actuarial method, interest at 5%, and a salary increase assumption of $3\frac{1}{2}\%$, which are in accordance with Minnesota Statutes, Chapter 356.

The following changes were reflected in the provisions of the plan and the actuarial assumptions. There were no changes in the actuarial methods from the previous year.

Plan Provisions

- Removal of the 40 year allowable service limit in the benefit computation and introduction of a maximum benefit limit of 100% of final average salary.
- Special early retirement benefits are available with reduction if age plus allowable service totals 90 or more (Rule of 90).
- Early retirement benefits subject to reduction are reduced $\frac{1}{4}\%$ for each month prior to age 65. The prior reduction was an actuarial equivalent reduction.
- Maximum family benefits under the Basic Group are now \$700 per month in the survivor provisions of the plan.

Actuarial Assumptions

- An assumption was added for the Rule of 90. The increased Unfunded Accrued Liability was determined by taking a percentage of the difference in Accrued Liability based on the current retirement age assumptions and the Accrued Liability based on the earliest possible date of retirement under the Rule of 90. These percentages were 50% and 70% for the Basic and Coordinated Group, respectively.

The effect of these changes increased the Unfunded Accrued Liability by \$63,546,120 - \$49,684,433 for the Basic Group and \$13,861,687 for the Coordinated Group.

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

SUMMARY OF ACTUARIAL VALUATION RESULTS

1. Membership*	<u>6-30-81</u>	<u>6-30-82</u>	<u>Increase</u>
Active Members	87,857	85,438	-2,419
Inactive Members	8,097	**	**
Retired Members	12,252	13,329	1,077
Disabled Members	624	677	53
Survivors and Beneficiaries	3,739	3,523	-216
Deferred Annuitants	1,708	1,214	-494

* The Association went to a new computerized recordkeeping system in 1982 and, in the transition, extraneous data was purged. Therefore, there is not a consistent comparison between 1981 and 1982.

** Not available.

2. Payroll

6-30-81:	\$1,037,047,955
6-30-82:	\$1,079,973,418
Increase:	\$ 42,925,463
% Increase:	4.1%

3. Annuities In Force: Annual Basis

6-30-81:	\$ 45,556,533
6-30-82:	\$ 52,708,964
Increase:	\$ 7,152,431
% Increase:	15.7%

SUMMARY OF ACTUARIAL VALUATION RESULTS

4. Actuarial Balance Sheet (In \$1,000's)	<u>6-30-81</u>	<u>6-30-82</u>	<u>Increase</u>	<u>(%)</u>
Accrued Liabilities				
Annuities In Force	\$ 405,021	\$ 493,332	\$ 88,311	(21.8%)
Deferred Annuities	20,670	19,887	-783	(-3.8%)
Active Members	1,001,807	1,133,769	131,962	(13.2%)
	<u>\$1,427,498</u>	<u>\$1,646,988</u>	<u>\$219,490</u>	<u>(15.4%)</u>
Assets	\$1,101,848	\$1,278,463	\$176,615	(16.0%)
Unfunded Accrued Liability	\$ 325,650	\$ 368,525	\$ 42,875*	(13.2%)
Funding Ratio	77.2%	77.6%	.4%	(.5%)
Prospective Funding Ratio**	68.2%	68.1%	-.1%	(-.1%)

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

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

5. Analysis of Increase in Unfunded Accrued Liability

The Unfunded Accrued Liability increased by \$42,874,267 from June 30, 1981 to June 30, 1982. The items making up this increase are shown below:

Actuarial Experience

Interest	\$63,054,076	Gain
Salary Scale	74,515,685	Loss
Mortality: Retired Members	1,500,469	Loss
Pre-Retirement Experience	8,843,836	Gain
	<u>\$ 4,118,242</u>	<u>Loss</u>

Contribution Deficiency (\$24,790,095)

Increase In Unfunded Accrued Liability from Plan Changes and Actuarial Assumptions	<u>\$63,546,120</u>
	<u>\$42,874,267</u>

SUMMARY OF ACTUARIAL VALUATION RESULTS

6. Contribution Levels and Support Rates

Based on the Actuarial Valuation results, the contribution, as a percentage of payroll, which will prevent the Unfunded Accrued Liability from increasing is 9.951%. The contribution, as a percentage of payroll, which will amortize the Unfunded Accrued Liability by June 30, 2009 is 10.575%. The weighted average support rate for the Basic Group and the Coordinated Group is 10.945%.

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

	<u>6-30-81</u>	<u>6-30-82</u>
<u>Contribution Required to Keep Unfunded Accrued Liability from Increasing</u>		
Normal Cost	8.036%	8.097%
Expense	.148	.148
Interest	1.570	1.706
	<u>9.754%</u>	<u>9.951%</u>
<u>Contribution Required to Amortize Unfunded Accrued Liability by June 30, 2009</u>		
Normal Cost	8.036%	8.097%
Expense	.148	.148
Amortization	2.108	2.330
	<u>10.292%</u>	<u>10.575%</u>
<u>Current Support*</u>		
Member	4.663%	4.642%
Employer	4.663	4.642
Employer Additional	1.666	1.661
	<u>10.992%</u>	<u>10.945%</u>

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

If the contribution percentages are applied to payroll as of June 30, 1982, the contribution to keep the Unfunded Accrued Liability from increasing would be \$107,468,000. The contribution to amortize the Unfunded Accrued Liability by June 30, 2009 would be \$114,207,000. Current support would be \$118,203,000.

DISCUSSION OF ACTUARIAL VALUATION RESULTS

1. Total membership decreased from June 30, 1981 and part of this is probably due to the transition to a new record keeping system.

Payroll increased by 4.1% and average salary increased from \$11,804 on June 30, 1981 to \$12,640 on June 30, 1982.

As expected, the active membership of the Basic Group decreased from 10,891 to 9,841 and average salary increased from \$15,781 to \$17,617.

The active membership of the Coordinated Group decreased by 1,369 from June 30, 1981 and average salary increased from \$11,241 to \$11,993.

2. The Unfunded Accrued Liability increased by \$42,874,267 from June 30, 1981 to June 30, 1982 and this was primarily due to plan changes and accompanying actuarial assumption changes of \$63,546,120 in the Unfunded Accrued Liability.

The items making up the increase in the Unfunded Accrued Liability are shown below for the Basic and Coordinated Groups:

	<u>Basic</u>	<u>Coordinated</u>
Actuarial Experience	\$33,446,896	(\$29,328,654)
Contribution Deficiency	9,556,436	(34,346,531)
Increases Due to Plan Changes and Actuarial Assumptions	49,684,433	13,861,687
	<u>\$92,687,765</u>	<u>(\$49,813,498)</u>

Therefore, there was an increase in the Unfunded Accrued Liability for the Basic Group and a decrease in the Unfunded Accrued Liability for the Coordinated Group. There was much less actuarial loss from salary in the Coordinated Group and this contributed to the overall actuarial gain for this group. Here again, contributions were sufficient to keep the Unfunded Accrued Liability from increasing in the Coordinated group but not the Basic Group.

3. The normal cost rate increased slightly from a year ago and this would be expected with the plan changes. The total support rate is still in excess of that required to amortize the Unfunded Accrued Liability by June 30, 2009. Based on the results of the June 30, 1982 Actuarial Valuation, the Unfunded Accrued Liability will be amortized in 20 to 21 years from now. It is important to note that the weighted average support rates shown on Page 4 of this memorandum will decrease each year due to the heavier future weighting of the Coordinated Group.

In the groups are viewed separately, the support rate for the Basic Group is 18.5% and the amortization rate is 33.326%. There is a deficiency in the support rate of 14.826% of payroll. This deficiency has increased from 7.387% in 1978 to 14.826% in 1982. It is expected to increase.

DISCUSSION OF ACTUARIAL VALUATION RESULTS

3. On the other hand, the support rate for the Coordinated Group is 9.50% and the amortization rate is 6.232%. This provides an excess of 3.268% of payroll.

For the groups combined, there was been an overall sufficiency of from .709% to .370% in the last five years. It is difficult to determine if this sufficiency will continue since there would seem to be required favorable actuarial experience under the Coordinated Group to offset the deterioration in funding for the Basic Group.

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

CONCLUSION

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

James R. Bordewick

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

MEMORANDUM TO: Legislative Commission on Pensions and Retirement

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

RE: June 30, 1982 Actuarial Valuation of the Public Employees Retirement Association - Police and Fire Fund

DATE: January 24, 1983

The purpose of this memorandum is to review and discuss the results of the June 30, 1982 Actuarial Valuation of the Public Employees Retirement Association - Police and Fire Fund. This Actuarial Valuation was prepared by Mr. Davis H. Roenisch of Compensation and Capital Incorporated.

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

There were no changes in the actuarial assumptions or actuarial methods from the previous year. There were some plan changes and these involved:

- Removal of the 40 year allowable service limit in the benefit computation and introduction of a maximum benefit limit of 100% of final average salary.
- Introduction of a pre-retirement spouse benefit for deaths which occur after age 55 and after 10 ten years of allowable service, but before actual retirement.

These amendments increased the Unfunded Accrued Liability by \$914,558.

SUMMARY OF ACTUARIAL VALUATION RESULTS

1. Membership*	<u>6-30-81</u>	<u>6-30-82</u>	<u>Increase</u>
Active Members	4,356	4,508	152
Inactive Members	310	**	**
Retired Members	593	637	44
Disabled Members	33	53	20
Survivors and Beneficiaries	263	217	-46
Deferred Annuitants	213	178	-35

* The Association went to a new computerized recordkeeping system in 1982 and, in the transition, extraneous data was purged. Therefore, there is not a consistent comparison between 1981 and 1982.

** Not available.

SUMMARY OF ACTUARIAL VALUATION RESULTS

2. Payroll:

6-30-81:	\$85,810,155
6-30-82:	\$97,295,847
Increase:	\$11,485,692
% Increase:	13.4%

3. Annual Annuities In Force:

6-30-81:	\$3,874,616
6-30-82:	\$4,691,766
Increase:	\$ 817,150
% Increase:	21.1%

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

	<u>6-30-81</u>	<u>6-30-82</u>	<u>Increase</u>	<u>(%)</u>
<u>Accrued Liabilities</u>				
Annuities In Force	\$ 41,848	53,138	\$ 11,290	(27.0%)
Deferred Annuities	2,654	2,490	- 164	(-6.2%)
Active Members	143,432	166,844	23,412	(16.3%)
	<u>\$187,934</u>	<u>\$222,472</u>	<u>\$ 34,538</u>	<u>(18.4%)</u>
<u>Assets</u>	<u>\$174,896</u>	<u>\$209,225</u>	<u>\$ 34,329</u>	<u>(19.6%)</u>
Unfunded Accrued Liability	\$ 13,038	\$ 13,247	\$ 209	(1.6%)
Funding Ratio	93.1%	94.0%	.9%	(1.0%)
Prosepctive Funding Ratio*	91.1%	92.2%	1.1%	(1.2%)

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

5. Analysis of Increase in Unfunded Accrued Liability

The Unfunded Accrued Liability increased \$208,992 from June 30, 1981 to June 30, 1982. The items making up this increase are shown below:

Actuarial Experience

Interest	\$10,361,420	Gain
Salary Scale	\$15,777,554	Loss
Mortality: Retired Members	35,889	Gain
Pre-Retirement Experience	559,576	Loss
	<u>\$ 5,939,821</u>	<u>Loss</u>

Contribution Deficiency (\$ 6,645,387)

<u>Increase in Unfunded Accrued Liability from Plan Changes</u>	<u>\$ 914,558</u>
	<u>\$ 208,992</u>

SUMMARY OF ACTUARIAL VALUATION RESULTS

6. Contribution Levels and Support Rates

Based on the Actuarial Valuation results, the contribution, as a percentage of payroll, which will prevent the Unfunded Accrued Liability from increasing is 16.227%. The contribution, as a percentage of payroll, which will amortize the Unfunded Accrued Liability by June 30, 2009 is 16.476%. The current support rate is 20%.

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

	<u>6-30-81</u>	<u>6-30-82</u>
<u>Contribution Required to Keep Unfunded Accrued Liability from Increasing</u>		
Normal Cost	15.418%	15.457%
Expense	.089	.089
Interest	.760	.681
	<u>16.267%</u>	<u>16.227%</u>
<u>Contribution Required to Amortize Unfunded Accrued Liability by June 30, 2009</u>		
Normal Cost	15.418%	15.457%
Expense	.089	.089
Amortization	1.020	.930
	<u>16.527%</u>	<u>16.476%</u>
<u>Current Support</u>		
Member	8.000%	8.000%
Employer	12.000	12.000
Employer Additional	-	-
	<u>20.000%</u>	<u>20.000%</u>

If the contribution percentages are applied to payroll as of June 30, 1982, the contribution to keep the Unfunded Accrued Liability from increasing would be \$15,788,000. The contribution required to amortize the Unfunded Accrued Liability by June 30, 2009 would be \$16,030,000. Current support would be \$19,459,000.

DISCUSSION OF ACTUARIAL VALUATION RESULTS

1. There was a small increase in active membership from the previous year. Total payroll increased by 13.4% as compared to 13.1% last year. Average salary increased from \$19,699 on June 30, 1981 to \$21,583 on June 30, 1982.

DISCUSSION OF ACTUARIAL VALUATION RESULTS

2. The Unfunded Accrued Liability increased slightly from a year ago. This is attributable to the plan changes which were not offset entirely by the net of the contributions in excess of the normal cost and interest requirements and the actuarial loss for the year.

The Unfunded Accrued Liability has decreased by approximately \$7,800,000 since June 30, 1978.

3. Both the normal cost percentages and the total contribution rates changed very little from last year. The current support rate is 3.524% of payroll in excess of that required to amortized the Unfunded Accrued Liability by June 30, 2009. The current support rates will amortize the Unfunded Accrued Liability in three to four years from June 30, 1982.
4. The plan is in a strong funding position as evidenced by the funding ratios.

CONCLUSION

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


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