

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

SUPPLEMENTAL REPORT
(Based on a June 30, 1978 Census)

 **FILE COPY**

NOV 30 1978 LOP&R

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

SUMMARY SHEET
(Census as of June 30, 1978)

<u>General</u>	<u>Percent Change</u>		<u>Police and Fire</u>	<u>Percent Change</u>
<u>MEMBERSHIP</u>				
14,083	6.3%	Retired Member & Beneficiaries	726	7.9%
\$ 33,180,101	14.8%	Annual Benefit Payments	\$ 2,421,612	25.0%
81,328	(0.9%)	Active Members#	3,971	6.4%
\$763,483,570	7.9%	Participating Payroll	\$59,933,726	13.3%
<u>FUNDED STATUS</u>				
\$765,917,212	9.0%	Value of Benefits Earned to Date	\$100,142,370	17.7%
702,543,189	14.4%	Assets	98,015,315	19.6%
<u>91.7%</u>	<u>4.3%*</u>	Funding Ratio	<u>97.9%</u>	<u>1.6%*</u>
<u>ADEQUACY OF CONTRIBUTIONS**</u>				
9.500%		Member/Employer	20.000%	
9.091%		Actuarial Requirement	18.115%	
<u>.409%</u>		Margin	<u>1.885%</u>	

* Increase in Funding Ratio not Percentage Change.

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

Reflects change in considered active members.
Members with no contributions for prior 12 months
are excluded.

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

General Fund

STATEMENT OF FINANCIAL CONDITION AND STATUS
OF FUNDING AS OF JUNE 30, 1978

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

General Fund

STATEMENT OF FINANCIAL CONDITION
(Year Ended - June 30, 1978)

ASSETS

Cash and Investments (Net)	\$702,543,189
Benefits Earned to Date Remaining to be Financed by Members and Employers	<u>63,374,023</u>
<u>Total</u>	<u>\$765,917,212</u>

LIABILITIES

Benefits Payable to Retired Members and Their Beneficiaries	\$276,149,069
Deferred Annuitants	10,016,621
Former Members without Vested Rights	5,946,856
Benefits Earned to Date by Active Members	<u>473,804,666</u>
<u>Total</u>	<u>\$765,917,212</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral FundANALYSIS OF FUNDED STATUS
(Year Ended - June 30, 1978)

	<u>Assets</u>	<u>Obligation</u>	<u>Unfunded Obligation</u>
Retired Members and Beneficiaries	\$276,149,069	\$276,149,069	\$ - 0 -
Deferred Annuitants	10,016,621	10,016,621	- 0 -
Former Members without Vested Rights	5,946,856	5,946,856	- 0 -
Active Members	<u>410,430,643</u>	<u>473,804,666</u>	<u>63,374,023</u>
<u>Total</u>	<u>\$702,543,189</u>	<u>\$765,917,212</u>	<u>\$63,374,023</u>
Ratio of Assets to Obligation		<u>91.7%</u>	

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral FundPROGRESS OF FUNDING

<u>Year Ending 6/30</u>	<u>Funding Objective</u>	<u>Book Value of Assets</u>	<u>Ratio Assets/ Funding Objective</u>
1973	\$478,489,266	\$349,259,698	73.0%
1974	534,952,952*	406,488,349	76.0
1975	556,873,746	449,178,269	80.7
1976	618,471,693	511,152,418	82.6
1977	702,740,021	613,887,437	87.4
1978	765,917,212	702,543,189	91.7

* Reflects 1974 Amendments

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, 1978)

	<u>Residual Benefit</u>	<u>Integrated Plan</u>	<u>Total</u>
<u>RESOURCES</u>			
Cash and Investments (Net)	\$294,989,689	\$ 407,553,500	\$ 702,543,189
Present Value of All Remaining Benefits to Be Funded by Future Contributions	<u>110,917,564</u>	<u>648,178,744</u>	<u>759,096,308</u>
<u>Total</u>	<u>\$405,907,253</u>	<u>\$1,055,732,244</u>	<u>\$1,461,639,497</u>

LIABILITIES AND RESERVES

Benefits Payable to Retired Members and Their Beneficiaries	\$132,757,081	\$ 143,391,988	\$ 276,149,069
Deferred Annuitants	4,131,683	5,884,938	10,016,621
Former Members without Vested Rights	-	5,946,856	5,946,856
Active Members	<u>269,018,489</u>	<u>900,508,462</u>	<u>1,169,526,951</u>
<u>Total</u>	<u>\$405,907,253</u>	<u>\$1,055,732,244</u>	<u>\$1,461,639,497</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral FundANALYSIS OF ACTUARIAL OBLIGATION
(Census as of June 30, 1978)Retired Members

Service Retirement (Payable from Minnesota Adjustable Fixed Benefit Fund) - Net	\$213,335,311	
Disability	14,474,338	
Survivor	39,893,945	
Reserve for Future Old Law Survivors	<u>8,445,475</u>	\$ 276,149,069
Deferred Annuitants		10,016,621
Former Member without Vested Rights		5,946,856

Active Members

Retirement	\$931,606,630	
Vesting	119,613,030	
Disability	51,355,601	
Survivor	28,444,348	
Refund	<u>38,507,342</u>	<u>1,169,526,951</u>
<u>Total Obligation</u>		<u>\$1,461,639,497</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral Fund

DETERMINATION OF THE PRIOR ENTRY AGE
NORMAL CONTRIBUTION REQUIREMENTS
 (Census as of June 30, 1978)

	<u>Residual Benefit</u>	<u>Integrated Plan</u>	<u>Total</u>
Total Obligation	\$405,907,253	\$1,055,732,244	\$1,461,639,497
Net Assets on Hand	294,989,689	407,553,500	702,543,189
Obligation to be Funded in the Future	\$110,917,564	\$ 648,178,744	\$ 759,096,308
Present Value of Future Attained Age Normal Contribution	\$110,917,564	Not Applicable	\$ 110,917,564
Present Value of Future Entry Age Normal Level Contribution Requirements	Not Applicable	\$ 371,149,848	\$ 371,149,848
Prior Entry Age Normal Level Contribution Requirements <u>Accumulated to Date</u>	\$ <u>- 0 -</u>	\$ <u>277,028,896</u>	\$ <u>277,028,896</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral FundINTEREST REQUIREMENT ON THE
PRIOR ENTRY AGE NORMAL REQUIREMENTS
(Census as of June 30, 1978)Integrated Plan

Prior Entry Age Normal Level Contribution Requirements Accumulated to Date	\$277,028,896
Interest Requirement on Accumulated Net Prior Requirement	13,851,445
Considered Payroll	763,483,570
Interest Requirement as Percentage of Considered Payroll	<u>1.814%</u>
Forty Year Funding Requirement	16,144,735
Forty Year Funding Requirement as a Percentage of Considered Payroll	<u>2.115%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral FundENTRY AGE NORMAL LEVEL CONTRIBUTION REQUIREMENTS
(Census as of June 30, 1978)

	<u>Residual Benefit</u>	<u>Integrated Plan</u>
Present Value of Future Entry Age Normal Level Contribution Requirements	\$ 110,917,564	\$ 371,149,848
Present Value of Future Payroll of Current Members of the Association	1,263,298,000	5,336,116,700
Attained Age Normal Level Contribution Rate*	8.780%	Not Applicable
Entry Age Normal Level Contribution Rate at Beginning of the Year*	Not Applicable	6.955%
Entry Age Normal Level Contribution Rate Adjusted for Mid-Year Receipt	<u>9.000%</u>	<u>7.129%</u>

* Future Requirements - Future Payroll

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONGeneral Fund

ACTUARIAL BALANCE EXPRESSED AS A
PERCENTAGE OF COVERED PAYROLL
 (Census as of June 30, 1978)

	<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>	
	<u>Residual Benefit</u>	<u>Requirement Expected Ultimate Level</u>	<u>Federal Law</u>
Attained Age Normal Contribution Requirement	9.000%		
Entry Age Normal Level Contribution Rate		7.129%	7.129%
Interest Requirement on Prior Level Requirements		1.814	2.115
Expense Allowance		<u>0.148</u>	<u>0.148</u>
Total Level Requirement	<u>9.000%</u>	<u>9.091%</u>	<u>9.392%</u>
<u>Actuarial Balance Contribution Rate Less Level Requirement</u>	<u>0.000%</u>	<u>0.409%</u>	<u>0.108%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

STATEMENT OF FINANCIAL CONDITION AND
STATUS OF FUNDING AS OF JUNE 30, 1978

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, 1978)ASSETS

Cash and Investments (Net)	\$ 98,015,315
Benefits Earned to Date Remaining to be Financed by Members and Employers	<u>2,127,055</u>
<u>Total</u>	<u>\$100,142,370</u>

LIABILITIES

Benefits Payable to Retired Members and Their Beneficiaries	\$ 24,762,020
Deferred Annuitants	2,282,189
Former Members without Vested Rights	176,447
Benefits Earned to Date by Active Members	<u>72,921,714</u>
<u>Total</u>	<u>\$100,142,370</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundANALYSIS OF FUNDED STATUS
(Year Ended - June 30, 1978)

	<u>Assets</u>	<u>Obligation</u>	<u>Unfunded Obligation</u>
Retired Members and Beneficiaries	\$24,762,020	\$ 24,762,020	\$ - 0 -
Deferred Annuitants	2,282,189	2,282,189	- 0 -
Former Members without Vested Rights	176,447	176,447	- 0 -
Active Members	<u>70,794,659</u>	<u>72,921,714</u>	<u>2,127,055</u>
<u>Total</u>	<u>\$98,015,315</u>	<u>\$100,142,370</u>	<u>\$2,127,055</u>
Ratio of Assets to Obligation	<u>97.9%</u>		

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundPROGRESS OF FUNDING

<u>Year Ending 6/30</u>	<u>Funding Objective</u>	<u>Book Value of Assets</u>	<u>Ratio Assets/ Funding Objective</u>
1973	\$ 51,833,540	\$38,959,178	75.2%
1974	56,824,407	47,546,849	83.7
1975	60,295,656	56,100,213	93.0
1976	75,033,240	67,027,999	89.3
1977	85,084,108	81,962,092	96.3
1978	100,142,370	98,015,315	97.9

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, 1978)RESOURCES

Cash and Investments (Net)	\$ 98,015,315
Present Value of All Remaining Benefits to be Funded by Future Contributions	<u>133,413,099</u>
<u>Total</u>	<u>\$231,428,414</u>

LIABILITITES AND RESERVES

Benefits Payable to Retired Members and Their Beneficiaries	\$ 24,762,020
Deferred Annuitants	2,282,189
Former Members without Vested Rights	176,447
Active Members	<u>204,207,758</u>
<u>Total</u>	<u>\$231,428,414</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundANALYSIS OF ACTUARIAL OBLIGATION
(Census as of June 30, 1978)Retired Members

Service Retirement (Payable from Minnesota Adjustable Fixed Benefit Fund) - Net	\$ 19,091,442	
Disability	1,415,210	
Survivor	3,894,467	
Reserve for Future Old Law Survivors	<u>360,901</u>	\$ 24,762,020
Deferred Annuitants		2,282,189
Former Members without Vested Rights		176,447

Active Members

Retirement	\$145,244,253	
Vesting	12,732,443	
Disability	34,737,999	
Survivor	7,419,705	
Refund	<u>4,073,358</u>	<u>204,207,758</u>
<u>Total Obligation</u>		<u>\$231,428,414</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundDETERMINATION OF THE PRIOR ENTRY AGE
NORMAL CONTRIBUTION REQUIREMENTS
(Census as of June 30, 1978)

Total Obligation	\$231,428,414
Net Assets on Hand	98,015,315
Obligation to be Funded in the Future	133,413,099
Present Value of Future Entry Age Normal Level Contribution Requirements	<u>112,287,282</u>
Prior Entry Age Normal Level Contribution Requirements <u>Accumulated to Date</u>	\$ <u>21,125,817</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire FundINTEREST REQUIREMENT ON THE
PRIOR ENTRY AGE NORMAL REQUIREMENTS
(Census as of June 30, 1978)

Prior Entry Age Normal Level Contribution Requirements Accumulated to Date	\$21,125,817
Interest Requirement on Accumulated Net Prior Requirement	1,056,291
Considered Payroll	59,933,726
Interest Requirement as Percentage of Considered Payroll	<u>1.762%</u>
Forty Year Funding Requirement	\$ 1,231,174
Forty Year Funding Requirement as a Percentage of Considered Payroll	<u>2.054%</u>

PUBLIC EMPLOYEES RETIREMENT ASSOCIATION

Police and Fire Fund

ENTRY AGE NORMAL LEVEL CONTRIBUTION REQUIREMENTS
(Census as of June 30, 1978)

Present Value of Future Entry Age Normal Level Contribution Requirements	\$112,287,282
--	---------------

Present Value of Future Payroll of Current Members of the Association	707,661,300
---	-------------

Entry Age Normal Level Contribution Rate at Beginning of the Year*	<u>15.867%</u>
--	----------------

Entry Age Normal Level Contribution Rate Adjusted for Mid-Year Receipt	<u>16.264%</u>
--	----------------

* Future Requirements - Future Payroll

PUBLIC EMPLOYEES RETIREMENT ASSOCIATIONPolice and Fire Fund

ACTUARIAL BALANCE EXPRESSED AS A
PERCENTAGE OF COVERED PAYROLL
 (Census as of June 30, 1978)

Member Contribution Rate	8.000%
Employer Contribution Rate	<u>12.000</u>
<u>Total</u>	<u>20.000%</u>

	Expected Ultimate Level	<u>Requirement</u> Federal Law
Entry Age Normal Level Contribution Rate	16.264%	16.264%
Interest Requirement on Prior Level Requirements	1.762	2.054
Expense Allowance	<u>0.089</u>	<u>0.089</u>
Total Level Requirement	<u>18.115%</u>	<u>18.407%</u>
<u>Actuarial Balance Contribution Rate Less Level Requirement</u>	<u>1.885%</u>	<u>1.593%</u>

24m
204
December 11, 1978

Mr. Davis H. Roenisch
Compensation and Capital
125 South Wacker Drive
Chicago IL 60606

Dear Dave:

Re: 1978 PERA Valuation

You may have heard that I am now doing the work for the Commission on my own. When the Stennes firm merged with TPF&C on September 1, I completed my retirement so far as the firm was concerned. However, since TPF&C did not want to continue service for Minnesota public employee funds and take on the Commission's work for fear of conflict of interest, I was sounded out by both TPF&C and the Commission on the possibility of continuing the work as an independent consultant. So here I am.

As usual, I have some questions and comments on the PERA Valuation, and in most of the questions, I am trying to anticipate items which will be raised by members of the Commission.

First, I will mention that in presenting the information, I will increase the asset figures given in your report by the amount of the Annuity Stabilization Reserve and make the same increase in the Present Value of Benefits. This produces the same Unfunded Liability but makes a slight increase in the Funding Ratio.

The normal cost percentage decreased from last year's figure in all three groups. For the Coordinated Group, the decline was from 7.086% to 6.567%, a drop of 0.519%. For each of the other two groups, I regard the figures for the two years as being about the same, but someone will probably ask the reason for a drop as large as 0.519%. Can you put your finger on the reason for this change?

The other questions are concerned with the changes in the Unfunded Liability. In all three cases, we need to have an approximate breakdown of the experience gain or loss among active lives: a gain of \$2,044,522 for the Basic Group; a loss of \$1,570,606 for the Coordinated Group; a gain of \$542,399 for the Police and Fire Group. I am sure that someone will ask how much of it is from mortality and terminations, etc.

In all three groups, we have an increase item from benefit changes. Please give me a brief description of these improvements.

For the Basic Group, you include \$7,900,577 for Aging of the Group. There was a similar item of \$20,734,517 last year. I recall that when I asked you about this last year, you replied that this was a shift in the allocation of the total present value of benefits between past service cost and future service cost.

DEC 11 1978 LCP&R

DEC 11 1978 LCP&R

Although I did not pursue the subject last year, I think that the discussion which occurred at the subsequent meeting of the Commission requires that we go into this more at the present time. Under the entry age normal cost method, I fail to grasp how a shift of this kind can occur. In fact, under this method, we have a prospective benefit, and no attention is paid to what part has been earned by service to date and what part will be earned by service in the future. ive
^

Under this method, one first determines the normal cost as a level number of dollars which will fund the prospective benefit if paid from the date of entry to the date of retirement. This can be used as the final normal cost or the present value of these normal costs in the future can be calculated and divided by the present value of future payroll to determine a final normal cost which is a level percentage of future payroll. The latter is done with our public funds.

The accrued liability can be obtained either by calculating the accumulated value of the level dollar normal costs or by determining the difference between the present value of benefits and the above-mentioned present value of the level dollar normal costs in the future.

Since we deal only with the total prospective benefit in the above process, I do not see any place where we are involved with a treatment of past service cost and future service cost.

Under the attained age normal cost method, one first splits the prospective benefit into two parts and then uses the unit credit cost method on the past service portion and the aggregate cost method on the future service portion. Even with this method, I fail to see how there can be an increase item from the aging of the group. In addition, this is not the method set forth in the statute.

Assuming a valid explanation of this item, I am concerned about the effect on funding now and in the future. If this shift had not taken place, I estimate that the normal cost this year would be about 16.367%, the amortization requirement about 13.888% and the required support about 30.403%. Since the amortization period is 19 years compared with 7.27 as the ratio of the present value of payroll to payroll, shifting larger amounts at the present time into the sum to be amortized reduces the required funding. However, this group will continue to age, and if it is valid that aging produces a shift now, shifts will occur in all future years. Therefore, although the shifts reduce the required funding at the present time, I feel that at some point, the wind will start blowing the other direction with substantial unfavorable effects on the funding requirement.

One further question on the Basic Group. I always combine your three items, Amortization Payment, Excess or Deficit in Rate and Rate Applied to Lower or Higher Payroll to determine a net amortization contribution or a net contribution deficiency. Last year, this combination produced a net

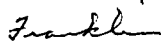
deficiency of \$7,243,415; this year \$4,591,099. Since the minimum contribution in 1976 came out 21.502% compared with 22.997% in 1977, I would expect the net deficiency this year to be somewhat larger, probably in the neighborhood of \$8,000,000.

Last year, your analysis contained the item Rate Applied to Lower Payroll which was logical since the payroll went down from \$189,894,459 to \$173,224,698. The analysis this year contains the same item but with the figure in the other column; and the figure is larger in size. However, the payroll figure this year is very close to the 1977 figure. If this item were not in the analysis, the two remaining items would net out to \$7,800,303 which is close to my expected \$8,000,000 figure.

Finally, I want to verify my understanding of one item. On the Police and Fire Group, you have \$592,053 from New Units. I recall that when the Brooklyn Center Police rejoined PERA, they were required to contribute an amount which would give them the same funding ratio as the whole group (about 80%). Is the \$592,053 the unfunded liability of roughly 20% on the Brooklyn Center Police and any other groups which were taken in during the year?

The list above is rather long and at least one of the items is a bit complicated, but I will appreciate hearing from you on the above.

Sincerely yours,



Franklin C. Smith

cc: Lawrence A. Martin

2123 Stanford Avenue
St. Paul MN 55105
612-698-2897