

Public Employees Retirement Association

ACTUARIAL VALUATION REPORT  
(Based on a June 30, 1973 Census)

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Public Employees Retirement Assoc.

A. S. Hansen, inc.

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Public Employees Retirement Association

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Public Employees Retirement Association

General Fund

STATEMENT OF FINANCIAL CONDITION AND  
STATUS OF FUNDING  
AS OF JUNE 30, 1973

This section is designed to show the financial condition of the retirement system by comparing the assets on hand to the value of the benefits earned to date; to derive the unfunded past service obligation; and to show the trend of the ratio of assets to the funding objective, i.e., the present value of benefits earned to date.

Public Employees Retirement Association

SUMMARY SHEET  
(Census as of June 30, 1973)

	<u>General</u>	<u>Police and Fire</u>
<u>MEMBERSHIP</u>		
Retired Members and Beneficiaries	10,735	458
Annual Benefit Payments	\$ 14,179,695	\$ 736,734
Active Members	72,981	3,105
Participating Payroll	<u>\$459,146,137</u>	<u>\$ 30,192,486</u>
<u>FUNDED STATUS</u>		
Value of Benefits Earned to Date	\$478,489,266	\$ 51,833,540
Assets	349,259,698	38,959,178
Funding Ratio	<u>73.0%</u>	<u>75.2%</u>
<u>ADEQUACY OF CONTRIBUTIONS*</u>		
Member/Employer	9.500%	20.000%
Actuarial Requirement	8.973%	18.702%
Margin	<u>0.527%</u>	<u>1.298%</u>

\*Assumes Basic Member additional will be funded over their remaining working lifetime.

# A. S. Hansen, inc.

ACTUARIES AND CONSULTANTS

1080 Green Bay Road  
Lake Bluff, Illinois 60044  
Telephone 312-234-3400

October 9, 1973

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 for the year ended June 30, 1973, 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.

This is the first report based on the new law which became effective on July 1, 1973. Because of the sweeping nature of the changes, and because computing the old law benefits would not have served any useful purpose, this report does not contain an analysis of the experience gains and losses as distinguished from the increase in obligation due to the new benefits. It is our intention to again provide an analysis of the gains and losses in future years, when the figures for two successive years will be based on the same set of benefits.

A second modification of prior report lies in the inclusion of exhibits showing the financial condition and status of funding the program. The obligation in these exhibits represent the amount which would be required to provide for all of the benefits earned to date; i.e., the amount of benefit based on the member's service and earnings to date and payable at normal retirement. The ratio of the assets to this obligation indicates that the general fund is 73%, and the police and fire fund is 75%, funded. It is expected that these percentage funding ratios will increase in subsequent years.

The unfunded obligation for liabilities earned to date should be carefully distinguished from the entry age normal level contribution requirements accumulated to date, referred to in the law as the accrued liability. This figure is shown on page 10 for the General, and page 18 for the Police and Fire, Fund. The amount of accumulated entry age normal contribution requirements accumulated to date is \$220,852,315 for the general fund and \$12,754,531 for the police and fire fund.

A. S. Hansen, inc.

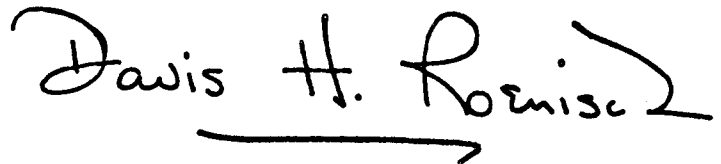
Board of Trustees  
Public Employees Retirement Association  
October 9, 1973  
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Finally, it should be observed that the actuarial requirement for the general fund members, stated as a percentage of payroll, is on a conservative basis. The requirement for the benefits payable to the basic members in excess of the coordinated formula has been computed on the assumption that these benefits will be completely funded over the remaining working lifetime of these members. As shown by Exhibit 8 (page 13), the new program will still be fully funded in approximately 36 years even under these conditions.

On the basis of the foregoing, and the assumptions indicated herein, we hereby certify that, to the best of our knowledge and belief, the attached statements are true and correct. A copy of this report will supply the data required by the Legislative Retirement Study Commission for the year ended June 30, 1973.

Respectfully submitted,

A. S. HANSEN, INC.

A handwritten signature in dark ink, reading "Davis H. Roenisch". The signature is written in a cursive style with a long horizontal line extending from the end of the name.

Davis H. Roenisch  
Fellow, Society of Actuaries

DHR:lh  
1366-01-83

Public Employees Retirement Association

GLOSSARY OF TERMS

Considered Payroll

Annual Compensation of the Members included in the Association.

Entry Age Normal Level Contribution Requirements

The level percentage of payroll which, if paid from the average age at entry of a Member into the Association to retirement age, will accumulate to the sum required to provide for the benefits earned by his service.

Interest Requirement on Unfunded Obligation

The amount of interest that is earned each year on the unfunded obligation. Failure to pay the full interest requirement results in a corresponding increase in the unfunded obligation.

Prior Entry Age Normal Contribution Requirements  
Accumulated to Date Remaining to be Financed

The amount in excess of the current asset balance that would have been accumulated on June 30, 1973 if the entry age normal cost method had always been employed and the entry age normal contributions for past years had been paid as scheduled.

Present Value of All Benefits

The single sum amount which, if accumulated in a fund in accordance with the actuarial assumptions, would be sufficient to pay all benefits expected to be earned by present members for past and future service as they fall due.

Funding Objective

The primary funding objective is to accumulate sufficient assets, in the event the Association is terminated, to continue benefit payments to retirees and their beneficiaries; to guarantee payment of all benefits earned to date for all Members or to return their accumulated contribution balances, whichever is greater.

Unfunded Obligation

The portion of the present value of benefits earned to date which was not funded on June 30, 1973.



### Benefits Earned to Date

Benefits earned to June 30, 1973 by active Members even though a Member may leave the Association voluntarily prior to normal or early retirement or eligibility for a Deferred Vested Benefit. The figure shown represents the present value of his benefit earned to date payable at normal retirement or his accumulated contribution balance, whichever is greater.

- Member contribution balances are fully vested from the date of entry into the Association and are credited with interest at 3-1/2% per year after the third year of membership.
- Benefits earned in addition to Member contribution balances are fully vested after 10 years of membership.

Public Employees Retirement AssociationGeneral FundSTATEMENT OF FINANCIAL CONDITION  
(Year Ended - June 30, 1973)ASSETS

Cash and Investments (Net)	\$349,259,698
Benefits Earned to Date Remaining to be Financed by Members and Employers	<u>129,229,568</u>
<u>Total</u>	<u>\$478,489,266</u>

LIABILITIES

Benefits Payable to Retired Members and Their Beneficiaries	\$140,382,076
Deferred Vested Benefits Payable to Inactive Members	1,424,756
Benefits Earned to Date by Active Members	<u>336,682,434</u>
<u>Total</u>	<u>\$478,489,266</u>

Public Employees Retirement AssociationGeneral FundANALYSIS OF FUNDED STATUS(Year Ended - June 30, 1973)

	<u>Assets</u>	<u>Obligation</u>	<u>Unfunded Obligation</u>
Retired Members and Beneficiaries	\$140,382,076	\$140,382,076	\$ -0-
Deferred Vested Inactive Members	1,424,756	1,424,756	-0-
Active Members	<u>143,511,508</u>	<u>336,682,434</u>	<u>129,229,568</u>
<u>Total</u>	<u>\$349,259,698</u>	<u>\$478,489,266</u>	<u>\$129,229,568</u>
Ratio of Assets to Obligation	<u>73.0%</u>		

Public Employees Retirement Association

General Fund

ACTUARIAL BASIS FOR DETERMINATION OF  
THE ENTRY AGE NORMAL LEVEL FINANCING  
REQUIREMENT (AS A PERCENTAGE OF PAYROLL)  
OF THE PROGRAM

This section is designed to illustrate the adequacy of the Employer/Member contribution rate by comparing it to the level actuarial requirement, expressed as a percentage of payroll.

Public Employees Retirement AssociationGeneral FundACTUARIAL BALANCE SHEET  
(Year Ended - June 30, 1973)RESOURCES

	<u>Residual Benefit</u>	<u>Integrated Plan</u>	<u>Total</u>
Cash and Investments (Net)	\$216,508,675	\$132,751,023	\$349,259,698
Present Value of All Remaining Benefits to be Funded by Future Contributions	<u>127,579,002</u>	<u>449,985,597</u>	<u>577,564,599</u>
<u>Total</u>	<u>\$344,087,677</u>	<u>\$582,736,620</u>	<u>\$926,824,297</u>

LIABILITIES AND RESERVES

Benefits Payable to Retired Members and Their Beneficiaries	\$ 75,605,303	\$ 64,776,773	\$140,382,076
Deferred Vested Benefits Payable to Inactive Members	453,171	971,585	1,424,756
Active Members	<u>268,029,203</u>	<u>516,988,262</u>	<u>785,017,465</u>
<u>Total</u>	<u>\$344,087,677</u>	<u>\$582,736,620</u>	<u>\$926,824,297</u>

Public Employees Retirement AssociationGeneral FundANALYSIS OF ACTUARIAL OBLIGATION(Census as of June 30, 1973)Retired Members

Service Retirement (Payable from Minnesota Adjustable Fixed Benefit Fund)	\$104,014,248	
Disability	3,032,050	
Survivor	22,800,002	
Reserve for Future Old Law Survivors	<u>10,535,776</u>	\$140,382,076

Deferred Vested Benefits

1,424,756

Active Members

Retirement	\$606,852,222	
Disability	40,606,895	
Survivor	34,126,817	
Vested - Retirement	74,315,073	
- Refund	<u>29,116,458</u>	<u>785,017,465</u>

Total Obligation\$926,824,297

Public Employees Retirement AssociationGeneral Fund

DETERMINATION OF THE PRIOR ENTRY AGE  
NORMAL CONTRIBUTION REQUIREMENTS  
 (Census as of June 30, 1973)

	<u>Residual Benefit</u>	<u>Integrated Plan</u>	<u>Total</u>
Total Obligation	\$344,087,677	\$582,736,620	\$926,824,297
Net Assets on Hand	<u>216,508,675</u>	<u>132,751,023</u>	<u>349,259,698</u>
Obligation to be Funded in the Future	\$127,579,002	\$449,985,597	\$577,564,599
Present Value of Future Attained Age Normal Contribution	127,579,002	Not Applicable	127,579,002
Present Value of Future Entry Age Normal Level Contribution Requirements	<u>Not Applicable</u>	<u>229,133,282</u>	<u>229,133,282</u>
Prior Entry Age Normal Level Contribution Requirements <u>Accumulated to Date</u>	<u>\$ -</u>	<u>\$220,852,315</u>	<u>\$220,852,315</u>

Public Employees Retirement AssociationGeneral FundINTEREST REQUIREMENT ON THE  
PRIOR ENTRY AGE NORMAL REQUIREMENTS  
(Census as of June 30, 1973)

	<u>Residual Benefit</u>	<u>Integrated Plan</u>	<u>Total</u>
Prior Entry Age Normal Level Contribution Requirements Accumulated to Date	\$ -	\$220,852,315	\$220,852,315
Interest Requirement on Accumulated Net Prior Requirement	\$ -	\$ 11,042,616	\$ 11,042,616
Considered Payroll	\$184,094,937	\$459,146,137	\$459,146,137
Interest Requirement as Percentage of Considered Payroll	0.000%	2.405%	2.405%



Public Employees Retirement Association

General Fund

ENTRY AGE NORMAL LEVEL CONTRIBUTION REQUIREMENTS  
(Census as of June 30, 1973)

	<u>Residual Benefit</u>	<u>Integrated Plan</u>
Present Value of Future Entry Age Normal Level Contribution Requirements	\$ 127,579,002	\$ 229,133,282
Present Value of Future Payroll of Current Members of the Association	\$1,453,063,800	\$3,669,373,900
Attained Age Normal Level Contribution Rate *	8.780%	Not Applicable
Entry Age Normal Level Contribution Rate at Beginning of the Year *	Not Applicable	6.244%
Normal Level Contribution Rate Adjusted for Mid-Year Receipt	<u>9.000%</u>	<u>6.400%</u>

\*Future Requirements ÷ Future Payroll

Public Employees Retirement AssociationGeneral Fund

ACTUARIAL BALANCE EXPRESSED AS A  
PERCENTAGE OF COVERED PAYROLL  
 (Census as of June 30, 1973)

	<u>Residual Benefit</u>	<u>Integrated Plan</u>
Member Contribution Rate	4.000%	4.000%
Employer Contribution Rate	<u>5.000%</u>	<u>5.500%</u>
<u>Total</u>	<u>9.000%</u>	<u>9.500%</u>
Attained Age Normal Contribution Requirement	9.000%	
Entry Age Normal Level Contribution Rate		6.400%
Interest Requirement on Prior Level Requirements		2.405%
Expense Allowance	<u>          </u>	<u>0.168%</u>
Total Level Requirement	<u>9.000%</u>	<u>8.973%</u>
<u>Actuarial Balance Contribution Rate</u> <u>Less Level Requirement</u>	<u>0.000%</u>	<u>0.527%*</u>

\*If the excess were applied to the Prior Entry Age Normal Level Contribution Requirement Accumulated to Date, it would amortize such balance over approximately 36 years.

Public Employees Retirement Association

Police and Fire Fund

STATEMENT OF FINANCIAL CONDITION AND  
STATUS OF FUNDING  
AS OF JUNE 30, 1973

This section is designed to show the financial condition of the retirement system by comparing the assets on hand to the value of the benefits earned to date; to derive the unfunded past service obligation; and to show the trend of the ratio of assets to the funding objective, i.e., the present value of benefits earned to date.

Public Employees Retirement AssociationPolice and Fire FundSTATEMENT OF FINANCIAL CONDITION  
(Year Ended - June 30, 1973)ASSETS

Cash and Investments (Net)	\$38,959,178
Benefits Earned to Date Remaining to be Financed by Members and Employers	<u>12,874,362</u>
<u>Total</u>	<u>\$51,833,540</u>

LIABILITIES

Benefits Payable to Retired Members and Their Beneficiaries	\$ 8,638,010
Deferred Vested Benefits Payable to Inactive Members	242,864
Benefits Earned to Date by Active Members	<u>42,952,666</u>
<u>Total</u>	<u>\$51,833,540</u>

Public Employees Retirement AssociationPolice and Fire FundANALYSIS OF FUNDED STATUS  
(Year Ended - June 30, 1973)

	<u>Assets</u>	<u>Obligation</u>	<u>Unfunded Obligation</u>
Retired Members and Beneficiaries	\$ 8,638,010	\$ 8,638,010	\$ -0-
Deferred Vested Inactive Members	242,864	242,864	-0-
Active Members	<u>30,078,304</u>	<u>42,952,666</u>	<u>12,874,362</u>
<u>Total</u>	<u>\$38,959,178</u>	<u>\$51,833,540</u>	<u>\$12,874,362</u>
Ratio of Reserves to Liabilities	<u>75.2%</u>		

Public Employees Retirement Association

Police and Fire Fund

ACTUARIAL BASIS FOR DETERMINATION OF  
THE ENTRY AGE NORMAL LEVEL FINANCING  
REQUIREMENT (AS A PERCENTAGE OF PAYROLL)  
OF THE PROGRAM

This section is designed to illustrate the adequacy of the Employer/Member contribution rate by comparing it to the level actuarial requirement, expressed as a percentage of payroll.

Public Employees Retirement AssociationPolice and Fire FundACTUARIAL BALANCE SHEET  
(Year Ended - June 30, 1973)RESOURCES

Cash and Investments (Net)	\$ 38,959,178
Present Value of All Remaining Benefits to be Funded by Future Contributions	<u>71,205,064</u>
<u>Total</u>	<u>\$110,164,242</u>

LIABILITIES AND RESERVE

Benefits Payable to Retired Members and Their Beneficiaries	\$ 8,638,010
Deferred Vested Benefits Payable to Inactive Members	242,864
Active Members	<u>101,283,368</u>
<u>Total</u>	<u>\$110,164,242</u>

Public Employees Retirement AssociationPolice and Fire FundANALYSIS OF ACTUARIAL OBLIGATION(Census as of June 30, 1973)Retired Members

Service Retirement (Payable from Minnesota Adjustable Fixed Benefit Fund)	\$ 6,795,361	
Disability	145,539	
Survivor	1,205,575	
Reserve for Future Old Law Survivors	<u>491,535</u>	\$ 8,638,010

Deferred Vested Benefits

242,864

Active Members

Retirement	\$63,373,420	
Disability	20,550,545	
Survivor	8,643,827	
Vested - Retirement	6,693,125	
- Refund	<u>2,022,451</u>	<u>101,283,368</u>

Total Obligation\$110,164,242



Public Employees Retirement AssociationPolice and Fire FundDETERMINATION OF THE PRIOR ENTRY AGE  
NORMAL CONTRIBUTION REQUIREMENTS  
(Census as of June 30, 1973)

Total Obligation	\$110,164,242
Net Assets on Hand	<u>38,959,178</u>
Obligation to be Funded in the Future	\$ 71,205,064
Present Value of Future Entry Age Normal Level Contribution Requirements	<u>58,450,533</u>
Prior Entry Age Normal Level Contribution Requirements Accumulated to Date	<u>\$ 12,754,531</u>

Public Employees Retirement Association

Police and Fire Fund

INTEREST REQUIREMENT ON THE  
PRIOR ENTRY AGE NORMAL REQUIREMENTS  
(Census as of June 30, 1973)

Prior Entry Age Normal Level Contribution Requirements Accumulated to Date	\$12,754,531
Interest Requirement on Accumulated Net Prior Requirement	637,727
Considered Payroll	30,192,486
Interest Requirement as Percentage of Considered Payroll	<u>2.122%</u>

Public Employees Retirement Association

Police and Fire Fund

ENTRY AGE NORMAL LEVEL CONTRIBUTION REQUIREMENTS  
(Census as of June 30, 1973)

Present Value of Future Entry Age Normal Level Contribution Requirements	\$ 58,450,533
Present Value of Future Payroll of Current Members	363,707,200
Entry Age Normal Level Contribution Rate at Beginning of the Year *	<u>16.071%</u>
Entry Age Normal Level Contribution Rate Adjusted for Mid-Year Receipt	<u>16.473%</u>

\* Future Requirements ÷ Future Payroll

Public Employees Retirement AssociationPolice and Fire FundACTUARIAL BALANCE EXPRESSED AS A  
PERCENTAGE OF COVERED PAYROLL  
(Census as of June 30, 1973)

Member Contribution Rate	8.000%
Employer Contribution Rate	<u>12.000%</u>
<u>Total</u>	<u>20.000%</u>
Entry Age Normal Level Contribution Rate	16.473%
Interest Requirement on Prior Level Requirement	2.122%
Allowance for Expenses	<u>0.107%</u>
Total Level Requirement	<u>18.702%</u>
Actuarial Balance Contribution <u>Rate Less Level Requirement*</u>	<u>1.298%</u>

\* If the excess were applied to the Prior Entry Age Normal Level Contribution Requirement accumulated to date, it would amortize such balance over approximately 20 years.

Public Employees Retirement Association

General Fund

FINANCIAL STATISTICS  
AND  
ACTUARIAL ASSUMPTIONS

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Public Employees Retirement AssociationGeneral FundFINANCIAL BALANCE SHEET  
(Year Commencing July 1, 1973)ASSETS

Cash - On Hand	\$ 50.00		
On Deposit and In Transit	<u>718,169.99</u>	\$ 718,219.99	
Minnesota Adjustable Fixed Benefit Fund		104,014,247.51	
Deferred Yield Adjustment		<u>1,167,373.17</u>	
Accounts Receivable:			
M.S. 1971, Sec. 353.36,			
Subd. 2, 8, and 9	\$ 305,031.90		
Employer Contributions	193,582.73		
Interest	2,258,703.46		
Dividends	283,817.36		
From Police and Fire Fund	38,577.90		
Social Security Vote	231.43		
From MSRS and TRA	19,768.04		
Other	<u>2,563.38</u>	<u>3,102,276.20</u>	\$109,002,116.87
Current Liabilities:			
Accounts Payable	\$ 88,186.56		
Penalties Refundable	4,266.75		
Donations Suspense	601,551.45		
Members Contribution - Suspense	166.37		
Omitted Deductions - Suspense	<u>7,080.96</u>		<u>701,252.09</u>
<u>Net Current Assets</u>			<u>\$108,300,864.78</u>

INVESTMENTS

Bonds			
U.S. Government	\$ 10,273,000.00		
Municipal	6,652,000.00		
Corporate	97,892,993.16		
Canadian Government Insured	18,476,998.22		
Common Stocks	<u>107,633,387.72</u>	\$240,928,379.10	
Miscellaneous			
Office Equipment (Less Depreciation)	\$ 25,497.71		
Other	<u>4,956.75</u>	<u>30,454.46</u>	<u>\$240,958,833.56</u>
<u>Total Assets</u>			<u>\$349,259,698.34</u>

Members Accumulated Contributions - \$105,981,441.23

Public Employees Retirement AssociationGeneral FundSOURCES AND USES OF FUNDS

(July 1, 1972 - June 30, 1973)

<u>Sources</u>		<u>Uses</u>	
<u>Employee Contributions</u>	\$ 17,652,706.14	<u>Refunds</u>	
<u>Employer Contributions</u>	25,601,022.43	Employee Contributions	\$ 4,541,905.93
<u>Various Accounts Receivable</u>	70,762.70	Employer Contributions	31,478.76
<u>Investment Income</u>	10,866,696.60	<u>Penalties Refunded</u>	297.37
<u>Minnesota Adjustable Fixed Benefit Fund</u>	1,240,449.87	<u>Donations Refunded</u>	14,452.16
<u>Transfers from Police and Fire Fund</u>	20,912.86	<u>Benefits Paid</u>	
<u>Investment Sales and Redemptions</u>		Retirement	10,422,266.35
Bonds	104,363,441.10	Survivor	2,622,231.20
Stocks	5,979,777.65	Disability	348,268.28
<u>Cancelled Warrants</u>	81,305.19	<u>Direct Expense</u>	779,765.98
<u>Interest on Omitted Deductions, Back Payments and Refunds Repaid</u>	289,823.35	<u>Investment Purchases</u>	
<u>Miscellaneous Income</u>	3,425.22	Bonds	120,721,355.87
	<u>\$166,170,323.11</u>	Stocks	22,567,509.96
Cash Balance, June 30, 1973	\$ 718,169.99	<u>Payments to Minnesota Adjustable Fixed Benefit Fund</u>	3,727,691.31
Cash Balance, June 30, 1972	<u>386,696.51</u>	<u>Interest Paid on Refunds</u>	61,626.46
Increase in Cash Balance	\$ 331,473.48	<u>Increase in Cash Accounts</u>	<u>331,473.48</u>
			<u>\$166,170,323.11</u>

Public Employees Retirement AssociationGeneral FundACCOUNTING STATEMENT OF INCOME AND EXPENSES  
(July 1, 1972 to June 30, 1973)Income

Employer Contributions	\$25,804,926.11	
Employee Contributions	17,808,594.85	
Investment Income	11,298,703.50	
Other Income	307,513.98	
Minnesota Adjustable Fixed Benefit Fund Income	<u>11,779,940.82</u>	
Total Income		\$66,999,679.26

Expenses

Benefits	\$13,313,749.54	
Refund of Contributions	4,598,873.45	
Transfer to Police and Fire Fund	53,538.79	
Expense - General	<u>770,053.85</u>	
Total Expenses		<u>18,736,215.63</u>

<u>Excess of Income over Expenses</u>	<u>\$48,263,463.63</u>
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Public Employees Retirement AssociationGeneral FundRECONCILIATION OF ASSET BALANCES

(June 30, 1973)

Asset Balance, July 1, 1972			\$300,996,234.71
Add:			
Employer Contributions		\$25,399,601.83	
Employee Contributions		17,652,706.14	
Employee and Employer Contributions Transferred from Police and Fire Fund		6,216.09	
Minnesota Adjustable Fixed Benefit Fund Income		11,779,940.82	
Investment Earnings		11,079,301.39	
Gain on Sales of Stock		219,402.11	
Unit Matching Contributions		405,324.28	
Adjustments to MAFB, Members Accounts, and Benefits Reserve		1,828,497.04	
Other Income		<u>307,513.98</u>	
Total Additions			<u>68,678,503.68</u>
			\$369,674,738.39
Deduct:			
Benefits Paid			
Retirement	\$10,373,285.65		
Survivor	2,601,748.33		
Disability	<u>338,715.56</u>	\$13,313,749.54	
Refunds		4,537,246.99	
Transfers to Police and Fire Fund		59,754.88	
Interest Paid on Refunds		61,626.46	
Adjustments to Members Active Accounts		1,672,608.33	
Administrative Expenses		<u>770,053.85</u>	
Total Deductions			<u>20,415,040.05</u>
			\$349,259,698.34
Current Liabilities and Accounts Payable			<u>701,252.09</u>
<u>Asset Balance, June 30, 1973</u>			<u>\$349,960,950.43</u>

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:	3½% per year

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

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

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

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

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

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

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

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

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

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

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

Public Employees Retirement AssociationGeneral FundAll EmployeesEARNINGS PROGRESSION

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.2127	45	.5026
21	.2201	46	.5202
22	.2278	47	.5384
23	.2358	48	.5572
24	.2440	49	.5767
25	.2526	50	.5969
26	.2614	51	.6178
27	.2706	52	.6394
28	.2800	53	.6618
29	.2898	54	.6849
30	.3000	55	.7089
31	.3105	56	.7337
32	.3213	57	.7594
33	.3326	58	.7860
34	.3442	59	.8135
35	.3563	60	.8420
36	.3687	61	.8714
37	.3817	62	.9019
38	.3950	63	.9335
39	.4088	64	.9662
40	.4231	65	1.0000
41	.4380		
42	.4533		
43	.4692		
44	.4856		



Public Employees Retirement Association

General Fund

EMPLOYEE STATISTICS  
AND  
SUMMARY OF PLAN

		<u>Page No.</u>
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Exhibit 15	Reconciliation of Annuitants	34
Exhibit 16	Summary of Plan - Basic Members	35-38
Exhibit 17	Summary of Plan - Coordinated Members	39-41

Public Employees Retirement AssociationGeneral FundRECONCILIATION OF ACTIVE MEMBERS

As of July 1, 1972	70,873
New Entrants	13,519
Reinstated	<u>2,837</u>
Total	<u>87,229</u>
Separations:	
a. With Refund of Contributions	
(i) Death	230
(ii) Withdrawal	12,955
b. With Deferred Annuity	77
c. With Disability Annuity	103
d. With Normal Retirement Annuity	674
e. With Survivor Annuity	193
f. With Disability Survivor Annuity	<u>16</u>
Total	<u>14,248</u>
Active as of July 1, 1973	<u>72,981</u>

Public Employees Retirement AssociationGeneral FundRECONCILIATION OF ANNUITANTSNormal Retirement Annuitants

As of July 1, 1972	6,379
Additions During Year	751
Deletions During Year	<u>-294</u>
<u>Total as of July 1, 1973</u>	<u>6,836</u>

Disability Annuitants

As of July 1, 1972	246
Additions During Year	103
Deletions During Year	<u>-49</u>
<u>Total as of July 1, 1973</u>	<u>300</u>

Survivor Annuitants

(a) Spouse Only	
As of July 1, 1972	2,412
Additions During Year	178
Deletions During Year	<u>-112</u>
<u>Total as of July 1, 1973</u>	<u>2,478</u>

(b) Survivors with Children	
As of July 1, 1972	494
Additions During Year	29
Deletions During Year	<u>-1</u>
<u>Total as of July 1, 1973</u>	<u>522</u>

Deferred Vested Members

As of July 1, 1972	746
Additions During Year	77
Deletions During Year	<u>-22</u>
<u>Total as of July 1, 1973</u>	<u>801</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Basic Members

SUMMARY OF PLAN  
(Effective July 1, 1973)

1. Name

Public Employees Retirement Association.

2. Type of Plan

Self-insured, managed by a 13-member Board of Trustees, ten elected and three appointed by three employer groups.

3. Employer Included

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

4. Employees Included

All full time 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 or layoffs.

6. Considered Salary

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

7. Employee Contributions

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

8. Employer Contributions

Amount equal to the Employee Contributions plus 2 $\frac{1}{2}$ % 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 prior to date of separation from public service.

Annuity equal to:

- (a) 2% of "Average Salary" for each of the first 10 years of allowable service plus
- (b)  $2\frac{1}{2}\%$  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.

Annual Annuity determined as for Normal Retirement considering allowable service and salary to actual retirement and reduced by  $\frac{1}{2}$  of 1% for each month between actual retirement and attainment of age 65 if service is less than 30 years, and between actual retirement and age 62 if service is 30 or more years.

#### 12. Special Early Retirement Annuity

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

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

#### 13. 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 5 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.

#### 14. 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 \$400 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, the excess (if any) of his accumulated contributions without interest, minus annuity payments, shall be paid to his designated beneficiary.

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  $3\frac{1}{2}\%$  per annum compounded annually.

#### 15. 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 at  $3\frac{1}{2}\%$  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.

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  $3\frac{1}{2}\%$  compounded annually. (Such election is in lieu of any other benefits under the Plan.)

#### 16. Increase for Retired Annuitants, Survivors and Disabilitants who were receiving payments on June 30, 1973

(1) All retired annuitants drawing annuities as of June 30, 1973 shall receive an increase of 25%, payable as follows:

(a) Those included in the Minnesota Adjustable Fixed Benefit Fund shall have their annuities increased effective July 1, 1973, by the same ratio as the actuarially computed reserves at  $3\frac{1}{2}\%$  interest bears to the actuarially computed reserves at 5% interest. (This increase amounted to 9.72%.)

(b) Said annuitants shall receive the remainder of the 25% increase, or 15.28%, effective January 1, 1974.

(2) All survivors and disabilitants who were receiving benefits on June 30, 1973 shall receive an increase of 25% effective January 1, 1974.

17. Optional Annuities

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

18. Expenses

Paid by Association from retirement fund.

19. Actuarial Method

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

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Coordinated Members

SUMMARY OF PLAN  
(Effective July 1, 1973)

1. Name

Public Employees Retirement Association.

2. Type of Plan

Self-insured, managed by a 13-member Board of Trustees, ten elected and three appointed by three employer groups.

3. Employer Included

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

4. Employees Included

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

5. Allowable Service

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

6. Considered Salary

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

7. Employee Contributions

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

8. Employer Contributions

Amount equal to the Employee Contributions plus  $1\frac{1}{2}\%$  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 prior to date of separation from public service.

Annuity equal to:

- (a) 1% of "Average Salary" for each of the first 10 years of allowable service plus
- (b)  $1\frac{1}{2}\%$  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.

Annual Annuity determined as for Normal Retirement considering allowable service and salary to actual retirement and reduced by  $\frac{1}{2}$  of 1% for each month between actual retirement and attainment of age 65 if service is less than 30 years, and between actual retirement and age 62 if service is 30 or more years.

#### 12. Special Early Retirement Annuity

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

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

#### 13. 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 5 years of allowable service.

Annual Benefit payable to age 65 determined as for Normal Retirement, considering allowable service and salary to date of disablement.

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.

#### 14. Death Benefit

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

In the event of death of a retired annuitant, the excess (if any) of his accumulated contributions without interest, minus annuity payments, shall be paid to his designated beneficiary.

#### 15. 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 at  $3\frac{1}{2}\%$ , 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.

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  $3\frac{1}{2}\%$  compounded annually. (Such election is in lieu of any other benefits under the Plan.)

#### 16. Increase for Retired Annuitants and Disabilitants who were receiving payments on June 30, 1973

(1) All retired annuitants drawing annuities as of June 30, 1973 shall receive an increase of 25%, payable as follows:

- (a) Those included in the Minnesota Adjustable Fixed Benefit Fund shall have their annuities increased effective July 1, 1973, by the same ratio as the actuarially computed reserves at  $3\frac{1}{2}\%$  interest bears to the actuarially computed reserves at 5% interest. (This increase amounted to 9.72%.)
- (b) Said Annuitants shall receive the remainder of the 25% increase, or 15.28%, effective January 1, 1974.

(2) All disabilitants who were receiving benefits on June 30, 1973, shall receive an increase of 25% effective January 1, 1974.

#### 17. Optional Annuities

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

#### 18. Expenses

Paid by Association from retirement fund.

#### 19. Actuarial Method

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

Public Employees Retirement Association

Police and Fire Fund

FINANCIAL STATISTICS  
AND  
ACTUARIAL ASSUMPTIONS

	<u>Page No.</u>
Exhibit 9	Financial Balance Sheet
Exhibit 10	Sources and Uses of Funds
Exhibit 11	Accounting Statement of Income and Expenses
Exhibit 12	Reconciliation of Asset Balances
Exhibit 13	Actuarial Assumptions
Table 1	Mortality Rates - All Employees
Table 2	Disability Rates - All Employees
Table 3	Separation Rates - All Employees
Table 4	Earnings Progression - All Employees

Public Employees Retirement AssociationPolice and Fire FundFINANCIAL BALANCE SHEET  
(Year Commencing July 1, 1973)ASSETS

Cash - On Hand	\$ -		
On Deposit and in Transit	70,309.60	\$ 70,309.60	
Minnesota Adjustable Fixed Benefit Fund		6,795,360.84	
Deferred Yield Adjustment		200,128.69	
Accounts Receivable			
M.S. 1971, Section 353.36	\$ 6,686.98		
M.S. 1971, Section 353.36, Subd. 9	1,001.80		
Employer Contributions	4,549.15		
Interest	288,718.97		
Dividends	42,190.64		
From Regular Fund	59,799.96		
Others	1,108.37	404,055.87	\$ 7,469,855.00
Less Current Liabilities			<u>88,599.78</u>
Net Current Assets			<u>\$ 7,381,255.22</u>

INVESTMENTS

Bonds			
U. S. Government	\$ 1,751,000.00		
Municipal	-		
Corporate	12,835,782.68		
Canadian Government Insured	2,604,242.29		
Stocks			
Common	14,386,897.59		
Preferred	-		
Prepaid Interest	-		<u>31,577,922.56</u>
<u>Total Assets</u>			<u>\$38,959,177.78</u>

Members accumulated contributions \$9,250,907.99.

Public Employees Retirement AssociationPolice and Fire FundSOURCES AND USES OF FUNDS  
(July 1, 1972 - June 30, 1973)

<u>Sources</u>		<u>Uses</u>	
Employee Contributions	\$ 2,035,728.16	Refunds	
Employer Contributions	3,497,718.70	Employee Contributions	\$ 340,106.55
Minnesota Adjustable Fixed Benefit Fund	11,342.14	Employer Contributions	12,628.12
Police and Fire State Aid	576,861.00	Payments to Minnesota Adjustable Fixed Benefit Fund	875,602.54
Various Accounts Receivables	1,316.32	Annuities Paid	
Investment Income	1,536,295.85	Retirement	523,002.80
Investment Sales and Receipts		Survivor	144,594.35
Bonds	11,094,397.65	Disability	7,675.65
Stocks	423,472.63	Investment Purchases	
Cancelled Warrants	4,017.55	Bonds	13,283,443.61
Interest on Omitted Deductions, Back Payments and Repaid Refunds	14,204.67	Stocks	4,006,145.00
Supplemental Payments Receivable	33.49	Transfer to Regular Fund	20,912.86
Decrease in Cash Balance	22,833.42	Interest Paid on Refunds	2,939.80
	\$19,218,221.58	Direct Expense	1,170.30
Cash Balance, 6/30/73	70,309.60		<u>\$19,218,221.58</u>
Total (Statements of Receipts and Disbursements)	<u>\$19,288,531.18</u>		

Public Employees Retirement AssociationPolice and Fire FundACCOUNTING STATEMENT OF INCOME AND EXPENSES  
(July 1, 1972 to June 30, 1973)Income

Employer Contributions	\$3,490,898.30	
Employee Contributions	2,076,869.56	
Special Income from Police State Aid	576,861.00	
Investment Income	1,581,023.21	
Other Income	16,168.88	
Transfer from General Fund	53,538.79	
Increase in Reserve Account	179,952.89	
Minnesota Adjustable Fixed Benefit Fund Income	<u>723,906.56</u>	
Total Income		\$8,519,266.30

Expenses

Benefits	\$ 675,055.11	
Refund of Contributions	343,008.42	
Expense - General	<u>32,360.29</u>	
Total Expenses		<u>1,050,423.82</u>

<u>Excess of Income over Expenses</u>	<u>\$7,468,842.48</u>
---------------------------------------	-----------------------

Public Employees Retirement AssociationPolice and Fire FundRECONCILIATION OF ASSET BALANCES

(June 30, 1973)

Asset Balance - July 1, 1972			\$31,490,335.30
Add:			
Employer Contributions		\$3,470,919.63	
Employee Contributions		2,035,728.16	
Transfers from Regular Fund		59,754.88	
Investment Earnings		1,457,682.69	
Minnesota Adjustable Fixed			
Benefit Fund Income		723,906.56	
Gain on Sale of Stocks and Bonds		123,340.52	
Police State Aid		576,861.00	
Adjustment to Benefit Reserves		171,617.28	
Other Income		36,147.55	
Total Additions			<u>8,655,958.27</u>
			\$40,146,293.57
Deduct:			
Benefits Paid			
Retirement	\$525,690.94		
Survivor	142,614.98		
Disability	<u>9,749.19</u>	\$ 675,055.11	
Refunds		340,068.62	
Transfers to Regular Fund		6,216.09	
Interest Paid on Refunds		2,939.80	
Adjustments to Minnesota Adjustable			
Fixed Benefit Fund		6,373.72	
Adjustments to Members' Active Accounts		124,102.16	
Administrative Expenses		<u>32,360.29</u>	
Total Deductions			<u>1,187,115.79</u>
			\$38,959,177.78
Current Liabilities and Accounts Payable			<u>88,599.78</u>
<u>Asset Balance, June 30, 1973</u>			<u>\$39,047,777.56</u>

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:	62
Disability:	See Following Table
Turnover:	See Following Table
Salary Scale:	3½% per year

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

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



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

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.517	45	3.002
21	.537	46	3.409
22	.558	47	3.856
23	.581	48	4.344
24	.607	49	4.869
25	.636	50	5.429
26	.667	51	6.027
27	.703	52	6.656
28	.742	53	7.321
29	.784	54	8.019
30	.831	55	8.751
31	.884	56	9.514
32	.941	57	10.312
33	1.005	58	11.154
34	1.074	59	12.057
35	1.152	60	13.043
36	1.237	61	14.143
37	1.331	62	15.390
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	60	41.65
36	3.90	61	44.50
37	4.30		
38	4.75		
39	5.25		
40	5.90		
41	6.60		
42	7.40		
43	8.30		
44	9.25		

Public Employees' Retirement AssociationPolice and Fire FundAll EmployeesSEPARATION RATES(Per 1,000 Employees)

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

Public Employees Retirement Association

Police and Fire Fund

All Employees

EARNINGS PROGRESSION

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	.2358	45	.5572
21	.2440	46	.5767
22	.2526	47	.5969
23	.2614	48	.6178
24	.2704	49	.6394
25	.2800	50	.6618
26	.2898	51	.6849
27	.3000	52	.7089
28	.3015	53	.7337
29	.3213	54	.7594
30	.3326	55	.7860
31	.3442	56	.8135
32	.3563	57	.8420
33	.3687	58	.8714
34	.3817	59	.9019
35	.3950	60	.9335
36	.4088	61	.9662
37	.4231	62	1.0000
38	.4380		
39	.4533		
40	.4692		
41	.4856		
42	.5026		
43	.5202		
44	.5384		

Public Employees Retirement Association

Police and Fire Fund

EMPLOYEE STATISTICS  
AND  
SUMMARY OF PLAN

Exhibit 14	Reconciliation of Active Members
Exhibit 15	Reconciliation of Annuitants
Exhibit 16	Summary of Plan

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Public Employees Retirement AssociationPolice and Fire FundRECONCILIATION OF ACTIVE MEMBERS

As of July 1, 1972	3,027
New Entrants	373
Reinstated	<u>59</u>
<u>Total</u>	<u>3,459</u>
Separations:	
(a) With Refund of Contributions	
(i) Death	22
(ii) Withdrawal	<u>274</u>
(b) With Deferred Annuity	2
(c) With Disability Annuity	4
(d) With Normal Retirement Annuity	43
(e) With Survivor Annuity	<u>9</u>
<u>Total</u>	<u>354</u>
<u>Active as of July 1, 1973</u>	<u>3,105</u>

Public Employees Retirement AssociationPolice and Fire FundRECONCILIATION OF ANNUITANTSNormal Retirement Annuitants

As of July 1, 1972	216
Additions During Year	45
Deletions During Year	<u>-10</u>
<u>Total as of July 1, 1973</u>	<u>251</u>

Disability Annuitants

As of July 1, 1972	5
Additions During Year	4
Deletions During Year	<u>-3</u>
<u>Total as of July 1, 1973</u>	<u>6</u>

Survivor Annuitants

(a) Spouse Only	
As of July 1, 1972	57
Additions During Year	9
Deletions During Year	<u>-1</u>
<u>Total as of July 1, 1973</u>	<u>65</u>
(b) Survivors with Children	
As of July 1, 1972	48
Additions During Year	4
Deletions During Year	<u>-</u>
<u>Total as of July 1, 1973</u>	<u>52</u>

Deferred Annuitants

As of July 1, 1972	11
Additions During Year	2
Deletions During Year	<u>-</u>
<u>Total as of July 1, 1973</u>	<u>13</u>

PUBLIC EMPLOYEES POLICE AND FIRE FUND

SUMMARY OF PLAN  
(Effective July 1, 1973)

1. Name

Public Employees Police and Fire Fund.

2. Type of Plan

Self-insured, managed by a 13-member Board of Trustees, ten elected and three appointed by three employer groups.

3. Employer Included

Any county, city, village, 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 prior to date of separation from public service.



Annuity equal to:

- (a)  $2\frac{1}{2}\%$  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. Disability Benefit

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

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

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

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

#### 12. 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 \$400 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, the excess (if any) of his accumulated contributions without interest, minus annuity payments, shall be paid to his designated beneficiary.

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  $3\frac{1}{2}\%$  per annum compounded annually.

#### 13. 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 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 at  $3\frac{1}{2}\%$ , 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.

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  $3\frac{1}{2}\%$  compounded annually. (Such election is in lieu of any other benefits under the Plan.)

14. Increase for Retired Annuitants, Survivors and Disabilitants who were receiving payments on June 30, 1973

(1) All retired annuitants drawing annuities as of June 30, 1973 shall receive an increase of 25%, payable as follows:

- (a) Those included in the Minnesota Adjustable Fixed Benefit Fund shall have their annuities increased effective July 1, 1973, by the same ratio as the actuarially computed reserves at  $3\frac{1}{2}\%$  interest bears to the actuarially computed reserves at 5% interest. (This increase amounted to 9.72%.)
- (b) Said annuitants shall receive the remainder of the 25% increase, or 15.28%, effective January 1, 1974.

(2) All survivors and disabilitants who were receiving benefits on June 30, 1973 shall receive an increase of 25% effective January 1, 1974.

15. Optional Annuities

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

16. Expenses

Paid by Association from retirement fund.

17. Actuarial Method

For purpose 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.

PERA VALUATION AS OF JUNE 30, 1973

(General Fund)

The purpose of this memorandum is to discuss the Supplemental Valuation Report of the Public Employees' Retirement Association, dated November 9, 1973, which was submitted to the Commission in accordance with Chapter 249 of Minnesota Laws 1967 and Chapter 289 of Minnesota Laws 1969. The valuation was made using the entry age normal cost method and assuming 5% interest. The 1973 and 1972 valuation reports were completed by Arthur Stedry Hansen, Consulting Actuaries. The memorandum will also discuss the original Valuation Report dated October 9, 1973.

This memorandum contains the following:

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

Separate discussions will be given of the Basic Group and the Coordinated Group as required by Section 355.301.

A. BASIC GROUP

1. Statistical and Valuation Data

Results of the valuation reports as of June 30, 1972 and June 30, 1973 are shown for comparative purposes. Figures are rounded where necessary for simplicity of presentation.

	As of <u>June 30, 1972</u>	As of <u>June 30, 1973</u>
(1) <u>Membership</u>		
Active Members	25, 829	23, 881
Retired Members	5, 663 *	5, 935
Disabled Members	197 *	232
Survivors of Deceased Members	3, 532 *	3, 597
Deferred Annuitants	709 *	752

\* Corrected on 1973 Report.

	As of <u>June 30, 1972</u>	As of <u>June 30, 1973</u>
(2) <u>Payroll and Annuities Payable</u>	(Millions of Dollars)	
Covered Payroll	\$ 189.2	\$ 184.1
Annuities Payable (annual)	11.9	13.3
(3) <u>Valuation Balance Sheet</u>	(Millions of Dollars)	
Accrued Liability	\$ 348.8	\$ 541.1
Assets	<u>255.5 *</u>	<u>286.8</u>
Unfunded Accrued Liability (Deficit)	\$ 93.3	\$ 254.3
Funding Ratio (Assets/Accrued Liability)	73.3% *	53.0%
* Corrected on 1973 Report.		
(4) <u>Normal Cost and Funding Costs</u>		
Normal Cost	11.78%	12.11%
Expenses	<u>0.20</u>	<u>.17</u>
Normal Cost Plus Expenses	11.98%	12.28%
Normal Cost Plus Expenses	11.98%	12.28%
Interest on Deficit	<u>1.71</u>	<u>6.91</u>
Minimum Contribution	13.69%	19.19%
Normal Cost Plus Expenses	11.98%	12.28%
Amortization by 1997	<u>2.96</u>	<u>10.01</u>
Required Contribution	14.94%	22.29%
(5) <u>Statutory Contributions</u>		
Employee	6.0%	8.0%
Employer Regular	6.0	8.0
Employer Additional	<u>2.5</u>	<u>2.5</u>
Total Contributions	14.5%	18.5%

## 2. Discussion of Valuation Results

The above results show a modest increase in the normal cost but a substantial increase in the amortization contribution which means that a large part of the cost of the improvement in benefits has gone into the deficit. The following chart also brings out this fact; it shows the ratio of the Obligation for Service Rendered to Date (PS) to the Total Present Value of Benefits (PV) and the similar ratio involving the Value of Benefits to be Earned in the Future (FS):

	<u>PS/PV</u>	<u>FS/PV</u>
1972	66.1%	33.9%
1973	75.5	24.6

Since this Basic Group is declining, a shift in this direction would be expected even if no change in benefits had been made. In addition, the change in the benefit formula produces a faster accrual of benefit percentages as shown by the following chart:

<u>Years of Service</u>	<u>Accrued %</u>		<u>Years of Service</u>	<u>Accrued %</u>	
	<u>Old</u>	<u>New</u>		<u>Old</u>	<u>New</u>
10	10%	20%	30	55%	70%
15	20	32.5	35	70	82.5
20	30	45	40	85	95
25	42.5	57.5			

It should be noted that the statutory regular contributions which total 16% exceed the normal cost plus expenses of 12.28%. On the other hand, the employer additional contribution of 2.5% falls far short of the required amortization contribution of 10.01%. This deficiency is not covered by the excess in the regular contributions, and the situation is worse than indicated by the figures themselves since the 2.5% will be applied to a declining payroll. This point will be discussed further at a later point.

The unfunded accrued liability increased by \$161,054,357. The PERA Actuary shows the following items to trace the change in the deficit.

Increases:

Change in Benefits	\$ 181,042,059	
Salary Scale and Turnover Loss	<u>21,256,240</u>	
Total Increases		\$ 202,298,299

Decreases:

Change in Assumed Interest Rate	\$ 31,290,599	
Amortization Contribution	3,746,566	
Excess Interest	5,922,180	
Other Actuarial Gains	<u>284,597</u>	
Total Decreases		<u>41,243,942</u>

Net Increase		\$ 161,054,357
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## B. COORDINATED GROUP

### 1. Statistical and Valuation Data

	<u>As of</u> <u>June 30, 1972</u>	<u>As of</u> <u>June 30, 1973</u>
(1) <u>Membership</u>		
Active Members	45,044	49,100
Retired Members	716 *	901
Disabled Members	39	68
Survivors of Deceased Members	2 *	2
Deferred Annuitants	37 *	49
(2) <u>Payroll and Annuities Payable</u>	(Millions of Dollars)	
Covered Payroll	\$ 242.0	\$ 275.1
Annuities Payable (annual)	0.7	0.9
(3) <u>Valuation Balance Sheet</u>	(Millions of Dollars)	
Accrued Liability	\$ 62.6	\$ 69.9
Assets	45.5 *	62.5
Unfunded Accrued Liability (Deficit)	\$ 17.1	\$ 7.4
Funding Ratio (Assets/Accrued Liability)	72.6% *	89.4%
(4) <u>Normal Cost and Funding Costs</u>		
Normal Cost	5.12%	6.31%
Expenses	0.20	0.17
Normal Cost Plus Expenses	5.32%	6.48%
Normal Cost Plus Expenses	5.32%	6.48%
Interest on Deficit	0.25	0.14
Minimum Contribution	5.57%	6.62%
Normal Cost Plus Expenses	5.32%	6.48%
Amortization by 1997	0.43	0.20
Required Contribution	5.75%	6.68%
(5) <u>Statutory Contributions</u>		
Employee	3.0%	4.0%
Employer Regular	3.0	4.0
Employer Additional	1.5	1.5
Total Contributions	7.5%	9.5%

\* Corrected on 1973 Report.

## 2. Discussion of Valuation Results

The results for the Coordinated Group present a picture just the reverse of those for the Basic Group. The normal cost increased from 5.12% to 6.31%, an increase of almost one-quarter. On the other hand, the Report shows a decrease in the deficit. The smaller deficit plus a larger payroll results in an amortization contribution of 0.20% of payroll compared with 0.43% in 1972.

During the year, 13,494 new employees entered the fund and 11,865 ceased to participate. The new employees do not create any accrued liability, and accrued liability is released by the terminations. These two factors together produce a decrease in the deficit. On the other hand, the change to a benefit based upon final salary plus the faster accrual of benefit credits resulting from the change in formula exert an upward push on the deficit. The net result has been a decrease which is analyzed in the following paragraph.

The unfunded accrued liability for the Coordinated Group decreased by \$9,691,329 during the year. The PERA Actuary shows the following breakdown:

### Decreases:

Change in Assumed Interest Rate	\$ 9,439,349	
Amortization Contribution	5,752,288	
Excess Interest	<u>1,178,515</u>	
Total Decreases		\$ 16,370,152

### Increases:

Change in Benefits	\$ 2,966,358	
Salary Scale Loss	3,097,165	
Other Actuarial Losses	<u>615,300</u>	
Total Increases		<u>6,678,823</u>

Net Decrease	\$ 9,691,329
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The \$2,966,358 increase from the Change in Benefits does seem to be rather small in view of the change to final salary along with the faster accrual of benefit percentages.

## C. CONSOLIDATED REPORT

Since the Basic Report shows a deficiency in financing and the Coordinated Report shows a surplus, the question arises as to whether the System as a whole is in balance. This question can be answered best by comparing the total requirement in dollars with the support in dollars.

	<u>Basic</u>	<u>Coordinated</u>	<u>Total</u>
Required Support			
Normal Cost plus Expense	\$ 22, 606, 858	\$ 17, 823, 318	\$ 40, 430, 176
Amortization	<u>18, 432, 412</u>	<u>539, 287</u>	<u>18, 971, 699</u>
Total	\$ 41, 039, 270	\$ 18, 362, 605	\$ 59, 401, 875
Statutory Contributions			
Employee	\$ 14, 727, 595	\$ 11, 002, 048	\$ 25, 729, 643
Employer Regular	<u>14, 727, 595</u>	<u>11, 002, 048</u>	<u>25, 729, 643</u>
	\$ 29, 455, 190	\$ 22, 004, 096	\$ 51, 459, 286
Employer Additional	<u>4, 602, 373</u>	<u>4, 125, 768</u>	<u>8, 728, 141</u>
Total	\$ 34, 057, 563	\$ 26, 129, 864	\$ 60, 187, 427

The total regular contribution in each case exceeds the normal cost by a good margin. On the other hand, the Employer Additional contribution for the Basic Group is only one-fourth of the amortization requirement for the group.

A previous Commission adopted the principle that each group should stand on its own feet so far as normal cost and regular contributions are concerned but that any portion of the Employer Additional Coordinated contribution not needed for Coordinated amortization could be applied toward Basic amortization. In accordance with this principle, \$3,586,481 of the Employer Additional Coordinated contribution (\$4,125,768 - \$539,287) may be used for Basic amortization. Although this increases the financing for the Basic deficit to \$8,188,854 (\$4,602,373 + \$3,586,481), this amount is still less than one-half of the Basic amortization requirement. Part of this deficiency is offset by the excess of Basic regular support over Basic normal cost, but the net result is still a deficiency of \$3,395,226 for the Basic Group. Another way of arriving at the same result follows:

Basic Required Support		\$ 41, 039, 270
Basic Statutory Contribution		<u>34, 057, 563</u>
Gross Deficiency		\$ 6, 981, 707
Employer Additional		
Coordinated Contribution	\$ 4, 125, 768	
Coordinated Amortization		
Requirement	<u>539, 287</u>	
Excess		<u>3, 586, 481</u>
Net Deficiency		\$ 3, 395, 226

#### D. CONSOLIDATED REPORT - ALTERNATIVE APPROACH

When the PERA Valuation Report was first submitted on October 9, 1973, it was based upon a partial consolidation of the financing of the benefits for the two groups. Furthermore, the Report did not contain a separate treatment of each of the two groups.

Although we are of the opinion that the consolidated approach used in the valuation has some merits, we pointed out that Section 355.301 still requires



separate valuations and requested that these be submitted. They have been discussed above.

Since we feel that the consolidated method has some merit, we will present a summary for review by the Commission. This approach is based on the reasoning that if coordination had not been made available, part of the contributions on behalf of new employees would have been available for the financing of improvements in benefits for older employees. With all new employees going into the Coordinated Group, this source of help in financing the costs for the older Basic employees has been cut off.

In this approach, the cost of a portion of the benefits of the Basic Group is combined with the cost of the benefits of the Coordinated Group. The portion is supposed to be the amount of benefit which the member would have if he were a Coordinated member. The financing of this combined cost is determined by the usual entry age normal cost method with amortization of the deficit by 1997.

The balance of the benefits for the Basic Group is financed over the average remaining service period of the members.

The support for the Basic Group is also divided with the consolidated portion equal to the same amount as that contributed for a Coordinated member and the remainder going toward the Basic Residue.

This approach produced the following results:

	<u>Consolidated</u>	<u>Basic Residue</u>
Present Value of Benefits	\$ 582, 736, 620	\$ 344, 087, 677
Assets	<u>132, 751, 023</u>	<u>216, 508, 675</u>
Amount to be Funded	\$ 449, 985, 597	\$ 127, 579, 002
Present Value of Normal Cost	<u>229, 133, 282</u>	
Deficit	\$ 220, 852, 315	

When the Present Value of Normal Cost and the Basic Residue Amount to be Funded are related to the proper Present Value of Future Payroll figures, ratios of 6.24% and 8.78%, respectively, were obtained. The Deficit of \$220, 852, 315 can be amortized by 1997 with an annual contribution of \$16, 005, 167 which is 3.49% of the total payroll. In summary, the picture would appear as follows:

	<u>Consolidated</u>	<u>Basic Residue</u>
Normal Cost	6.24%	8.78%
Expenses	<u>0.17</u>	
	6.41%	
Amortization	<u>3.49</u>	
	9.90%	
Employee	4.0%	4.0%
Employer Regular	4.0	4.0
Employer Additional	<u>1.5</u>	<u>1.0</u>
	9.5%	9.0%

Although the percentages in the above summary seem to indicate approximate balance, one must remember that the 0.4% deficiency in the Consolidated section is applied to the total payroll of \$459, 146, 137 whereas the 0.22% surplus in the Basic Residue section is applied to only the Basic payroll of \$184, 094, 937. In addition, even though the approach may have some merit, there remains some question about the reasonableness of the allocation of total Basic cost figures and assets between Consolidated and Basic Residue. The following chart displays this allocation:

	<u>Total Basic</u>	<u>Consolidated</u>	<u>Basic Residue</u>
Present Value of Benefits	\$ 717, 168, 286	\$ 373, 080, 609(52.02%)	\$ 344, 087, 677(47.98%)
Assets	<u>286, 796, 992</u>	<u>70, 288, 317(24.51%)</u>	<u>216, 508, 675(75.49%)</u>
Amount to be Funded	\$ 430, 371, 294	\$ 302, 792, 292(70.36%)	\$ 127, 579, 002(29.64%)

The allocation of 52% of the Present Value of Benefits appears without detailed analysis to be reasonable since the benefit credits for the first decade of service have the ratio 50% (1% vs. 2%) and those for later decades have the ratio 60% (1.5% vs. 2.5%). However, we question whether an allocation of 24.5% of the assets is reasonable.

In summary, the above approach does have some merit. On the other hand, it is not authorized by law at the present time, and even if it were, the allocation of costs and assets presents a problem.

#### 4. Conclusion

The Supplemental Report dated November 9, 1973 filed by PERA conforms with the statutes. Although the Report dated October 9, 1973 presents an interesting approach, it does not, in our opinion, conform with the present laws.

Under present laws and standards, the financing for the Coordinated Group appears to be more than adequate but that for the Basic Group is not sufficient to retire the Basic deficit by 1997.

Franklin C. Smith  
Associate, Society of Actuaries  
GEORGE V. STENNES AND ASSOCIATES  
Commission Actuaries

PERA VALUATION AS OF JUNE 30, 1973

(Police and Fire Fund)

The purpose of this memorandum is to discuss the valuation report of the PERA Police and Fire Fund, dated November 9, 1973, which was submitted to the Commission in accordance with Chapter 249 of Minnesota Laws 1967 and Chapter 289 of Minnesota Laws 1969. The valuation was made using the entry age normal cost method and assuming 5% interest. The 1973 and 1972 valuation reports were completed by Arthur Stedry Hansen, Consulting Actuaries.

This memorandum contains the following:

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

1. Statistical and Valuation Data

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

	As of <u>June 30, 1972</u>	As of <u>June 30, 1973</u>
(1) <u>Membership</u>		
Active Members	3,027	3,105
Retired Members	216*	251
Disabled Members	5	6
Survivors of Deceased Members	192*	201
Deferred Annuitants	11*	13
(2) <u>Payroll and Annuities Payable</u>		
Covered Payroll	\$ 28,359,526	\$ 30,192,486
Annuities Payable (annual)	599,255	746,734
(3) <u>Valuation Balance Sheet</u>		
Accrued Liability	\$ 34.1 million	\$ 51.7 million
Assets	<u>31.6 million</u>	<u>38.9 million</u>
Unfunded Accrued Liability (Deficit)	2.5 million	12.8 million
Funding Ratio (Assets/ Accrued Liability)	92.8%	75.3%

\* Corrected on 1973 Report.

	As of <u>June 30, 1972</u>	As of <u>June 30, 1973</u>
(4) <u>Normal Costs and Funding Costs</u>		
Normal Cost	17.47%	16.07%
Expenses	<u>0.12</u>	<u>0.11</u>
Normal Cost Plus Expenses	17.59%	16.18%
Normal Cost Plus Expenses	17.59%	16.18%
Interest on Deficit	<u>0.30</u>	<u>2.11</u>
Minimum Contribution	17.89%	18.29%
Normal Cost Plus Expenses	17.59%	16.18%
Amortization by 1997	<u>0.52</u>	<u>3.06</u>
Required Contribution	18.11%	19.24%
(5) <u>Statutory Contributions</u>		
Employee	7.0%	8.0%
Employer Regular	10.5	12.0
Employer Additional	<u>1.5</u>	<u>0.0</u>
Total	19.0%	20.0%

## 2. Discussion of Valuation Results

The benefit percentages of this plan were not improved, but the basis was changed from career average to final salary. In spite of this improvement, the Report shows a decline in normal cost. On the other hand, the increase in the deficit decreased the funding ratio from almost 93% to about 75%.

The deficit increased from \$2, 446, 030 to \$12, 754, 531 which is an increase of \$10, 308, 501. The PERA Actuary gives the following analysis of this change:

### Increases:

Change in Benefits	\$ 14, 527, 692	
Salary Scale Loss	<u>1, 585, 742</u>	
Total Increases		\$ 16, 113, 434

### Decreases:

Change in Assumed Interest Rate	\$ 3, 010, 129	
Excess Interest	826, 113	
Amortization Contribution	1, 347, 590	
Other Actuarial Gains	<u>621, 101</u>	
Total Decreases		<u>5, 804, 933</u>

Net Increase		\$ 10, 308, 501
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### 3. Conclusion

The Report filed by PERA relative to the Police and Fire Fund conforms with the requirements of the various statutes.

The statutory contribution of 20% covers the required support. However, the sizeable increase in the deficit plus the elimination of the Employer Additional contribution means that the financing of the deficit is now shared by Employees and Employer.

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Commission Actuaries