

PUBLIC EMPLOYEES RETIREMENT FUND

ACTUARIAL VALUATION REPORT

JULY 1, 1985

 **FILE COPY**

December 9, 1985

Legislative Commission on
Pensions and Retirement
55 State Office Building
St. Paul, Minnesota 55155

RE: PUBLIC EMPLOYEES RETIREMENT FUND

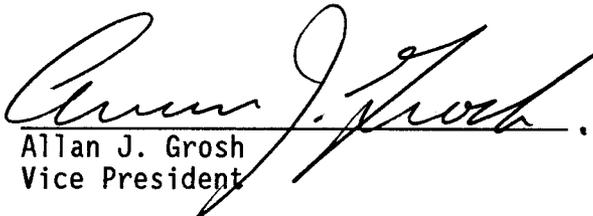
Gentlemen:

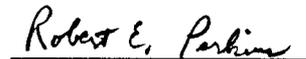
We have prepared an actuarial valuation of the Fund as of July 1, 1985 based on membership and financial data supplied by the Fund.

We certify that to the best of our knowledge and belief this actuarial valuation was performed in accordance with the requirements of Section 356.215, Minnesota Statutes, and the requirements of the Standards for Actuarial Work, adopted by the Commission on June 11, 1985.

Respectfully submitted,

THE WYATT COMPANY


Allan J. Grosh
Vice President


Robert E. Perkins
Consulting Actuary

PUBLIC EMPLOYEES RETIREMENT FUND

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PUBLIC EMPLOYEES RETIREMENT FUND

**REPORT HIGHLIGHTS
(DOLLARS IN THOUSANDS)**

	<u>06/30/84 VALUATION</u>	<u>07/01/85 VALUATION</u>
A. CONTRIBUTIONS (TABLE 11)		
1. Statutory Contributions - Chapter 353 % of Payroll	9.61%	9.36%
2. Required Contributions - Chapter 356 % of Payroll	8.32%	8.77%
3. Sufficiency (Deficiency) (A1-A2)	1.29%	0.59%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	NA	\$1,842,957
b. Current Benefit Obligations (Table 8)	NA	\$2,310,374
c. Funding Ratio (a/b)	NA	79.77%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$1,599,674	\$1,842,957
b. Actuarial Accrued Liability (Table 9)	\$2,228,361	\$2,614,116
c. Funding Ratio (a/b)	71.79%	70.50%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$2,403,175	\$3,373,562
b. Current and Expected Future Benefit Obligations	\$2,702,139	\$3,209,739
c. Funding Ratio (a/b)	88.94%	105.10%
C. PLAN PARTICIPANTS		
1. Active Members (Table 3)		
a. Number	83,702	86,312
b. Projected Annual Earnings	\$1,225,625	\$1,423,911
c. Average Annual Earnings (Actual \$)	\$14,643	\$16,497
d. Average Age	NA	42.2
e. Average Service	NA	8.1
2. Others		
a. Service Retirements (Table 4)	15,765	17,277
b. Disability Retirements (Table 5)	638	654
c. Survivors (Table 6)	3,665	3,854
d. Deferred Retirements (Table 7)	1,843	1,863
e. Terminated Other Non-vested (Table 7)	NA	38,986
f. Total	21,911	62,634

PUBLIC EMPLOYEES RETIREMENT FUND

COMMENTARY

Purpose

The purpose of this valuation is to determine the financial status of the Fund. In order to achieve this purpose, an actuarial valuation is made at the beginning of each fiscal year as required by Section 356.215 of Minnesota Statutes.

Report Highlights

The statutory contributions for the Public Employees Retirement Fund continue to be sufficient. The margin of sufficiency has decreased from 1.29% in 1984 to 0.59% in 1985. According to this valuation a contribution rate of 8.77% is required to comply with Minnesota Law.

The financial status of the Fund can be measured by three different funding ratios:

- o The Accrued Benefit Funding Ratio is a measure of current funding status, and when viewed over a period of years, presents a view of the funding progress. This ratio is based on recently published Governmental Accounting Standards Board proposals. This year's ratio is 79.77%. The corresponding ratio for the prior year was not calculated.

- o The Accrued Liability Funding Ratio is also a measure of funding status and funding progress. It is based on the actuarial cost method that

has historically been used. For 1985 the ratio is 70.50%, which is a decrease from the 1984 value of 71.79%.

- o The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This ratio exceeds 100% and verifies that the current statutory contributions are adequate.

Asset Information

Beginning in 1984, changes in Section 356.215 of Minnesota Statutes require that the asset value used for actuarial purposes reflect a portion of the unrealized gains and losses. Only a portion of these gains and losses are considered because market values are typically volatile and could produce erratic changes in the contribution requirements from year to year.

The calculation of assets for actuarial purposes begins with the reporting of Total Assets by the Fund (Table 1, line B). These Total Assets, reduced by any Amounts Currently Payable (line C), produce the Assets Available for Benefits (line D5), which is the starting value for determining the Actuarial Value of Assets.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines F1 to F6. It combines the cost value and one-third of the difference between market value and cost value.

The term "Actuarial Value of Assets" is used to indicate that the value was determined for use in this actuarial valuation. Since Minnesota Statutes refer to this value as "Current Assets", the latter phrase will be used in the

remainder of this report.

Since this Fund participates in the Minnesota Post Retirement Investment Fund, referred to as MPRIF, the asset value shown on line A3 is initially calculated by the State Board of Investment(SBI), and is the expected amount of MPRIF participation assuming the Fund earns 5% interest. The actual amount is determined by calculating the liability based on annuitant information supplied by the Fund. If the actual liability is larger than expected, the difference is labelled a mortality loss and if smaller a gain.

Investment performance by SBI above the 5% level is not shown in the assets but will be added in on January 1, 1986 when benefits will be increased for those annuitants who have been receiving payments for 18 months. Next year's valuation will include the 1986 benefit increase in determining the MPRIF value.

Membership Data

Tables 3 through 6 summarize statistical information on members by category. Active members are grouped by age and completed years of service in Table 3. The earnings shown for these members are for the prior fiscal year except in the case of new hires where earnings have been annualized.

The service retirements in Table 4 include not only those retiring from active status but also disabled members who have attained retirement age. Disabled members under retirement age are shown in Table 5. The survivors category (Table 6) includes spouses and children of deceased members.

Actuarial Balance Sheet

An actuarial balance sheet is required by Section 356.215, Subdivision 4f of Minnesota Law. This balance sheet (Table 8) establishes a method for evaluating both current and future levels of funding.

Current funding levels are evaluated by comparing Current Assets on line A to Current Benefit Obligations on line D5. The difference between the obligations and the assets is shown as Current Unfunded Liability on line G.

The measurement of the Current Benefit Obligation is based on the Proposed Statement of Governmental Accounting Standards published by the Governmental Accounting Standards Board (GASB) in August 1985. This value is known as the Actuarial Present Value of Credited Projected Benefits.

The first step in the GASB calculation for active members involves projecting salaries and service to determine future benefits payable under the plan and then discounting those projected benefits to the date of the valuation. The second step is to determine the discounted value of benefits for the non-active members. For those non-active members whose benefits have not commenced, the liability includes augmentation of benefits to date of commencement. The result of the first two steps is shown on line F, Total Current and Expected Future Benefit Obligations.

The third step is to determine the portion that represents Current Benefit Obligations. In the case of active members the Current Benefit Obligation is computed by attributing an equal benefit amount to each year of credited and expected future employee service. For all others, their entire liability is

considered a Current Benefit Obligation.

Current and future funding levels are evaluated by comparing Current and Future Expected Assets on line C to Current and Expected Future Benefit Obligations on line F. The difference between the obligations and the assets is shown as the Current and Future Unfunded Liability on line H.

Since line F has already been calculated, the remaining step is to determine the Expected Future Assets . The portion of the statutory contribution rate in excess of the combined normal cost rate and expense rate is first calculated. The amount of assets for line B1 can be determined by projecting from the valuation date to the amortization date (the date for paying off all unfunded liabilities) on the assumption that total payroll is increasing at 6.5% annually and then discounted to the date of the valuation.

The Current Unfunded Liability, line G, is a measurement of the status of the funding to the date of the valuation. The Current and Future Unfunded Liability is a measurement of the adequacy of the current statutory contribution level.

Contribution Sufficiency

The approach used by the State of Minnesota to determine contribution sufficiency is the Entry Age Normal Cost Method. The primary characteristic of this method is that it allocates costs as a level percentage of payroll.

A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) shows similarities and differences. The similarity is that both approaches calculate the value of all future benefits the same way. This can be

verified by comparing line F of Table 8 to line A6, column 1, of Table 9. The difference arises from the technique for allocating liabilities between past and future. As noted in the prior section, the balance sheet allocates benefits and the corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll.

An Unfunded Actuarial Accrued Liability is computed under the Entry Age Normal Cost Method by comparing the liabilities allocated to past service (Actuarial Accrued Liability) to the Current Assets. This amount, line B3, is funded over the remaining years to the amortization date by a series of payments. Prior to 1984 these payments were calculated to be a level dollar amount similar to a fixed interest rate mortgage. The method of funding was changed in 1984 to produce a series of payments that remain a constant percentage of payroll each year.

Under this new approach the payments will increase 6.5% each year since that is the assumed rate of increase in payroll. Although the payment schedule will be adequate to amortize the existing unfunded, the lower payments in the earlier years will not be sufficient to cover the interest on the unfunded liability. After a few years the annual payment will begin to cover not only the interest but also repay a portion of the unfunded.

Projected Cash Flow

Table 12 illustrates the anticipated cash flow over the amortization period. The cash flow begins with the Non-MPRIF Assets, which are the Current Assets reduced by the MPRIF Reserves. Contributions are then added based on the

present statutory rates for employers and employees. As members become eligible for payments from MPRIF an amount of reserve is transferred to SBI. The other disbursements represent benefit payments made directly by the Fund.

This projected cash flow assumes that future payrolls increase by 6.5%. For purposes of this table only, new members are assumed to be hired in order to replace those who terminate from the active group. This open group method provides a more realistic picture of future cash flow. The statutory interest rate of 8% is used to project future investment return.

The amounts transferred to MPRIF will be affected by the number of members who reach the assumed retirement age during a given year. The amount for 1987 is large because it includes those already over age 64 who are assumed to retire a year from the valuation date.

Basic and Coordinated

Table 2 allocates the Current Assets between the Basic and Coordinated Plans. This allocation is performed by separating the assets between MPRIF and Non-MPRIF. The MPRIF portion is allocated automatically as a result of the liability calculations at the beginning and end of the year.

The Non-MPRIF portion, referred to in Table 2 as the Allocable Assets, is determined by starting with last year's allocation and projecting to the current valuation date based on the receipts and disbursements by Plan. Numbers marked with an asterisk represent approximations based on the following assumptions:

- o Line G3 - Assumes all State appropriations are for the Basic Plan

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- o Line H1 - Allocates new MPRIF annuitants in proportion to liabilities for those retired on or after July 1, 1984

- o Line H2 - Places all of the State appropriation in the Basic Plan and allocates the remaining in proportion to Non-MPRIF payouts projected for the current fiscal year.

- o Line H3 - Assumes 99% of the refunds are made to Coordinated members.

- o Line H4 - Assumes expenses in proportion to beginning of year Current Assets (line F1)

- o Line H5 - Allocates the MPRIF mortality loss in proportion to the MPRIF reserves at the end of the year.

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Additional tables at the end of this report show contributions and liabilities for the Basic and Coordinated Plans.

TABLE 1

PUBLIC EMPLOYEES RETIREMENT FUND

ACCOUNTING BALANCE SHEET
(DOLLARS IN THOUSANDS)

July 1, 1985

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS		
1. Cash and Cash Equivalents	\$63,210	\$63,210
2. Investments		
a. Fixed Income	270,004	262,752
b. Equity	691,661	613,091
c. Real Estate	60,538	53,563
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	822,377	822,377
4. Other	3,861	3,861
	-----	-----
B. TOTAL ASSETS	<u>\$1,911,651</u>	<u>\$1,818,854</u>
	=====	=====
C. AMOUNTS CURRENTLY PAYABLE	\$6,829	\$6,829
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$391,294	\$391,294
2. Employer Reserves	691,151	598,354
3. MPRIF Reserves	822,377	822,377
4. Non-MPRIF Reserves	0	0
	-----	-----
5. Total Assets Available for Benefits	<u>\$1,904,822</u>	<u>\$1,812,025</u>
	-----	-----
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	<u>\$1,911,651</u>	<u>\$1,818,854</u>
	=====	=====
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$1,812,025
2. Market Value (D5)	\$1,904,822	
3. Cost Value (D5)	1,812,025	

4. Market Over Cost (F2-F3)	\$92,797	
5. 1/3 of Market Over Cost(F4)/3		30,932

6. Actuarial Value of Assets (F1+F5) (Same as "Current Assets")		<u>\$1,842,957</u>
		=====

TABLE 2

PUBLIC EMPLOYEES RETIREMENT FUND

CHANGES IN ASSETS AVAILABLE FOR BENEFITS AND ASSET ALLOCATION
(DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1985

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS AVAILABLE AT BEGINNING OF YEAR	\$1,562,569	\$1,616,748
B. OPERATING REVENUES		
1. Member Contributions	\$60,564	\$60,564
2. Employer Contributions	68,375	68,375
3. Investment Income	99,325	99,325
4. MPRIF Income	72,720	72,720
5. Net Realized Gain (Loss)	0	0
6. Other	668	668
7. Net Change in Unrealized Gain (Loss)	146,976	0
	-----	-----
8. Total Revenue	\$448,628	\$301,652
	-----	-----
C. OPERATING EXPENSES		
1. Service Retirements	\$79,477	\$79,477
2. Disability Benefits	3,281	3,281
3. Survivor Benefits	7,631	7,631
4. Refunds	13,158	13,158
5. Expenses	4,677	4,677
6. Other	28	28
	-----	-----
7. Total Disbursements	\$108,252	\$108,252
	-----	-----
D. OTHER CHANGES IN RESERVES	1,877	1,877
E. ASSETS AVAILABLE AT END OF YEAR	\$1,904,822	\$1,812,025
	=====	=====

TABLE 2
(cont)

PUBLIC EMPLOYEES RETIREMENT FUND

CHANGES IN ASSETS AVAILABLE FOR BENEFITS AND ASSET ALLOCATION
(DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1985

	<u>BASIC</u>	<u>COORDINATED</u>	<u>TOTAL</u>
F. BEGINNING OF YEAR			
1. Current Assets	\$682,896	\$916,778	\$1,599,674
2. MPRIF Reserves	533,887	100,906	634,793
3. Allocable Assets(F1-F2)	149,009	815,872	964,881
G. RECEIPTS			
1. Member Contributions	12,691	47,873	60,564
2. Employer Contributions	16,350	52,025	68,375
3. Other	1,877 *	0 *	1,877
4. Total	30,918	99,898	130,816
H. DISBURSEMENTS			
1. MPRIF New Annuitants	151,794 *	34,988 *	186,782
2. Non-MPRIF Benefits	10,984 *	1,160 *	12,144
3. Refunds	132 *	13,026 *	13,158
4. Expenses	1,997 *	2,680 *	4,677
5. Other	5,232 *	1,094 *	6,326
6. Total	170,139	52,948	223,087
I. EXPECTED INVESTMENT RETURN 8% OF (F3+.5XG4-.5XH6)	6,352	67,148	73,500
J. ALLOCATION OF REMAINING ASSETS IN PROPORTION TO LINE I	6,436	68,034	74,470
K. END OF YEAR			
1. Allocable Assets	22,576	998,004	1,020,580
2. MPRIF Reserves	680,091	142,286	822,377
3. Current Assets	702,667	1,140,290	1,842,957

* Allocated by Wyatt

TABLE 3

PUBLIC EMPLOYEES RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1985

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	1,968	2,757	297						5,022
25-29	1,903	4,678	3,337	190					10,108
30-34	1,753	4,355	4,740	1,773	78				12,699
35-39	1,674	3,974	4,095	2,434	747	29			12,953
40-44	1,422	3,071	3,367	1,946	1,169	293	18		11,286
45-49	713	2,011	2,840	2,116	1,299	521	261	23	9,784
50-54	429	1,487	2,215	2,045	1,579	633	427	180	8,995
55-59	303	1,086	1,780	1,945	1,758	779	467	337	8,455
60-64	127	574	1,133	1,286	1,240	586	269	206	5,421
65+	53	243	428	374	271	104	59	57	1,589
TOTAL	10,345	24,236	24,232	14,109	8,141	2,945	1,501	803	86,312

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	7,746	11,459	14,297						10,172
25-29	9,610	14,447	16,662	17,085					14,317
30-34	9,193	15,079	19,272	19,867	20,779				16,535
35-39	8,219	13,653	18,703	23,543	24,476	19,643			17,043
40-44	7,362	12,321	15,723	20,150	25,080	25,742	26,173		15,753
45-49	7,786	11,916	14,141	16,032	21,234	26,545	25,819	26,198	15,572
50-54	7,637	11,399	13,860	15,083	18,347	25,179	28,331	26,918	15,967
55-59	7,606	10,824	13,682	15,214	16,985	21,110	25,560	29,285	16,099
60-64	6,424	9,590	12,856	14,648	16,435	20,561	23,752	27,946	15,551
65+	5,146	6,951	8,824	9,745	12,891	16,120	16,280	22,773	10,580
ALL	8,323	13,072	16,271	17,849	19,593	23,107	25,712	27,860	15,497

PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE

<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
86,096	316,803	394,284	251,828	159,508	68,050	38,594	22,372	1,337,535

TABLE 4

PUBLIC EMPLOYEES RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS RETIRED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54	1	3						4
55-59	244	236	1					481
60-64	617	1,664	69	1				2,351
65-69	455	3,958	920	28			1	5,362
70-74	55	611	3,537	285	6		1	4,495
75-79	6	81	409	1,816	109	1		2,422
80-84	1	20	55	422	713	45	1	1,257
85+		1	21	54	297	372	160	905
TOTAL	1,379	6,574	5,012	2,606	1,125	418	163	17,277

AVERAGE ANNUAL ANNUITY

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54	8,683	6,674						7,177
55-59	9,753	11,964	6,326					10,831
60-64	6,769	6,835	6,095	7,188				6,796
65-69	4,966	4,441	5,912	5,879			5,522	4,746
70-74	2,360	3,246	4,202	6,078	2,979		4,754	4,167
75-79	1,202	1,694	3,125	3,364	3,297	4,440		3,259
80-84	825	1,989	3,268	2,941	2,835	3,242	7,965	2,893
85+		478	3,132	2,998	2,974	3,267	3,197	3,136
ALL	6,499	5,165	4,439	3,613	2,917	3,267	3,250	4,617

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

	<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
	8,962	33,954	22,250	9,415	3,282	1,366	530	79,759

TABLE 5

PUBLIC EMPLOYEES RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS DISABLED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	9	16	8	2				35
50-54	17	41	14	4				76
55-59	27	89	58	2	2			178
60-64	31	173	117	30	5			356
65-69	3	5	1					9
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	87	324	198	38	7	0	0	654

AVERAGE ANNUAL BENEFIT

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	6,766	4,291	3,676	3,941				4,767
50-54	8,107	5,085	5,367	2,428				5,673
55-59	4,249	4,942	5,061	4,075	2,779			4,841
60-64	3,816	4,898	5,421	3,182	2,035			4,791
65-69	2,010	6,089	10,238					5,190
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	5,032	4,922	5,266	3,189	2,248	0	0	4,911

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS OF DISABILITY

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
438	1,594	1,043	121	16	0	0	3,212

TABLE 6

PUBLIC EMPLOYEES RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1985

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	12	46	53	20	14	7		152
50-54	9	28	26	10	10	1		84
55-59	17	90	51	38	17	15	3	231
60-64	12	134	113	51	40	21	7	378
65-69	14	121	214	103	79	36	15	582
70-74	17	58	157	172	107	61	29	601
75-79	8	76	120	147	145	91	23	610
80-84	13	72	95	116	120	129	32	577
85+	17	61	103	143	141	93	81	639
TOTAL	119	686	932	800	673	454	190	3,854

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	8,258	5,390	4,414	2,690	1,307	1,362		4,359
50-54	9,364	5,480	4,305	2,516	1,861	1,486		4,701
55-59	7,127	4,826	4,390	2,780	1,470	1,453	1,510	4,053
60-64	4,660	4,436	4,395	2,888	1,450	1,430	1,514	3,685
65-69	3,855	3,352	3,801	2,942	1,436	1,493	1,734	3,040
70-74	2,891	1,880	3,089	2,903	1,598	1,528	1,518	2,414
75-79	1,679	1,878	2,139	2,436	1,753	1,531	1,526	1,966
80-84	1,445	1,606	1,847	2,095	1,934	1,668	1,520	1,818
85+	1,805	1,585	1,684	1,581	1,718	1,715	1,685	1,667
ALL	4,424	3,352	3,187	2,452	1,683	1,594	1,607	2,574

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
526	2,300	2,971	1,961	1,133	724	305	9,920

TABLE 7

PUBLIC EMPLOYEES RETIREMENT FUND
RECONCILIATION OF MEMBERS

	<u>ACTIVES</u>	<u>TERMINATED</u>	
		<u>DEFERRED RETIREMENT</u>	<u>OTHER NON-VESTED</u>
A. On June 30, 1984	83,702	1,843	NA
B. Additions	13,683	169	NA
C. Deletions:			
1. Service Retirement	(1,585)	(151)	
2. Disability	(120)		
3. Death	(141)	(7)	
4. Terminated-Deferred	(45)		
5. Terminated-Refund	(5,680)	(72)	NA
6. Terminated-Other Non-vested	(3,355)		
7. Returned as Active		(1)	NA
D. Data Adjustments	(147)	82	NA
	Vested	27,499	
	Non-Vested	58,813	
E. Total on June 30, 1985	86,312	1,863	38,986

	<u>RECIPIENTS</u>		
	<u>RETIREMENT ANNUITANTS</u>	<u>DISABLED</u>	<u>SURVIVORS</u>
A. On June 30, 1984	15,765	638	3,665
B. Additions	1,449	97	234
C. Deletions:			
1. Service Retirement	0	0	0
2. Death	(148)	(33)	0
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	0
D. Data Adjustments	211	(48)	(45)
E. Total on June 30, 1985	17,277	654	3,854

TABLE 8

PUBLIC EMPLOYEES RETIREMENT FUND

ACTUARIAL BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1985

A. CURRENT ASSETS (TABLE 1, F6)				\$1,842,957
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Supplemental Contributions				934,982
2. Present Value of Future Normal Costs				595,623
3. Total Expected Future Assets				1,530,605
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				\$3,373,562
D. CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>		<u>Total</u>
1. Benefit Recipients				
a. Retirement Annuities		\$810,509		\$810,509
b. Disability Benefits		15,911		15,911
c. Surviving Spouse's Benefits		92,168		92,168
d. Surviving Children's Benefits		1,507		1,507
2. Deferred Retirements with Future Augmentation		18,714		18,714
3. Former Members without Vested Rights		15,927		15,927
4. Active Members				
a. Retirement Annuities	101,435	784,955		886,390
b. Disability Benefits	9,158	55,542		64,700
c. Survivors' Benefits	7,375	77,100		84,475
d. Deferred Retirements	67,454	164,973		232,427
e. Refund Liability Due to Death or Withdrawal	55,214	32,432		87,646
5. Total Current Benefit Obligations	\$240,636	\$2,069,738		\$2,310,374
E. EXPECTED FUTURE BENEFIT OBLIGATIONS				\$899,365
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				\$3,209,739
G. CURRENT UNFUNDED LIABILITY (D5-A)				\$467,417
H. CURRENT AND FUTURE UNFUNDED LIABILITY (F-C)				(\$163,823)

PUBLIC EMPLOYEES RETIREMENT FUND

**DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
AND SUPPLEMENTAL CONTRIBUTION RATE
(DOLLARS IN THOUSANDS)**

JULY 1, 1985

	<u>ACTUARIAL PRESENT VALUE OF PROJECTED BENEFITS</u> (1)	<u>ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COSTS</u> (2)	<u>ACTUARIAL ACCRUED LIABILITY</u> (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$1,516,053	\$298,453	\$1,217,600
b. Disability Benefits	105,488	23,560	81,928
c. Survivors Benefits	133,697	35,816	97,881
d. Deferred Retirements	372,679	122,469	250,210
e. Refunds Due to Death or Withdrawal	127,088	115,325	11,763
f. Total	\$2,255,005	\$595,623	\$1,659,382
2. Deferred Retirements with Future Augmentation	\$18,714		\$18,714
3. Former Members Without Vested Rights	15,927		15,927
4. Annuitants in MPRIF	822,376		822,376
5. Recipients Not in MPRIF	97,717		97,717
6. Total AAL	\$3,209,739	\$595,623	\$2,614,116
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$2,614,116
2. Current Assets (Table 1,F6)			1,842,957
3. UAAL (B1-B2)			\$771,159
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2009			\$28,051,045
2. Supplemental Contribution Rate (B3/C1)			2.75%

TABLE 10

PUBLIC EMPLOYEES RETIREMENT FUND

CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
(DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1985

A. UAAL AT BEGINNING OF YEAR	\$628,688
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$79,550
2. Contribution	(128,939)
3. Interest on A, B1, and B2	48,319
4. Total (B1+B2+B3)	----- (\$1,070) -----
C. EXPECTED UAAL AT END OF YEAR (A+B4)	\$627,618
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	\$20,877
2. Investment Return	(74,470)
3. MPRIF Mortality	6,326
4. Mortality of Other Benefit Recipients	(2,091)
5. Active Members' Turnover, Retirement, Mortality and Disability	29,414
6. Other Items	163,485
7. Total	----- \$143,541 -----
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D7)	\$771,159
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	\$0
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	\$0
H. UAAL AT END OF YEAR (E+F+G)	----- \$771,159 =====

TABLE 11

PUBLIC EMPLOYEES RETIREMENT FUND
DETERMINATION OF CONTRIBUTION SUFFICIENCY
(DOLLARS IN THOUSANDS)

JULY 1, 1985

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 353		
1. Employee Contributions	4.43%	\$63,147
2. Employer Contributions	4.93%	70,187
3. Total	----- 9.36% =====	----- \$133,334 =====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	2.84%	\$40,452
b. Disability Benefits	0.22%	3,187
c. Survivors	0.35%	4,984
d. Deferred Retirement Benefits	1.17%	16,592
e. Refunds Due to Death or Withdrawal	1.10%	15,623
f. Total	----- 5.68% -----	----- \$80,838 -----
2. Supplemental Contribution Amortization by July 1, 2009 of UAAL of \$771,159	2.75%	\$39,099
3. Allowance for Expenses	0.35%	\$4,984
4. Total	----- 8.77% -----	----- \$124,921 -----
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY)		
(A3-B4)	0.59%	\$8,413

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1985 is \$1,423,911

TABLE 12

PUBLIC EMPLOYEES RETIREMENT FUND

PROJECTED CASH FLOW
(DOLLARS IN THOUSANDS)

<u>FISCAL YEAR</u>	<u>STATUTORY CONTRIBUTIONS</u>	<u>TRANSFERS TO MPRIF</u>	<u>OTHER DISBURSEMENTS</u>	<u>INVESTMENT RETURN</u>	<u>NON-MPRIF ASSETS YEAR END</u>
1985					\$1,020,580
1986	\$133,334	\$29,820	\$34,584	\$84,404	1,173,914
1987	139,366	152,534	32,789	92,075	1,220,032
1988	146,716	50,583	32,160	100,162	1,384,167
1989	154,908	70,936	32,208	112,804	1,548,735
1990	163,588	87,096	32,431	125,661	1,718,457
1991	172,805	101,340	33,049	139,013	1,895,886
1992	182,535	118,658	34,029	152,865	2,078,599
1993	193,053	120,314	35,378	167,783	2,283,743
1994	204,175	138,729	37,133	183,832	2,495,888
1995	216,133	142,702	38,612	201,064	2,731,771
1996	228,915	151,426	40,573	220,019	2,988,706
1997	242,352	185,912	42,827	239,641	3,241,960
1998	256,778	186,135	45,187	260,375	3,527,791
1999	272,329	204,668	47,853	283,016	3,830,615
2000	288,988	205,659	50,403	307,767	4,171,308
2001	306,616	239,142	53,301	334,271	4,519,752
2002	325,504	247,215	56,285	362,460	4,904,216
2003	345,711	250,301	59,587	393,771	5,333,810
2004	367,391	290,347	63,139	427,261	5,774,976
2005	390,678	297,433	66,795	463,056	6,264,482
2006	415,550	310,499	70,877	502,525	6,801,181
2007	442,011	344,634	75,247	544,980	7,368,291
2008	470,332	350,096	79,881	591,078	7,999,724
2009	500,514	449,999	84,812	638,606	8,604,033
2010	532,787	463,374	88,181	687,572	9,272,837

PUBLIC EMPLOYEES RETIREMENT FUND
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:	Pre-Retirement: 8% per annum Post-Retirement: 5% per annum
Salary Increases:	Reported salary for prior fiscal year, with new hires annualized, increased 6.5% to current fiscal year and 6.5% annually for each future year.
Mortality:	Pre-Retirement: Male - UP-1984 Unisex set forward 1 year Female - UP-1984 Unisex set back 4 years Post-Retirement: Male - Same as above Female - Same as above Post-Disability: Male - 1965 RRB rates Female - 1965 RRB rates
Retirement Age:	Age 64, or if over age 64, one year from valuation date. In addition, 50% of employees are assumed to retire under the Rule of 85 or Rule of 90 when first eligible.
Separation:	Graded rates shown in rate table.
Disability:	Rates as shown in rate table.
Administrative and Investment Expenses:	Prior year expenses expressed as percentage of prior year payroll. (0.35% of payroll)
Return of Contributions:	All employees withdrawing after age 40 were assumed to leave their contributions on deposit and receive a deferred annuitant benefit.
Family Composition:	85% of male members and 65% of female members are assumed to be married. Female is four years younger than male. Assume members have no children.
Social Security:	NA
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 5% accounted for by 5% post-retirement assumptions.
Special Consideration:	NA

TABLE 13
(cont)

Actuarial Cost Method:	Entry Age Normal Cost Method with normal costs expressed as a level percentage of earnings. Under this method Actuarial Gains(Losses) reduce(increase) the Unfunded Actuarial Accrued Liability.
Asset Valuation Method:	Cost Value plus one-third Unrealized Gains or Losses.
Payment on the Unfunded Actuarial Accrued Liability:	A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 6.5% per annum.
Projected Cash Flow Method:	Cash flows from the Non-MPRIF portion of the Fund were projected based on the current plan benefits, participant data, and actuarial assumptions. In addition, new entrants were assumed so that the total payroll would increase by 6.5% per annum.

TABLE 13
(cont)

**SEPARATIONS EXPRESSED AS THE
NUMBER OF OCCURRENCES PER 10,000**

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
20	13	14	2,750	3,832	9	9	0	0
21	12	14	2,638	3,777	9	9	0	0
22	12	14	2,505	3,712	9	9	0	0
23	11	14	2,390	3,631	10	10	0	0
24	11	13	2,265	3,516	10	10	0	0
25	11	13	2,160	3,356	10	10	0	0
26	11	12	2,045	3,226	10	10	0	0
27	11	12	1,925	3,103	10	10	0	0
28	11	11	1,820	2,997	11	11	0	0
29	11	11	1,715	2,891	11	11	0	0
30	11	11	1,610	2,805	11	11	0	0
31	12	11	1,528	2,694	11	11	0	0
32	12	11	1,435	2,590	11	11	0	0
33	13	11	1,330	2,463	12	12	0	0
34	14	11	1,245	2,325	12	12	0	0
35	15	11	1,170	2,160	12	12	0	0
36	16	12	1,092	1,990	12	12	0	0
37	18	12	1,010	1,830	13	13	0	0
38	19	13	940	1,650	13	13	0	0
39	21	14	880	1,485	14	14	0	0
40	23	15	818	1,340	15	15	0	0
41	26	16	762	1,230	16	16	0	0
42	28	18	715	1,130	17	17	0	0
43	31	19	670	1,045	18	18	0	0
44	34	21	622	972	20	20	0	0
45	38	23	580	900	22	22	0	0
46	42	26	539	830	23	23	0	0
47	46	28	497	787	25	25	0	0
48	51	31	450	745	27	27	0	0
49	56	34	420	704	30	30	0	0
50	62	38	385	663	33	33	0	0
51	69	42	345	628	36	36	0	0
52	75	46	310	595	40	40	0	0
53	83	51	270	555	45	45	0	0
54	90	56	230	522	51	51	0	0

TABLE 13
(cont)

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
55	99	62	195	478	58	58	0	0
56	108	69	150	410	66	66	0	0
57	119	75	100	362	76	76	0	0
58	130	83	50	210	88	88	0	0
59	142	90	0	50	102	102	0	0
60	155	99	0	0	118	118	0	0
61	170	108	0	0	136	136	0	0
62	187	119	0	0	157	157	0	0
63	205	130	0	0	181	181	0	0
64	226	142	0	0	208	208	10,000	10,000
65	248	155	0	0	0	0	0	0
66	272	170	0	0	0	0	0	0
67	296	187	0	0	0	0	0	0
68	321	205	0	0	0	0	0	0
69	347	226	0	0	0	0	0	0
70	377	248	0	0	0	0	0	0

TABLE 15

PUBLIC EMPLOYEES RETIREMENT FUND

MEMBERSHIP CHANGES
(DOLLARS IN THOUSANDS)

JUNE 30, 1985

A. ACTIVE MEMBERS		<u>NUMBER</u>	<u>PAYROLL</u>
1. As of the Last Valuation Date		83,702	\$1,225,625
2. New Entrants		13,683	NA
3. Total		97,385	NA
4. Separations from Active Service			
a. Refund of Contributions	(5,680)		NA
b. Separation with Deferred Annuity	(45)		NA
c. Separation with neither Refund nor Deferred Annuity	(3,355)		NA
d. Disability	(120)		NA
e. Death	(141)		NA
f. Retirement with Service Annuity	(1,585)		NA
5. Total Separations	(10,926)		NA
6. Data Adjustments	(147)		NA
7. As of Current Valuation Date		86,312	1,337,535
B. SERVICE RETIREMENT ANNUITANTS		<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date		15,765	\$64,421
2. New Entrants		1,449	NA
3. Total		17,214	NA
4. Terminations			
a. Deaths	(148)		NA
b. Others	0		NA
5. Total Terminations	(148)		NA
6. Data Adjustments	211		NA
7. As of Current Valuation Date		17,277	79,759
C. DISABLED ANNUITANTS		<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date		638	\$2,903
2. New Entrants		97	NA
3. Total		735	NA
4. Terminations			
a. Deaths	(33)		NA
b. Others	0		NA
5. Total Terminations	(33)		NA
6. Data Adjustments	(48)		NA
7. As of Current Valuation Date		654	3,212

TABLE 15
(cont)

	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
D. SURVIVING SPOUSE ANNUITANTS		
1. As of the Last Valuation Date	3,616	\$8,544
2. New Entrants	234	NA
3. Total	3,850	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	(63)	NA
7. As of Current Valuation Date	3,787	9,650
E. SURVIVING CHILDREN ANNUITANTS		
1. As of the Last Valuation Date	49	\$197
2. New Entrants	0	NA
3. Total	49	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	18	NA
7. As of Current Valuation Date	67	270
F. DEFERRED ANNUITANTS		
1. As of the Last Valuation Date	1,843	NA
2. New Entrants	169	NA
3. Total	2,012	NA
4. Terminations		
a. Deaths	(7)	NA
b. Others	(224)	NA
5. Total Terminations	(231)	NA
6. Data Adjustments	82	NA
7. As of Current Valuation Date	1,863	2,093

PUBLIC EMPLOYEES RETIREMENT FUND

BASIC

REPORT HIGHLIGHTS
(DOLLARS IN THOUSANDS)

	<u>06/30/84</u> <u>VALUATION</u>	<u>07/01/85</u> <u>VALUATION</u>
A. CONTRIBUTIONS (TABLE 11A)		
1. Statutory Contributions - Chapter 353 % of Payroll	18.50%	18.50%
2. Required Contributions - Chapter 356 % of Payroll	26.90%	36.06%
3. Sufficiency (Deficiency) (A1-A2)	-8.40%	-17.56%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 2)	NA	\$702,667
b. Current Benefit Obligations (Table 8A)	NA	\$1,414,317
c. Funding Ratio (a/b)	NA	49.68%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 2)	\$682,897	\$702,667
b. Actuarial Accrued Liability (Table 9A)	\$1,359,869	\$1,490,404
c. Funding Ratio (a/b)	50.22%	47.15%
3. Projected Benefit Funding Ratio (Table 8A)		
a. Current and Expected Future Assets	\$857,865	\$1,061,192
b. Current and Expected Future Benefit Obligations	\$1,418,108	\$1,596,516
c. Funding Ratio (a/b)	60.49%	66.47%
C. PLAN PARTICIPANTS		
1. Active Members (Table 3A)		
a. Number	7,830	6,654
b. Projected Annual Earnings	\$162,341	\$154,747
c. Average Annual Earnings (Actual \$)	\$20,733	\$23,256
d. Average Age	NA	54.4
e. Average Service	NA	22.8
2. Others		
a. Service Retirements (Table 4A)	10,557	11,259
b. Disability Retirements (Table 5A)	348	336
c. Survivors (Table 6A)	3,440	3,566
d. Deferred Retirements (Table 7A)	718	728
e. Terminated Other Non-vested (Table 7A)	NA	8,956
f. Total	15,063	24,845

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 3A
BASIC

ACTIVE MEMBERS AS OF JUNE 30, 1985

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									0
25-29									0
30-34				1	2				3
35-39				4	139	23			166
40-44				5	322	235	17		579
45-49		1	1	7	402	410	224	21	1,066
50-54		3	1	5	490	490	342	162	1,493
55-59		2		6	583	615	369	266	1,841
60-64		1	1	2	416	456	207	148	1,231
65+		2		2	94	85	48	44	275
TOTAL	0	9	3	32	2,448	2,314	1,207	641	6,654

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25									0
25-29									0
30-34				8,071	24,170				18,803
35-39				16,772	22,968	20,559			22,485
40-44				16,481	25,730	25,002	26,198		25,368
45-49		1,242	23,783	25,344	21,922	25,794	25,096	26,438	24,172
50-54		14,307	453	21,226	18,240	23,452	27,350	26,975	22,975
55-59		7,852		14,490	16,031	20,061	24,540	27,660	20,749
60-64		15,000	18,436	10,438	15,079	19,636	23,125	27,336	19,589
65+		13,638		12,070	13,401	16,223	15,543	22,610	16,113
ALL	0	11,349	14,224	17,908	18,854	22,077	24,862	27,025	21,835

PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE

<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
0	102	43	573	46,155	51,086	30,009	17,323	145,291

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 4A
BASIC

SERVICE RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS RETIRED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54	1	3						4
55-59	182	203	1					386
60-64	323	1,082	62	1				1,468
65-69	217	2,122	687	25			1	3,052
70-74	13	243	2,303	257	6		1	2,823
75-79	2	21	253	1,325	105	1		1,707
80-84		11	37	288	588	45	1	970
85+			15	44	260	372	158	849
TOTAL	738	3,685	3,358	1,940	959	418	161	11,259

AVERAGE ANNUAL ANNUITY

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54	8,683	6,674						7,177
55-59	11,785	13,069	6,326					12,446
60-64	9,939	8,953	6,404	7,188				9,061
65-69	7,530	6,432	7,029	6,386			5,522	6,644
70-74	4,326	5,803	5,232	6,282	2,979		4,754	5,368
75-79	2,334	4,098	3,999	3,818	3,328	4,440		3,817
80-84		3,041	4,393	3,519	3,105	3,242	7,965	3,288
85+			3,877	3,083	3,076	3,267	3,194	3,196
ALL	9,564	7,473	5,514	4,118	3,121	3,267	3,248	5,860

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
7,059	27,537	18,515	7,989	2,993	1,366	523	65,982

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 5A
BASIC

DISABILITY RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS DISABLED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	4	5	7	2				18
50-54	9	21	10	2				42
55-59	9	38	36	2	1			86
60-64	6	79	70	27	4			186
65-69		3	1					4
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	28	146	124	33	5	0	0	336

AVERAGE ANNUAL BENEFIT

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	11,625	8,660	4,096	3,941				7,019
50-54	13,100	7,964	6,722	3,307				8,547
55-59	8,544	8,402	7,271	4,075	4,005			7,792
60-64	8,545	8,186	7,772	3,446	2,399			7,229
65-69		8,166	10,238					8,684
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	10,449	8,226	7,354	3,506	2,720	0	0	7,544

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS OF DISABILITY

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
293	1,200	912	116	14	0	0	2,535

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 6A
BASIC

SURVIVORS AS OF JUNE 30, 1985

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	10	37	52	20	14	7		140
50-54	8	24	24	10	10	1		77
55-59	12	66	47	35	17	15	3	195
60-64	9	103	98	50	40	21	7	328
65-69	13	92	178	90	79	36	15	503
70-74	16	53	128	152	104	61	29	543
75-79	8	74	109	131	143	91	23	579
80-84	13	72	93	111	117	129	32	567
85+	17	61	103	143	137	93	80	634
TOTAL	106	582	832	742	661	454	189	3,566

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	9,192	6,042	4,488	2,690	1,307	1,362		4,503
50-54	10,079	5,769	4,519	2,516	1,861	1,486		4,842
55-59	8,973	6,010	4,619	2,855	1,470	1,453	1,510	4,476
60-64	5,752	5,195	4,875	2,926	1,450	1,430	1,514	3,992
65-69	3,894	3,879	4,177	3,172	1,436	1,493	1,734	3,240
70-74	2,901	1,983	3,379	3,037	1,576	1,528	1,518	2,480
75-79	1,679	1,793	2,199	2,530	1,736	1,531	1,526	1,969
80-84	1,445	1,606	1,870	2,040	1,956	1,668	1,520	1,812
85+	1,805	1,585	1,684	1,581	1,717	1,715	1,690	1,667
ALL	4,641	3,609	3,365	2,502	1,679	1,594	1,609	2,632

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

	<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
	492	2,101	2,799	1,856	1,110	724	304	9,386

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 7A
BASIC

RECONCILIATION OF MEMBERS

	<u>ACTIVES</u>	<u>TERMINATED</u>	
		<u>DEFERRED RETIREMENT</u>	<u>OTHER NON-VESTED</u>
A. On June 30, 1984	7,830	718	NA
B. Additions	25	66	NA
C. Deletions:			
1. Service Retirement	(835)	(102)	
2. Disability	(45)		
3. Death	(24)	(3)	
4. Terminated-Deferred	(9)		
5. Terminated-Refund	(28)	(21)	NA
6. Terminated-Other Non-vested	(215)		
7. Returned as Active		(1)	NA
D. Data Adjustments	(45)	71	NA
	Vested	6,642	
	Non-Vested	12	
E. Total on June 30, 1985	6,654	728	8,956

	<u>RECIPIENTS</u>		
	<u>RETIREMENT ANNUITANTS</u>	<u>DISABLED</u>	<u>SURVIVORS</u>
A. On June 30, 1984	10,557	348	3,440
B. Additions	745	35	193
C. Deletions:			
1. Service Retirement		0	
2. Death	(148)	(17)	0
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	
D. Data Adjustments	105	(30)	(67)
E. Total on June 30, 1985	11,259	336	3,566

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 8A
BASIC

ACTUARIAL BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1985

A. CURRENT ASSETS (TABLE 2, K3)				\$702,667
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Supplemental Contributions				252,413
2. Present Value of Future Normal Costs				106,112
3. Total Expected Future Assets				----- 358,525 -----
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				----- \$1,061,192 -----
D. CURRENT BENEFIT OBLIGATIONS				
		<u>Non-Vested</u>	<u>Vested</u>	<u>Total</u>
1. Benefit Recipients				
a. Retirement Annuities			\$669,437	\$669,437
b. Disability Benefits			11,871	11,871
c. Surviving Spouse's Benefits			86,514	86,514
d. Surviving Children's Benefits			1,507	1,507
2. Deferred Retirements with Future Augmentation			13,002	13,002
3. Former Members without Vested Rights			6,121	6,121
4. Active Members				
a. Retirement Annuities	90		471,307	471,397
b. Disability Benefits	4		31,821	31,825
c. Survivors' Benefits	29		50,395	50,424
d. Deferred Retirements	8		64,562	64,570
e. Refund Liability Due to Death or Withdrawal	3		7,646	7,649
5. Total Current Benefit Obligations		----- \$134 -----	----- \$1,414,183 -----	----- \$1,414,317 -----
E. EXPECTED FUTURE BENEFIT OBLIGATIONS				----- \$182,199 -----
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				----- \$1,596,516 -----
G. CURRENT UNFUNDED LIABILITY (D5-A)				\$711,650
H. CURRENT AND FUTURE UNFUNDED LIABILITY (F-C)				\$535,324

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 9A
BASIC

DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
AND SUPPLEMENTAL CONTRIBUTION RATE
(DOLLARS IN THOUSANDS)

JULY 1, 1985

	ACTUARIAL PRESENT VALUE OF PROJECTED BENEFITS <u>(1)</u>	ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COSTS <u>(2)</u>	ACTUARIAL ACCRUED LIABILITY <u>(3)=(1)-(2)</u>
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$620,220	\$43,756	\$576,464
b. Disability Benefits	40,098	4,623	35,475
c. Survivors Benefits	62,777	16,879	45,898
d. Deferred Retirements	75,822	20,212	55,610
e. Refunds Due to Death or Withdrawal	9,148	20,642	(11,494)
f. Total	<u>\$808,065</u>	<u>\$106,112</u>	<u>\$701,953</u>
2. Deferred Retirements with Future Augmentation	\$13,002		\$13,002
3. Former Members Without Vested Rights	6,121		6,121
4. Annuitants in MPRIF	680,091		680,091
5. Recipients Not in MPRIF	89,237		89,237
6. Total AAL	<u>\$1,596,516</u>	<u>\$106,112</u>	<u>\$1,490,404</u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$1,490,404
2. Current Assets (Table 2, K3)			702,667
3. UAAL (B1-B2)			<u>\$787,737</u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls to the Amortization Date of July 1, 2009			\$3,048,513
2. Supplemental Contribution Rate (B3/C1)			25.84%

PUBLIC EMPLOYEES RETIREMENT FUND
 CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
 (DOLLARS IN THOUSANDS)

TABLE 10A
 BASIC

YEAR ENDING JUNE 30, 1985

A. UAAL AT BEGINNING OF YEAR	\$676,972
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$11,319
2. Contribution	(29,041)
3. Interest on A, B1, and B2	53,449
4. Total (B1+B2+B3)	\$35,727
C. EXPECTED UAAL AT END OF YEAR (A+B4)	
	\$712,699
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	(\$7,865)
2. Investment Return	(6,436)
3. MPRIF Mortality	5,232
4. Mortality of Other Benefit Recipients	(1,751)
5. Active Members' Turnover, Retirement, Mortality and Disability	6,149
6. Other Items	79,709
7. Total	\$75,038
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D7)	
	\$787,737
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	
	\$0
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	
	\$0
H. UAAL AT END OF YEAR (E+F+G)	
	\$787,737

PUBLIC EMPLOYEES RETIREMENT FUND
 DETERMINATION OF CONTRIBUTION SUFFICIENCY
 (DOLLARS IN THOUSANDS)

TABLE 11A
 BASIC

JULY 1, 1985

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 353		
1. Employee Contributions	8.00%	\$12,380
2. Employer Contributions	10.50%	16,248
	-----	-----
3. Total	18.50%	\$28,628
	=====	=====
 B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	4.07%	\$6,294
b. Disability Benefits	0.43%	673
c. Survivors	1.57%	2,437
d. Deferred Retirement Benefits	1.88%	2,902
e. Refunds Due to Death or Withdrawal	1.92%	2,970
	-----	-----
f. Total	9.87%	\$15,276
	-----	-----
2. Supplemental Contribution Amortization by July 1, 2009 of UAAL of \$787,737	25.84%	\$39,987
3. Allowance for Expenses	0.35%	\$542
	-----	-----
4. Total	36.06%	\$55,805
 C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) (A3-B4)		
	-17.56%	(\$27,177)

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1985 is \$154,747

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 12A
BASIC

PROJECTED CASH FLOW
(DOLLARS IN THOUSANDS)

<u>FISCAL YEAR</u>	<u>STATUTORY CONTRIBUTIONS</u>	<u>TRANSFERS TO MPRIF</u>	<u>OTHER DISBURSEMENTS</u>	<u>INVESTMENT RETURN</u>	<u>NON-MPRIF ASSETS YEAR END</u>
1985					\$22,576
1986	\$28,628	\$25,002	\$10,888	\$1,516	16,830
1987	25,733	97,854	11,243	(1,988)	(68,522)
1988	24,321	27,863	11,593	(6,087)	(89,744)
1989	23,477	39,038	11,957	(8,280)	(125,542)
1990	22,495	46,636	12,328	(11,502)	(173,513)
1991	21,401	54,404	12,667	(15,708)	(234,891)
1992	20,081	65,923	12,958	(21,143)	(314,834)
1993	18,954	60,431	13,184	(27,373)	(396,868)
1994	17,613	70,371	13,413	(34,396)	(497,435)
1995	16,387	67,698	13,552	(42,389)	(604,687)
1996	15,166	69,665	13,713	(51,103)	(724,002)
1997	13,549	89,771	13,821	(61,522)	(875,567)
1998	12,034	87,005	13,746	(73,594)	(1,037,878)
1999	10,759	79,233	13,643	(86,315)	(1,206,310)
2000	9,577	76,265	13,549	(99,714)	(1,386,261)
2001	8,112	89,612	13,392	(114,697)	(1,595,850)
2002	6,760	87,034	13,046	(131,401)	(1,820,571)
2003	5,483	84,395	12,632	(149,307)	(2,061,422)
2004	4,411	73,999	12,147	(168,183)	(2,311,340)
2005	3,627	57,931	11,675	(187,546)	(2,564,865)
2006	2,921	55,419	11,260	(207,740)	(2,836,363)
2007	2,118	60,457	10,790	(229,674)	(3,135,166)
2008	1,515	49,959	10,204	(253,159)	(3,446,973)
2009	911	50,929	9,636	(278,144)	(3,784,771)
2010	501	38,173	7,584	(304,592)	(4,134,619)

PUBLIC EMPLOYEES RETIREMENT FUND

**TABLE 14A
BASIC**

SUMMARY OF PLAN PROVISIONS

Eligibility	A public employee who is not covered under the Social Security Act. General exceptions are employees covered by other public funds and certain part-time employees. City managers and persons holding elective office may choose to become members.
Contributions Member	8% of Salary.
Employer	10.5% of Salary.
Allowable Service	Service during which member contributions were deducted. May also include certain leaves of absence, military service, and service prior to membership.
Salary	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes lump sum payments at separation and Workers' Compensation benefits.
Average Salary	Average of the 5 highest successive years of Salary.

RETIREMENT

Normal Retirement Benefit

Eligibility Age 65 and 10 years of Allowable Service.
Age 62 and 30 years of Allowable Service.
Rule of 90: Age plus Allowable Service totals 90.
Rule of 85: Age 55 and age plus Allowable Service totals 85 and retirement prior to 1/1/87.

Amount 2% of Average Salary for the first 10 years of Allowable Service and 2.5% of Average Salary for each subsequent year.

Early Retirement Benefit

Eligibility Age 55 and 10 years of Allowable Service.
Any age with 30 years of Allowable Service.

Amount Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.25% for each month the member is under age 65 at time of retirement (age 62 if 30 years of Allowable Service).

**TABLE 14A
BASIC
(cont)**

Form of Payment	Life annuity with return on death of any balance of contributions over aggregate monthly payments. Actuarially equivalent options are: 50% or 100% joint and survivor 50% or 100% bounce back joint and survivor (option is cancelled if Member is pre-deceased by beneficiary)
Benefit Increases	Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF).
DISABILITY	
Disability Benefit Eligibility	Total and permanent disability before age 65 with 5 years of Allowable Service if age 50 or older, or with 10 years of Allowable Service if younger than age 50.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at disability without reduction for commencement before age 65. Supplemental benefit of \$5 per month for each year under age 65 at commencement of disability (maximum of \$50 per month). Benefit is reduced by Workers' Compensation. Payments stop at age 65, or earlier if disability ceases or death occurs. Benefits may be reduced on resumption of partial employment.
Form of Payment	Same as for retirement.
Benefit Increases	Adjusted by PERA to provide same increase as MPRIF.
Retirement After Disability Eligibility	Age 65 with continued disability.
Amount	Any optional annuity continues. Otherwise the larger of the disability benefit paid before age 65 or the normal retirement benefit available at age 65, or an actuarially equivalent optional annuity.
Benefit Increases	Same as for retirement.
DEATH	
Surviving Spouse Benefit Eligibility	Active Member with 18 months of Allowable Service or Member receiving a disability benefit.

**TABLE 14A
BASIC
(cont)**

Amount	50% of Salary averaged over last 6 months. Maximum family benefit is \$1,000 per month. Benefits paid until spouse's death but no payments while spouse is remarried. Surviving spouse optional annuity may be elected in lieu of this benefit.
Surviving Dependent Children's Benefit Eligibility	Active Member with 18 months of Allowable Service or Member receiving a disability benefit.
Amount	10% of Salary averaged over last 6 months for each child. Family benefit minimum (including spouse's benefit) of 50% of Salary and maximum of \$1,000 per month. Benefits paid until child marries, dies, or attains age 18 (age 22 if full time student).
Surviving Spouse Optional Annuity Eligibility	Member or former Member who dies before retirement or disability benefits commence if age 55 with 10 years of Allowable Service or any age with 30 years of Allowable Service.
Amount	Survivor's payment of the 100% joint and survivor benefit the member could have elected if terminated.
Benefit Increases	Adjusted by PERA to provide same increase as MPRIF.
Refund of Contributions Eligibility	Member dies before receiving any retirement benefits and survivor benefits are not payable.
Amount	The excess of the Member's contributions with 5% interest over any disability or survivor benefits paid.
TERMINATION	
Refund of Contributions Eligibility	Termination of public service.
Amount	Member's contributions with 5% interest. A deferred annuity may be elected in lieu of a refund.
Deferred Benefit Eligibility	10 years of Allowable Service.

TABLE 14A
BASIC
(cont)

Amount

Benefit computed under law in effect at termination and increased by the following annual percentage: 0% before 7/1/71, 5% from 7/1/71 to 1/1/81, and 3% thereafter until the annuity begins. Amount is payable as a normal or early retirement.

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 15A
BASIC

MEMBERSHIP CHANGES
(DOLLARS IN THOUSANDS)

JUNE 30, 1985

A. ACTIVE MEMBERS	<u>NUMBER</u>	<u>PAYROLL</u>
1. As of the Last Valuation Date	7,830	\$162,341
2. New Entrants	25	NA
3. Total	7,855	NA
4. Separations from Active Service		
a. Refund of Contributions	(28)	NA
b. Separation with Deferred Annuity	(9)	NA
c. Separation with neither Refund nor Deferred Annuity	(215)	NA
d. Disability	(45)	NA
e. Death	(24)	NA
f. Retirement with Service Annuity	(835)	NA
5. Total Separations	(1,156)	NA
6. Data Adjustments	(45)	NA
7. As of Current Valuation Date	6,654	\$145,291
B. SERVICE RETIREMENT ANNUITANTS	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	10,557	\$53,642
2. New Entrants	745	NA
3. Total	11,302	NA
4. Terminations		
a. Deaths	(148)	NA
b. Others	0	NA
5. Total Terminations	(148)	NA
6. Data Adjustments	105	NA
7. As of Current Valuation Date	11,259	\$65,982
C. DISABLED ANNUITANTS	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	348	\$2,398
2. New Entrants	35	NA
3. Total	383	NA
4. Terminations		
a. Deaths	(17)	NA
b. Others	0	NA
5. Total Terminations	(17)	NA
6. Data Adjustments	(30)	NA
7. As of Current Valuation Date	336	\$2,535

TABLE 15A
BASIC
(cont)

	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
D. SURVIVING SPOUSE ANNUITANTS		
1. As of the Last Valuation Date	3,391	\$8,165
2. New Entrants	193	NA
3. Total	3,584	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	(85)	NA
7. As of Current Valuation Date	3,499	\$9,116
E. SURVIVING CHILDREN ANNUITANTS		
1. As of the Last Valuation Date	49	\$197
2. New Entrants	0	NA
3. Total	49	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	18	NA
7. As of Current Valuation Date	67	\$270
F. DEFERRED ANNUITANTS		
1. As of the Last Valuation Date	718	NA
2. New Entrants	66	NA
3. Total	784	NA
4. Terminations		
a. Deaths	(3)	NA
b. Others	(124)	NA
5. Total Terminations	(127)	NA
6. Data Adjustments	71	NA
7. As of Current Valuation Date	728	\$1,364

PUBLIC EMPLOYEES RETIREMENT FUND

COORDINATED

REPORT HIGHLIGHTS
(DOLLARS IN THOUSANDS)

	<u>06/30/84</u> <u>VALUATION</u>	<u>07/01/85</u> <u>VALUATION</u>
A. CONTRIBUTIONS (TABLE 11B)		
1. Statutory Contributions - Chapter 353 % of Payroll	8.25%	8.25%
2. Required Contributions - Chapter 356 % of Payroll	5.49%	5.45%
3. Sufficiency (Deficiency) (A1-A2)	2.76%	2.80%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 2)	NA	\$1,140,290
b. Current Benefit Obligations (Table 8B)	NA	\$896,057
c. Funding Ratio (a/b)	NA	127.26%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 2)	\$916,777	\$1,140,290
b. Actuarial Accrued Liability (Table 9B)	\$868,492	\$1,123,712
c. Funding Ratio (a/b)	105.56%	101.48%
3. Projected Benefit Funding Ratio (Table 8B)		
a. Current and Expected Future Assets	\$1,545,310	\$2,312,370
b. Current and Expected Future Benefit Obligations	\$1,284,031	\$1,613,223
c. Funding Ratio (a/b)	120.35%	143.34%
C. PLAN PARTICIPANTS		
1. Active Members (Table 3B)		
a. Number	75,872	79,658
b. Projected Annual Earnings	\$1,063,284	\$1,269,164
c. Average Annual Earnings (Actual \$)	\$14,014	\$15,933
d. Average Age	NA	41.1
e. Average Service	NA	6.8
2. Others		
a. Service Retirements (Table 4B)	5,208	6,018
b. Disability Retirements (Table 5B)	290	318
c. Survivors (Table 6B)	225	288
d. Deferred Retirements (Table 7B)	1,125	1,135
e. Terminated Other Non-vested (Table 7B)	NA	30,030
f. Total	6,848	37,789

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 3B
COORDINATED

ACTIVE MEMBERS AS OF JUNE 30, 1985

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	1,968	2,757	297						5,022
25-29	1,903	4,678	3,337	190					10,108
30-34	1,753	4,355	4,740	1,772	76				12,696
35-39	1,674	3,974	4,095	2,430	608	6			12,787
40-44	1,422	3,071	3,367	1,941	847	58	1		10,707
45-49	713	2,010	2,839	2,109	897	111	37	2	8,718
50-54	429	1,484	2,214	2,040	1,089	143	85	18	7,502
55-59	303	1,084	1,780	1,939	1,175	164	98	71	6,614
60-64	127	573	1,132	1,284	824	130	62	58	4,190
65+	53	241	428	372	177	19	11	13	1,314
TOTAL	10,345	24,227	24,229	14,077	5,693	631	294	162	79,658

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	7,746	11,459	14,297						10,172
25-29	9,610	14,447	16,662	17,085					14,317
30-34	9,193	15,079	19,272	19,873	20,690				16,534
35-39	8,219	13,653	18,703	23,554	24,821	16,131			16,973
40-44	7,362	12,321	15,723	20,160	24,832	28,742	25,748		15,233
45-49	7,786	11,921	14,138	16,001	20,926	29,320	30,198	23,671	14,520
50-54	7,637	11,393	13,866	15,068	18,395	31,097	32,276	26,411	14,572
55-59	7,606	10,829	13,682	15,216	17,458	25,041	29,401	35,373	14,804
60-64	6,424	9,581	12,852	14,655	17,120	23,807	25,847	29,501	14,364
65+	5,146	6,895	8,824	9,732	12,620	15,659	19,497	23,326	9,422
ALL	8,323	13,072	16,271	17,849	19,911	26,885	29,200	31,164	14,967

PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE

	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
	86,096	316,701	394,241	251,255	113,353	16,964	8,585	5,049	1,192,244

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 4B
COORDINATED

SERVICE RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS RETIRED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59	62	33						95
60-64	294	582	7					883
65-69	238	1,836	233	3				2,310
70-74	42	368	1,234	28				1,672
75-79	4	60	156	491	4			715
80-84	1	9	18	134	125			287
85+		1	6	10	37		2	56
TOTAL	641	2,889	1,654	666	166	0	2	6,018

AVERAGE ANNUAL ANNUITY

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59	3,788	5,166						4,267
60-64	3,286	2,898	3,360					3,031
65-69	2,628	2,140	2,618	1,656				2,238
70-74	1,752	1,557	2,277	4,203				2,138
75-79	635	852	1,707	2,137	2,486			1,929
80-84	825	702	957	1,699	1,564			1,559
85+		478	1,269	2,626	2,254		3,408	2,224
ALL	2,969	2,221	2,258	2,141	1,740	0	3,408	2,289

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
1,903	6,417	3,735	1,426	289	0	7	13,777

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 5B
COORDINATED

DISABILITY RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS DISABLED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	5	11	1					17
50-54	8	20	4	2				34
55-59	18	51	22		1			92
60-64	25	94	47	3	1			170
65-69	3	2						5
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	59	178	74	5	2	0	0	318

AVERAGE ANNUAL BENEFIT

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	2,878	2,306	739					2,382
50-54	2,489	2,063	1,978	1,549				2,123
55-59	2,102	2,363	1,445		1,553			2,084
60-64	2,681	2,135	1,919	797	583			2,123
65-69	2,010	2,974						2,395
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	2,461	2,212	1,765	1,098	1,068	0	0	2,130

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS OF DISABILITY

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
145	394	131	5	2	0	0	677

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 6B
COORDINATED

SURVIVORS AS OF JUNE 30, 1985

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	2	9	1					12
50-54	1	4	2					7
55-59	5	24	4	3				36
60-64	3	31	15	1				50
65-69	1	29	36	13				79
70-74	1	5	29	20	3			58
75-79		2	11	16	2			31
80-84			2	5	3			10
85+					4		1	5
TOTAL	13	104	100	58	12	0	1	288

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	3,587	2,712	541					2,677
50-54	3,639	3,746	1,737					3,156
55-59	2,696	1,569	1,700	1,895				1,767
60-64	1,381	1,914	1,256	1,015				1,667
65-69	3,347	1,680	1,944	1,343				1,766
70-74	2,730	795	1,812	1,880	2,336			1,791
75-79		5,040	1,539	1,669	2,976			1,925
80-84			786	3,322	1,048			2,133
85+					1,743		1,262	1,647
ALL	2,655	1,915	1,707	1,812	1,923	0	1,262	1,853

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
35	199	171	105	23	0	1	534

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 7B
COORDINATED

RECONCILIATION OF MEMBERS

	<u>ACTIVES</u>	<u>TERMINATED</u>	
		<u>DEFERRED RETIREMENT</u>	<u>OTHER NON-VESTED</u>
A. On June 30, 1984	75,872	1,125	NA
B. Additions	13,658	103	NA
C. Deletions:			
1. Service Retirement	(750)	(49)	
2. Disability	(75)		
3. Death	(117)	(4)	
4. Terminated-Deferred	(36)		
5. Terminated-Refund	(5,652)	(51)	NA
6. Terminated-Other Non-vested	(3,140)		
7. Returned as Active		0	NA
D. Data Adjustments	(102)	11	NA
	Vested	20,857	
	Non-Vested	58,801	
E. Total on June 30, 1985	79,658	1,135	30,030

	<u>RECIPIENTS</u>		
	<u>RETIREMENT ANNUITANTS</u>	<u>DISABLED</u>	<u>SURVIVORS</u>
A. On June 30, 1984	5,208	290	225
B. Additions	704	62	41
C. Deletions:			
1. Service Retirement		0	
2. Death	0	(16)	0
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	
D. Data Adjustments	106	(18)	22
E. Total on June 30, 1985	6,018	318	288

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 8B
COORDINATED

ACTUARIAL BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1985

A. CURRENT ASSETS (TABLE 2, K3)				\$1,140,290
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Supplemental Contributions				682,569
2. Present Value of Future Normal Costs				489,511
3. Total Expected Future Assets				1,172,080
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				\$2,312,370
D. CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>		<u>Total</u>
1. Benefit Recipients				
a. Retirement Annuities		\$141,072		\$141,072
b. Disability Benefits		4,040		4,040
c. Surviving Spouse's Benefits		5,654		5,654
d. Surviving Children's Benefits		0		0
2. Deferred Retirements with Future Augmentation		5,712		5,712
3. Former Members without Vested Rights		9,806		9,806
4. Active Members				
a. Retirement Annuities	101,345	313,648		414,993
b. Disability Benefits	9,154	23,721		32,875
c. Survivors' Benefits	7,346	26,705		34,051
d. Deferred Retirements	67,446	100,411		167,857
e. Refund Liability Due to Death or Withdrawal	55,211	24,786		79,997
5. Total Current Benefit Obligations	\$240,502	\$655,555		\$896,057
E. EXPECTED FUTURE BENEFIT OBLIGATIONS				\$717,166
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				\$1,613,223
G. CURRENT UNFUNDED LIABILITY (D5-A)				(\$244,233)
H. CURRENT AND FUTURE UNFUNDED LIABILITY (F-C)				(\$699,147)

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 9B
COORDINATED

DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
AND SUPPLEMENTAL CONTRIBUTION RATE
(DOLLARS IN THOUSANDS)

JULY 1, 1985

	ACTUARIAL PRESENT VALUE OF PROJECTED BENEFITS <u>(1)</u>	ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COSTS <u>(2)</u>	ACTUARIAL ACCRUED LIABILITY <u>(3)=(1)-(2)</u>
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$895,833	\$254,697	\$641,136
b. Disability Benefits	65,390	18,937	46,453
c. Survivors Benefits	70,920	18,937	51,983
d. Deferred Retirements	296,857	102,257	194,600
e. Refunds Due to Death or Withdrawal	117,940	94,683	23,257
f. Total	<u>\$1,446,940</u>	<u>\$489,511</u>	<u>\$957,429</u>
2. Deferred Retirements with Future Augmentation	\$5,712		\$5,712
3. Former Members Without Vested Rights	9,806		9,806
4. Annuitants in MPRIF	142,285		142,285
5. Recipients Not in MPRIF	8,480		8,480
6. Total AAL	<u>\$1,613,223</u>	<u>\$489,511</u>	<u>\$1,123,712</u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$1,123,712
2. Current Assets (Table 2, K3)			1,140,290
3. UAAL (B1-B2)			<u>(\$16,578)</u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls to the Amortization Date of July 1, 2009			\$25,002,532
2. Supplemental Contribution Rate (B3/C1)			-0.07%

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 10B
COORDINATED

CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
(DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1985

A. UAAL AT BEGINNING OF YEAR	(\$48,285)
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$68,231
2. Contribution	(99,898)
3. Interest on A, B1, and B2	(5,129)

4. Total (B1+B2+B3)	(\$36,796)

C. EXPECTED UAAL AT END OF YEAR (A+B4)	(\$85,081)
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	\$28,742
2. Investment Return	(68,034)
3. MPRIF Mortality	1,094
4. Mortality of Other Benefit Recipients	(340)
5. Active Members' Turnover, Retirement, Mortality and Disability	23,265
6. Other Items	83,776

7. Total	\$68,503

E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D7)	(\$16,578)
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	\$0
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	\$0

H. UAAL AT END OF YEAR (E+F+G)	(\$16,578)
	=====

PUBLIC EMPLOYEES RETIREMENT FUND
 DETERMINATION OF CONTRIBUTION SUFFICIENCY
 (DOLLARS IN THOUSANDS)

TABLE 11B
 COORDINATED

JULY 1, 1985

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 353		
1. Employee Contributions	4.00%	\$50,767
2. Employer Contributions	4.25%	53,939
	-----	-----
3. Total	8.25%	\$104,706
	=====	=====
 B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	2.69%	\$34,158
b. Disability Benefits	0.20%	2,514
c. Survivors	0.20%	2,547
d. Deferred Retirement Benefits	1.08%	13,690
e. Refunds Due to Death or Withdrawal	1.00%	12,653
	-----	-----
f. Total	5.17%	\$65,562
	-----	-----
2. Supplemental Contribution Amortization by July 1, 2009 of UAAL of \$(16,578)	-0.07%	(\$888)
3. Allowance for Expenses	0.35%	\$4,442
	-----	-----
4. Total	5.45%	\$69,116
 C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) (A3-B4)		
	2.80%	\$35,590

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1985 is \$1,269,164

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 12B
COORDINATED

PROJECTED CASH FLOW
(DOLLARS IN THOUSANDS)

<u>FISCAL YEAR</u>	<u>STATUTORY CONTRIBUTIONS</u>	<u>TRANSFERS TO MPRIF</u>	<u>OTHER DISBURSEMENTS</u>	<u>INVESTMENT RETURN</u>	<u>NON-MPRIF ASSETS YEAR END</u>
1985					\$998,004
1986	\$104,706	\$4,818	\$23,696	\$82,888	1,157,084
1987	113,633	54,680	21,546	94,063	1,288,554
1988	122,395	22,720	20,567	106,249	1,473,911
1989	131,431	31,898	20,251	121,084	1,674,277
1990	141,093	40,460	20,103	137,163	1,891,970
1991	151,404	46,936	20,382	154,721	2,130,777
1992	162,454	52,735	21,071	174,008	2,393,433
1993	174,099	59,883	22,194	195,156	2,680,611
1994	186,562	68,358	23,720	218,228	2,993,323
1995	199,746	75,004	25,060	243,453	3,336,458
1996	213,749	81,761	26,860	271,122	3,712,708
1997	228,803	96,141	29,006	301,163	4,117,527
1998	244,744	99,130	31,441	333,969	4,565,669
1999	261,570	125,435	34,210	369,331	5,036,925
2000	279,411	129,394	36,854	407,481	5,557,569
2001	298,504	149,530	39,909	448,968	6,115,602
2002	318,744	160,181	43,239	493,861	6,724,787
2003	340,228	165,906	46,955	543,078	7,395,232
2004	362,980	216,348	50,992	595,444	8,086,316
2005	387,051	239,502	55,120	650,602	8,829,347
2006	412,629	255,080	59,617	710,265	9,637,544
2007	439,893	284,177	64,457	774,654	10,503,457
2008	468,817	300,137	69,677	844,237	11,446,697
2009	499,603	399,070	75,176	916,750	12,388,804
2010	532,286	425,201	80,597	992,164	13,407,456

PUBLIC EMPLOYEES RETIREMENT FUND

**TABLE 14B
COORDINATED**

SUMMARY OF PLAN PROVISIONS

Eligibility	A public employee who is covered under the Social Security Act. General exceptions are employees covered by other public funds and certain part-time employees. City managers and persons holding elective office may choose to become members.
Contributions Member	4% of Salary.
Employer	4.25% of Salary.
Allowable Service	Service during which member contributions were deducted. May also include certain leaves of absence, military service, and service prior to membership.
Salary	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes lump sum payments at separation and Workers' Compensation benefits.
Average Salary	Average of the 5 highest successive years of Salary.

RETIREMENT

Normal Retirement Benefit

Eligibility Age 65 and 10 years of Allowable Service.
Age 62 and 30 years of Allowable Service.
Rule of 90: Age plus Allowable Service totals 90.
Rule of 85: Age 55 and age plus Allowable Service totals 85 and retirement prior to 1/1/87.

Amount 1% of Average Salary for the first 10 years of Allowable Service and 1.5% of Average Salary for each subsequent year.

Early Retirement Benefit

Eligibility Age 55 and 10 years of Allowable Service.
Any age with 30 years of Allowable Service.

Amount Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.25% for each month the member is under age 65 at time of retirement (age 62 if 30 years of Allowable Service).

**TABLE 14B
COORDINATED
(cont)**

Form of Payment Life annuity with return on death of any balance of contributions over aggregate monthly payments. Actuarially equivalent options are:
 50% or 100% joint and survivor
 50% or 100% bounce back joint and survivor (option is cancelled if Member is pre-deceased by beneficiary).

Benefit Increases Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF).

DISABILITY

Disability Benefit Eligibility Total and permanent disability before age 65 with 5 years of Allowable Service if age 50 or older, or with 10 years of Allowable Service if younger than age 50.

Amount Normal Retirement Benefit based on Allowable Service and Average Salary at disability without reduction for commencement before age 65. Benefit is reduced by Workers' Compensation.

Payments stop at age 65, or earlier if disability ceases or death occurs. Benefits may be reduced on resumption of partial employment.

Form of Payment Same as for retirement.

Benefit Increases Adjusted by PERA to provide same increase as MPRIF.

Retirement After Disability Eligibility Age 65 with continued disability.

Amount Any optional annuity continues. Otherwise the larger of the disability benefit paid before age 65 or the normal retirement benefit available at age 65, or an actuarially equivalent optional annuity.

Benefit Increases Same as for retirement.

DEATH

Surviving Spouse Optional Annuity Eligibility Member or former Member who dies before retirement or disability benefits commence if age 55 with 10 years of Allowable Service or any age with 30 years of Allowable Service.

TABLE 14B
COORDINATED
(cont)

Amount	Survivor's payment of the 100% joint and survivor benefit the member could have elected if terminated.
Benefit Increases	Adjusted by PERA to provide same increase as MPRIF.
Refund of Contributions Eligibility	Member dies before receiving any retirement benefits and survivor benefits are not payable.
Amount	The excess of the Member's contributions with 5% interest over any disability or survivor benefits paid.
TERMINATION	
Refund of Contributions Eligibility	Termination of public service.
Amount	Member's contributions with 5% interest. A deferred annuity may be elected in lieu of a refund.
Deferred Benefit Eligibility	10 years of Allowable Service.
Amount	Benefit computed under law in effect at termination and increased by the following annual percentage: 0% before 7/1/71, 5% from 7/1/71 to 1/1/81, and 3% thereafter until the annuity begins. Amount is payable as a normal or early retirement.

PUBLIC EMPLOYEES RETIREMENT FUND

TABLE 15B
COORDINATED

MEMBERSHIP CHANGES
(DOLLARS IN THOUSANDS)

JUNE 30, 1985

	<u>NUMBER</u>	<u>PAYROLL</u>
A. ACTIVE MEMBERS		
1. As of the Last Valuation Date	75,872	\$1,063,284
2. New Entrants	13,658	NA
3. Total	89,530	NA
4. Separations from Active Service		
a. Refund of Contributions	(5,652)	NA
b. Separation with Deferred Annuity	(36)	NA
c. Separation with neither Refund nor Deferred Annuity	(3,140)	NA
d. Disability	(75)	NA
e. Death	(117)	NA
f. Retirement with Service Annuity	(750)	NA
5. Total Separations	(9,770)	NA
6. Data Adjustments	(102)	NA
7. As of Current Valuation Date	79,658	\$1,192,244
B. SERVICE RETIREMENT ANNUITANTS	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	5,208	\$10,779
2. New Entrants	704	NA
3. Total	5,912	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	106	NA
7. As of Current Valuation Date	6,018	\$13,777
C. DISABLED ANNUITANTS	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
1. As of the Last Valuation Date	290	\$505
2. New Entrants	62	NA
3. Total	352	NA
4. Terminations		
a. Deaths	(16)	NA
b. Others	0	NA
5. Total Terminations	(16)	NA
6. Data Adjustments	(18)	NA
7. As of Current Valuation Date	318	\$677

TABLE 15B
COORDINATED
(cont)

	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
D. SURVIVING SPOUSE ANNUITANTS		
1. As of the Last Valuation Date	225	\$379
2. New Entrants	41	NA
3. Total	266	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	22	NA
7. As of Current Valuation Date	288	\$534
E. SURVIVING CHILDREN ANNUITANTS		
1. As of the Last Valuation Date	0	\$0
2. New Entrants	0	NA
3. Total	0	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	0	NA
7. As of Current Valuation Date	0	\$0
F. DEFERRED ANNUITANTS		
1. As of the Last Valuation Date	1,125	NA
2. New Entrants	103	NA
3. Total	1,228	NA
4. Terminations		
a. Deaths	(4)	NA
b. Others	(100)	NA
5. Total Terminations	(104)	NA
6. Data Adjustments	11	NA
7. As of Current Valuation Date	1,135	\$729

PUBLIC EMPLOYEES POLICE AND FIRE FUND

ACTUARIAL VALUATION REPORT

JULY 1, 1985

 **FILE COPY**

DEC 23 1985 LCP&R

December 2, 1985

Legislative Commission on
Pensions and Retirement
55 State Office Building
St. Paul, Minnesota 55155

RE: PUBLIC EMPLOYEES POLICE AND FIRE FUND

Gentlemen:

We have prepared an actuarial valuation of the Fund as of July 1, 1985 based on membership and financial data supplied by the Fund.

We certify that to the best of our knowledge and belief this actuarial valuation was performed in accordance with the requirements of Section 356.215, Minnesota Statutes, and the requirements of the Standards for Actuarial Work, adopted by the Commission on June 11, 1985.

Respectfully submitted,

THE WYATT COMPANY


Allan J. Grosh
Vice President


Robert E. Perkins
Consulting Actuary

PUBLIC EMPLOYEES POLICE AND FIRE FUND

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PUBLIC EMPLOYEES POLICE AND FIRE FUND

**REPORT HIGHLIGHTS
(DOLLARS IN THOUSANDS)**

	<u>06/30/84</u> <u>VALUATION</u>	<u>07/01/85</u> <u>VALUATION</u>
A. CONTRIBUTIONS (TABLE 11)		
1. Statutory Contributions - Chapter 353 % of Payroll	20.00%	20.00%
2. Required Contributions - Chapter 356 % of Payroll	16.92%	18.32%
3. Sufficiency (Deficiency) (A1-A2)	3.08%	1.68%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	NA	\$338,400
b. Current Benefit Obligations (Table 8)	NA	\$352,356
c. Funding Ratio (a/b)	NA	96.04%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$279,757	\$338,400
b. Actuarial Accrued Liability (Table 9)	\$306,817	\$382,998
c. Funding Ratio (a/b)	91.18%	88.36%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$579,925	\$719,219
b. Current and Expected Future Benefit Obligations	\$538,257	\$673,023
c. Funding Ratio (a/b)	107.74%	106.86%
C. PLAN PARTICIPANTS		
1. Active Members (Table 3)		
a. Number	4,744	4,928
b. Projected Annual Earnings	\$117,881	\$139,222
c. Average Annual Earnings (Actual \$)	\$24,848	\$28,251
d. Average Age	NA	37.2
e. Average Service	NA	9.4
2. Others		
a. Service Retirements (Table 4)	715	765
b. Disability Retirements (Table 5)	44	54
c. Survivors (Table 6)	242	279
d. Deferred Retirements (Table 7)	175	163
e. Terminated Other Non-vested (Table 7)	NA	350
f. Total	1,176	1,611

PUBLIC EMPLOYEES POLICE AND FIRE FUND

COMMENTARY

Purpose

The purpose of this valuation is to determine the financial status of the Fund. In order to achieve this purpose, an actuarial valuation is made at the beginning of each fiscal year as required by Section 356.215 of Minnesota Statutes.

Report Highlights

The statutory contributions for the PERA Police and Fire Fund continue to be sufficient. The margin of sufficiency has decreased from 3.08% in 1984 to 1.68% in 1985. According to this valuation a contribution rate of 18.32% is required to comply with Minnesota Law.

The financial status of the Fund can be measured by three different funding ratios:

- o The Accrued Benefit Funding Ratio is a measure of current funding status, and when viewed over a period of years, presents a view of the funding progress. This ratio is based on recently published Governmental Accounting Standards Board proposals. This year's ratio is 96.04%. The corresponding ratio for the prior year was not calculated.

- o The Accrued Liability Funding Ratio is also a measure of funding status and funding progress. It is based on the actuarial cost method that has historically been used. For 1985 the ratio is 88.36%, which is a decrease from the 1984 value of 91.18%.

- o The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This ratio exceeds 100% and verifies that the current statutory contributions are adequate.

The following table summarizes the impact of the benefit changes since the 1984 valuation:

	<u>Before Changes</u>	<u>After Changes</u>
Required Contributions	17.92%	18.32%
Accrued Benefit Funding Ratio	96.78%	96.04%
Accrued Liability Funding Ratio	89.45%	88.36%
Projected Benefit Funding Ratio	108.04%	106.86%

Asset Information

Beginning in 1984, changes in Section 356.215 of Minnesota Statutes require that the asset value used for actuarial purposes reflect a portion of the unrealized gains and losses. Only a portion of these gains and losses are considered because market values are typically volatile and could produce erratic changes in the contribution requirements from year to year.

)

The calculation of assets for actuarial purposes begins with the reporting of Total Assets by the Fund (Table 1, line B). These Total Assets, reduced by any Amounts Currently Payable (line C), produce the Assets Available for Benefits (line D5), which is the starting value for determining the Actuarial Value of Assets.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines F1 to F6. It combines the cost value and one-third of the difference between market value and cost value.

)

The term "Actuarial Value of Assets" is used to indicate that the value was determined for use in this actuarial valuation. Since Minnesota Statutes refer to this value as "Current Assets", the latter phrase will be used in the remainder of this report.

Since this Fund participates in the Minnesota Post Retirement Investment Fund, referred to as MPRIF, the asset value shown on line A3 is initially calculated by the State Board of Investment(SBI), and is the expected amount of MPRIF participation assuming the Fund earns 5% interest. The actual amount is determined by calculating the liability based on annuitant information supplied by the Fund. If the actual liability is larger than expected, the difference is labelled a mortality loss and if smaller a gain.

)

Investment performance by SBI above the 5% level is not shown in the assets but will be added in on January 1, 1986 when benefits will be increased for those annuitants who have been receiving payments for 18 months. Next year's

) valuation will include the 1986 benefit increase in determining the MPRIF value.

Membership Data

Tables 3 through 6 summarize statistical information on members by category. Active members are grouped by age and completed years of service in Table 3. The earnings shown for these members are for the prior fiscal year except in the case of new hires where earnings have been annualized.

The service retirements in Table 4 include not only those retiring from active status but also disabled members who have attained retirement age. Disabled members under retirement age are shown in Table 5. The survivors category (Table 6) includes spouses and children of deceased members.

Actuarial Balance Sheet

) An actuarial balance sheet is required by Section 356.215, Subdivision 4f of Minnesota Law. This balance sheet (Table 8) establishes a method for evaluating both current and future levels of funding.

Current funding levels are evaluated by comparing Current Assets on line A to Current Benefit Obligations on line D5. The difference between the obligations and the assets is shown as Current Unfunded Liability on line G.

) The measurement of the Current Benefit Obligation is based on the Proposed Statement of Governmental Accounting Standards published by the Governmental Accounting Standards Board (GASB) in August 1985. This value is known as the

Actuarial Present Value of Credited Projected Benefits.

The first step in the GASB calculation for active members involves projecting salaries and service to determine future benefits payable under the plan and then discounting those projected benefits to the date of the valuation. The second step is to determine the discounted value of benefits for the non-active members. For those non-active members whose benefits have not commenced, the liability includes augmentation of benefits to date of commencement. The result of the first two steps is shown on line F, Total Current and Expected Future Benefit Obligations.

The third step is to determine the portion that represents Current Benefit Obligations. In the case of active members the Current Benefit Obligation is computed by attributing an equal benefit amount to each year of credited and expected future employee service. For all others, their entire liability is considered a Current Benefit Obligation.

Current and future funding levels are evaluated by comparing Current and Future Expected Assets on line C to Current and Expected Future Benefit Obligations on line F. The difference between the obligations and the assets is shown as the Current and Future Unfunded Liability on line H.

Since line F has already been calculated, the remaining step is to determine the Expected Future Assets. The statutory contribution rate in excess of the combined normal cost rate and expense rate is first calculated. The amount of assets for line B1 can be determined by projecting from the valuation date to the amortization date (the date for paying off all unfunded liabilities) on the

) assumption that total payroll is increasing at 6.5% annually and then discounted to the date of the valuation.

The Current Unfunded Liability, line G, is a measurement of the status of the funding to the date of the valuation. The Current and Future Unfunded Liability is a measurement of the adequacy of the current statutory contribution level.

Contribution Sufficiency

The approach used by the State of Minnesota to determine contribution sufficiency is the Entry Age Normal Cost Method. The primary characteristic of this method is that it allocates costs as a level percentage of payroll.

) A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) shows similarities and differences. The similarity is that both approaches calculate the value of all future benefits the same way. This can be verified by comparing line F of Table 8 to line A6, column 1, of Table 9. The difference arises from the technique for allocating liabilities between past and future. As noted in the prior section, the balance sheet allocates benefits and the corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll.

) An Unfunded Actuarial Accrued Liability is computed under the Entry Age Normal Cost Method by comparing the liabilities allocated to past service (Actuarial Accrued Liability) to the Current Assets. This amount, line B3, is funded over the remaining years to the amortization date by a series of payments. Prior to

1984 these payments were calculated to be a level dollar amount similar to a fixed interest rate mortgage. The method of funding was changed in 1984 to produce a series of payments that remain a constant percentage of payroll each year.

Under this new approach the payments will increase 6.5% each year since that is the assumed rate of increase in payroll. Although the payment schedule will be adequate to amortize the existing unfunded, the lower payments in the earlier years will not be sufficient to cover the interest on the unfunded liability. After a few years the annual payment will begin to cover not only the interest but also repay a portion of the unfunded.

Projected Cash Flow

Table 12 illustrates the anticipated cash flow over the amortization period. The cash flow begins with the Non-MPRIF Assets, which are the Current Assets reduced by the MPRIIF Reserves. Contributions are then added based on the present statutory rates for employers and employees. As members become eligible for payments from MPRIIF an amount of reserve is transferred to SBI. The other disbursements represent benefit payments made directly by the Fund.

This projected cash flow assumes that future payrolls increase by 6.5%. For purposes of this table only, new members are assumed to be hired in order to replace those who terminate from the active group. This open group method provides a more realistic picture of future cash flow. The statutory interest rate of 8% is used to project future investment return.

) The amounts transferred to MPRIF will be affected by the number of members who reach the assumed retirement age during a given year. The amount for 1987 is large because it includes those already over age 60 who are assumed to retire a year from the valuation date.

Plan Provisions

Two plan changes since the last valuation increased the Unfunded Actuarial Accrued Liability by \$4,703,000.

) The surviving spouse optional annuity was changed from the 50% to the 100% joint and survivor annuity the member could have elected. Another change was the improved duty disability benefit for years of service between 20 and 25.

TABLE 1

PUBLIC EMPLOYEES POLICE AND FIRE FUND

ACCOUNTING BALANCE SHEET
(DOLLARS IN THOUSANDS)

July 1, 1985

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS		
1. Cash and Cash Equivalents	\$15,183	\$15,183
2. Investments		
a. Fixed Income	73,332	71,603
b. Equity	175,502	155,665
c. Real Estate	15,279	13,630
3. Equity in Minnesota Post-Retirement Investment Fund (MPRIF)	74,286	74,286
4. Other	639	639
	-----	-----
B. TOTAL ASSETS	\$354,221	\$331,006
	=====	=====
C. AMOUNTS CURRENTLY PAYABLE	\$344	\$344
D. ASSETS AVAILABLE FOR BENEFITS		
1. Member Reserves	\$66,628	\$66,628
2. Benefit Reserves	212,963	189,748
3. MPRIF Reserves	74,286	74,286
4. Non-MPRIF Reserves	0	0
	-----	-----
5. Total Assets Available for Benefits	\$353,877	\$330,662
	-----	-----
E. TOTAL AMOUNTS CURRENTLY PAYABLE AND ASSETS AVAILABLE FOR BENEFITS	\$354,221	\$331,006
	=====	=====
F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Cost Value of Assets Available for Benefits (D5)		\$330,662
2. Market Value (D5)	\$353,877	
3. Cost Value (D5)	330,662	

4. Market Over Cost (F2-F3)	\$23,215	
5. 1/3 of Market Over Cost(F4)/3		7,738

6. Actuarial Value of Assets (F1+F5) (Same as "Current Assets")		\$338,400
		=====

TABLE 2

PUBLIC EMPLOYEES POLICE AND FIRE FUND
 CHANGES IN ASSETS AVAILABLE FOR BENEFITS
 (DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1985

	<u>MARKET VALUE</u>	<u>COST VALUE</u>
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$272,171	\$283,231
B. OPERATING REVENUES		
1. Member Contributions	\$10,530	\$10,530
2. Employer Contributions	15,747	15,747
3. Investment Income	22,958	22,958
4. MPRIF Income	6,988	6,988
5. Net Realized Gain (Loss)	0	0
6. Other	394	394
7. Net Change in Unrealized Gain (Loss)	34,275	0
	-----	-----
8. Total Revenue	\$90,892	\$56,617
	-----	-----
C. OPERATING EXPENSES		
1. Service Retirements	\$6,451	\$6,451
2. Disability Benefits	427	427
3. Survivor Benefits	738	738
4. Refunds	1,032	1,032
5. Expenses	613	613
6. Other	0	0
	-----	-----
7. Total Disbursements	\$9,261	\$9,261
	-----	-----
D. OTHER CHANGES IN RESERVES	75	75
E. ASSETS AVAILABLE AT END OF PERIOD	\$353,877	\$330,662
	=====	=====

TABLE 3

PUBLIC EMPLOYEES POLICE AND FIRE FUND

ACTIVE MEMBERS AS OF JUNE 30, 1985

AGE	YEARS OF SERVICE								TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	111	187	2						300
25-29	96	489	298	2					885
30-34	48	268	579	234	3				1,132
35-39	24	150	293	445	101				1,013
40-44	20	53	83	175	253	20			604
45-49	6	24	52	92	158	79	11		422
50-54	4	19	25	54	93	81	36	6	318
55-59	1	11	18	26	37	32	25	21	171
60-64		4	3	11	21	15	9	7	70
65+			1	3	3	4	1	1	13
TOTAL	310	1,205	1,354	1,042	669	231	82	35	4,928

AVERAGE ANNUAL EARNINGS

AGE	YEARS OF SERVICE								ALL
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	
<25	13,774	20,787	24,183						18,215
25-29	16,594	23,667	26,400	28,467					23,831
30-34	16,676	24,923	27,854	27,871	27,668				26,689
35-39	14,967	24,224	27,732	29,871	30,940				28,170
40-44	8,262	18,616	27,016	29,020	31,265	34,387			28,262
45-49	19,879	12,692	24,259	28,518	30,579	32,698	31,558		28,604
50-54	13,537	18,699	24,248	24,544	30,446	32,203	32,274	32,696	28,739
55-59	25,000	18,316	21,400	27,943	29,249	30,122	33,766	33,856	28,886
60-64		27,708	23,405	26,193	25,567	25,403	29,707	28,958	26,531
65+			14,084	33,547	22,998	21,907	28,052	45,738	26,549
ALL	14,985	23,015	27,140	28,804	30,596	31,653	32,300	33,017	26,527

PRIOR FISCAL YEAR EARNINGS (IN THOUSANDS) BY YEARS OF SERVICE

	<1	1-4	5-9	10-14	15-19	20-24	25-29	30+	TOTAL
	4,645	27,733	36,747	30,014	20,469	7,312	2,649	1,156	130,725

TABLE 4

PUBLIC EMPLOYEES POLICE AND FIRE FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS RETIRED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59	31	105		1				137
60-64	16	89	85					190
65-69	5	62	90	36				193
70-74	2	7	75	40	3			127
75-79		1	11	43	8			63
80-84				8	25	5		38
85+				2	8	7		17
TOTAL	54	264	261	130	44	12	0	765

AVERAGE ANNUAL ANNUITY

AGE	YEARS RETIRED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50								0
50-54								0
55-59	11,745	12,302		2,034				12,101
60-64	9,719	9,627	9,176					9,433
65-69	5,782	7,118	9,500	5,894				7,966
70-74	6,786	4,039	6,681	5,794	3,911			6,192
75-79		1,114	4,915	5,132	4,160			4,907
80-84				6,683	4,016	3,151		4,464
85+				4,508	4,808	3,893		4,396
ALL	10,409	9,921	8,391	5,609	4,179	3,584	0	8,271

TOTAL ANNUAL ANNUITY (IN THOUSANDS) BY YEARS OF RETIREMENT

<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
562	2,619	2,190	729	184	43	0	6,327

TABLE 5

PUBLIC EMPLOYEES POLICE AND FIRE FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1985

AGE	YEARS DISABLED							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	5	14	11	1				31
50-54	3	9	9	1				22
55-59			1					1
60-64								0
65-69								0
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	8	23	21	2	0	0	0	54

AVERAGE ANNUAL BENEFIT

AGE	YEARS DISABLED							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	12,442	8,666	8,899	4,036				9,208
50-54	12,850	10,699	6,213	3,407				8,826
55-59			7,993					7,993
60-64								0
65-69								0
70-74								0
75-79								0
80-84								0
85+								0
TOTAL	12,595	9,462	7,705	3,722	0	0	0	9,030

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS OF DISABILITY								
<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL	
101	218	162	7	0	0	0	488	

TABLE 6

PUBLIC EMPLOYEES POLICE AND FIRE FUND

SURVIVORS AS OF JUNE 30, 1985

AGE	YEARS SINCE DEATH							TOTAL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	4	19	11	6	8			48
50-54	2	6	10	3	2			23
55-59	1	10	9	10	2	1		33
60-64		5	8	9	4			26
65-69	1	5	19	14	5	6		50
70-74	1	2	8	9	9	2		31
75-79	2	5	7	9	6	3		32
80-84	1	3	5	6	2	1		18
85+		2	4	5	2	5		18
TOTAL	12	57	81	71	40	18	0	279

AVERAGE ANNUAL BENEFIT

AGE	YEARS SINCE DEATH							ALL
	<1	1-4	5-9	10-14	15-19	20-24	25+	
<50	7,336	7,744	5,800	4,762	1,258			5,811
50-54	9,509	8,092	4,775	2,500	2,607			5,566
55-59	296	6,683	4,698	3,153	1,497	2,838		4,448
60-64		5,671	5,594	4,316	1,792			4,581
65-69	1,776	5,647	4,146	4,358	1,464	1,421		3,713
70-74	1,232	1,652	5,624	2,981	1,465	1,496		2,985
75-79	1,879	2,174	2,228	1,924	1,629	1,478		1,930
80-84	2,236	1,683	2,117	2,352	821	1,492		1,951
85+		1,953	1,854	1,924	1,950	2,311		2,022
ALL	4,805	6,004	4,394	3,315	1,531	1,769	0	3,886

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH							
<1	1-4	5-9	10-14	15-19	20-24	25+	TOTAL
58	342	356	235	61	32	0	1,084

TABLE 7

PUBLIC EMPLOYEES POLICE AND FIRE FUND
RECONCILIATION OF MEMBERS

	<u>ACTIVES</u>	<u>TERMINATED</u>	
		<u>DEFERRED RETIREMENT</u>	<u>OTHER NON-VESTED</u>
A. On June 30, 1984	4,744	175	NA
B. Additions	475	12	NA
C. Deletions:			
1. Service Retirement	(61)	(9)	
2. Disability	(9)		
3. Death	(7)	(4)	
4. Terminated-Deferred	(4)		
5. Terminated-Refund	(93)	(5)	
6. Terminated-Other Non-vested	(112)		
7. Returned as Active		(6)	NA
D. Data Adjustments	(5)	0	NA
	Vested	2,059	
	Non-Vested	2,869	
E. Total on June 30, 1985	4,928	163	350

	<u>RECIPIENTS</u>		
	<u>RETIREMENT ANNUITANTS</u>	<u>DISABLED</u>	<u>SURVIVORS</u>
A. On June 30, 1984	715	44	242
B. Additions	70	9	0
C. Deletions:			
1. Service Retirement		0	
2. Death	0	0	0
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	
D. Data Adjustments	(20)	1	37
E. Total on June 30, 1985	765	54	279

TABLE 8

PUBLIC EMPLOYEES POLICE AND FIRE FUND

ACTUARIAL BALANCE SHEET
(DOLLARS IN THOUSANDS)

JULY 1, 1985

A. CURRENT ASSETS (TABLE 1, F6)				\$338,400
B. EXPECTED FUTURE ASSETS				
1. Present Value of Expected Future Supplemental Contributions				90,794
2. Present Value of Future Normal Costs				290,025
3. Total Expected Future Assets				380,819
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS				\$719,219
D. CURRENT BENEFIT OBLIGATIONS	<u>Non-Vested</u>	<u>Vested</u>		<u>Total</u>
1. Benefit Recipients				
a. Retirement Annuities		\$71,302		\$71,302
b. Disability Benefits		4,465		4,465
c. Surviving Spouse's Benefits		12,445		12,445
d. Surviving Children's Benefits		589		589
2. Deferred Retirements with Future Augmentation		3,353		3,353
3. Former Members without Vested Rights		1,369		1,369
4. Active Members				
a. Retirement Annuities	27,663	139,210		166,873
b. Disability Benefits	5,246	15,908		21,154
c. Survivors' Benefits	6,426	16,179		22,605
d. Deferred Retirements	12,299	20,116		32,415
e. Refund Liability Due to Death or Withdrawal	8,766	7,020		15,786
5. Total Current Benefit Obligations	\$60,400	\$291,956		\$352,356
E. EXPECTED FUTURE BENEFIT OBLIGATIONS				\$320,667
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS				\$673,023
G. CURRENT UNFUNDED LIABILITY (D5-A)				\$13,956
H. CURRENT AND FUTURE UNFUNDED LIABILITY (F-C)				(\$46,196)

TABLE 9

PUBLIC EMPLOYEES POLICE AND FIRE FUND

DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
AND SUPPLEMENTAL CONTRIBUTION RATE
(DOLLARS IN THOUSANDS)

JULY 1, 1985

	ACTUARIAL PRESENT VALUE OF PROJECTED BENEFITS <u>(1)</u>	ACTUARIAL PRESENT VALUE OF FUTURE NORMAL COSTS <u>(2)</u>	ACTUARIAL ACCRUED LIABILITY <u>(3)=(1)-(2)</u>
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	\$400,148	\$177,197	\$222,951
b. Disability Benefits	45,553	23,245	22,308
c. Survivors Benefits	46,781	28,967	17,814
d. Deferred Retirements	58,471	35,225	23,246
e. Refunds Due to Death or Withdrawal	28,548	25,391	3,157
f. Total	<u>\$579,501</u>	<u>\$290,025</u>	<u>\$289,476</u>
2. Deferred Retirements with Future Augmentation	\$3,353		\$3,353
3. Former Members Without Vested Rights	1,369		1,369
4. Annuitants in MPRIF	74,286		74,286
5. Recipients Not in MPRIF	14,514		14,514
6. Total AAL	<u>\$673,023</u>	<u>\$290,025</u>	<u>\$382,998</u>
B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)			
1. AAL (A6)			\$382,998
2. Current Assets (Table 1,F6)			338,400
3. UAAL (B1-B2)			<u>\$44,598</u>
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE			
1. Present Value of Future Payrolls to the Amortization Date of July 1, 2009			\$2,742,677
2. Supplemental Contribution Rate (B3/C1)			1.63%

TABLE 10

PUBLIC EMPLOYEES POLICE AND FIRE FUND
 CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)
 (DOLLARS IN THOUSANDS)

YEAR ENDING JUNE 30, 1985

A. UAAL AT BEGINNING OF YEAR	\$27,060
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	\$20,845
2. Contribution	(26,277)
3. Interest on A, B1, and B2	1,948
4. Total (B1+B2+B3)	(\$3,484)
C. EXPECTED UAAL AT END OF YEAR (A+B4)	
	\$23,576
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	\$9,012
2. Investment Return	(16,743)
3. MPRIF Mortality	126
4. Mortality of Other Benefit Recipients	524
5. Active Members' Turnover, Retirement, Mortality and Disability	42
6. Expenses and Other Items	23,358
7. Total	\$16,319
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTIONS (C+D7)	
	\$39,895
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	
	\$4,703
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	
	\$0
H. UAAL AT END OF YEAR (E+F+G)	
	\$44,598

TABLE 11

PUBLIC EMPLOYEES POLICE AND FIRE FUND
DETERMINATION OF CONTRIBUTION SUFFICIENCY
(DOLLARS IN THOUSANDS)

JULY 1, 1985

	<u>% OF PAYROLL</u>	<u>\$ AMOUNT</u>
A. STATUTORY CONTRIBUTIONS - CHAPTER 353		
1. Employee Contributions	8.00%	\$11,138
2. Employer Contributions	12.00%	16,707
3. Total	----- 20.00% =====	----- \$27,845 =====
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	9.91%	\$13,784
b. Disability Benefits	1.30%	1,812
c. Survivors	1.62%	2,255
d. Deferred Retirement Benefits	1.97%	2,742
e. Refunds Due to Death or Withdrawal	1.42%	1,983
f. Total	----- 16.22% -----	----- \$22,576 -----
2. Supplemental Contribution Amortization by July 1, 2009 of UAAL of \$44,598	1.63%	\$2,269
3. Allowance for Expenses	0.47%	\$654
4. Total	----- 18.32%	----- \$25,499
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) (A3-B4)	1.68%	\$2,346

Note: Projected Annual Payroll for Fiscal Year Beginning on July 1, 1985 is \$139,222

TABLE 12

PUBLIC EMPLOYEES POLICE AND FIRE FUND

PROJECTED CASH FLOW
(DOLLARS IN THOUSANDS)

<u>FISCAL YEAR</u>	<u>STATUTORY CONTRIBUTIONS</u>	<u>TRANSFERS TO MPRIF</u>	<u>OTHER DISBURSEMENTS</u>	<u>INVESTMENT RETURN</u>	<u>NON-MPRIF ASSETS YEAR END</u>
1985					\$264,114
1986	\$27,927	\$3,349	\$2,675	\$22,005	308,022
1987	\$29,737	18,144	2,899	24,990	341,706
1988	\$31,665	7,548	3,092	28,177	390,908
1989	\$33,635	5,255	3,281	32,277	448,284
1990	\$35,821	7,906	3,475	36,840	509,564
1991	\$38,149	10,331	3,712	41,729	575,399
1992	\$40,629	11,529	3,970	47,037	647,566
1993	\$43,270	19,361	4,328	52,589	719,736
1994	\$46,082	19,670	4,683	58,448	799,913
1995	\$49,078	20,846	5,098	64,918	887,965
1996	\$52,268	21,241	5,644	72,053	985,401
1997	\$55,665	22,537	6,080	79,914	1,092,363
1998	\$59,283	33,084	6,576	88,174	1,200,160
1999	\$63,137	37,593	7,174	96,748	1,315,278
2000	\$67,241	43,489	7,808	105,860	1,437,082
2001	\$71,611	47,004	8,479	115,612	1,568,822
2002	\$76,266	50,626	9,175	126,164	1,711,451
2003	\$81,224	71,763	9,774	136,904	1,848,042
2004	\$86,503	69,220	10,477	148,116	2,002,964
2005	\$92,126	81,876	11,178	160,200	2,162,236
2006	\$98,114	92,137	11,925	172,741	2,329,029
2007	\$104,491	109,385	12,742	185,617	2,497,010
2008	\$111,283	150,339	13,488	197,659	2,642,125
2009	\$118,517	137,565	14,281	210,037	2,818,833
2010	\$126,220	157,803	14,700	223,655	2,996,205

PUBLIC EMPLOYEES POLICE AND FIRE FUND
SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:	Pre-Retirement: 8% per annum Post-Retirement: 5% per annum
Salary Increases:	Reported salary for prior fiscal year, with new hires annualized, increased 6.5% to current fiscal year and 6.5% annually for each future year.
Mortality:	Pre-Retirement: Male - UP-1984 Unisex set forward 1 year Female - UP-1984 Unisex set back 4 years Post-Retirement: Male - Same as above Female - Same as above Post-Disability: Male - 1965 RRB rates Female - 1965 RRB rates
Retirement Age:	Age 60, or if over age 60, one year from the valuation date. In addition, 50% of employees are assumed to retire under the Rule of 85 when first eligible.
Separation:	Graded rates shown in rate table.
Disability:	Rates as shown in rate table.
Expenses:	Prior year expenses expressed as percentage of prior year payroll. (0.47% of payroll)
Return of Contributions:	All employees withdrawing after 10 years of service were assumed to leave their contributions on deposit and receive a deferred annuitant benefit.
Family Composition:	85% of male members and 65% of female members are assumed to be married. Female is four years younger than male. Assume members have no children.
Social Security:	NA
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 5% accounted for by 5% post-retirement assumptions.
Special Consideration:	NA

TABLE 13
(cont)

Actuarial Cost Method:	Entry Age Normal Cost Method with normal costs expressed as a level percentage of earnings. Under this method Actuarial Gains(Losses) reduce(increase) the Unfunded Actuarial Accrued Liability.
Asset Valuation Method:	Cost Value plus one-third Unrealized Gains or Losses.
Payment on the Unfunded Actuarial Accrued Liability:	A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 6.5% per annum.
Projected Cash Flow Method:	Cash flows for the non-MPRIF portion of the Fund were projected based on the current plan benefits, participant data, and actuarial assumptions. In addition, new entrants were assumed so that the total payroll would increase by 6.5% per annum.

TABLE 13
(cont)

SEPARATIONS EXPRESSED AS THE
NUMBER OF OCCURRENCES PER 10,000

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
20	13	14	700	700	11	11	0	0
21	12	14	700	700	11	11	0	0
22	12	14	700	700	12	12	0	0
23	11	14	699	699	12	12	0	0
24	11	13	698	698	13	13	0	0
25	11	13	697	697	13	13	0	0
26	11	12	694	694	14	14	0	0
27	11	12	689	689	14	14	0	0
28	11	11	680	680	15	15	0	0
29	11	11	670	670	15	15	0	0
30	11	11	658	658	15	15	0	0
31	12	11	643	643	16	16	0	0
32	12	11	624	624	17	17	0	0
33	13	11	598	598	17	17	0	0
34	14	11	561	561	18	18	0	0
35	15	11	511	511	19	19	0	0
36	16	12	454	454	20	20	0	0
37	18	12	395	395	22	22	0	0
38	19	13	336	336	23	23	0	0
39	21	14	287	287	24	24	0	0
40	23	15	245	245	26	26	0	0
41	26	16	213	213	28	28	0	0
42	28	18	185	185	29	29	0	0
43	31	19	160	160	31	31	0	0
44	34	21	137	137	34	34	0	0
45	38	23	118	118	36	36	0	0
46	42	26	102	102	40	40	0	0
47	46	28	87	87	46	46	0	0
48	51	31	73	73	52	52	0	0
49	56	34	61	61	60	60	0	0
50	62	38	50	50	69	69	0	0
51	69	42	39	39	80	80	0	0
52	75	46	29	29	91	91	0	0
53	83	51	22	22	104	104	0	0
54	90	56	15	15	119	119	0	0

TABLE 13
(cont)

Age	Death		Withdrawal		Disability		Retirement	
	Male	Female	Male	Female	Male	Female	Male	Female
55	99	62	11	11	135	135	0	0
56	108	69	7	7	152	152	0	0
57	119	75	5	5	171	171	0	0
58	130	83	3	3	192	192	0	0
59	142	90	1	1	215	215	0	0
60	155	99	0	0	0	0	10,000	10,000
61	170	108	0	0	0	0	0	0
62	187	119	0	0	0	0	0	0
63	205	130	0	0	0	0	0	0
64	226	142	0	0	0	0	0	0
65	248	155	0	0	0	0	0	0
66	272	170	0	0	0	0	0	0
67	296	187	0	0	0	0	0	0
68	321	205	0	0	0	0	0	0
69	347	226	0	0	0	0	0	0
70	377	248	0	0	0	0	0	0

PUBLIC EMPLOYEES POLICE AND FIRE FUND

SUMMARY OF PLAN PROVISIONS

Eligibility	All full time, and certain part time, police officers and fire fighters, who are not contributing to any other local retirement fund.
Contributions	
Member	8% of Salary.
Employer	12% of Salary plus \$82,904 from the University of Minnesota on 7/1/85, 7/1/86, and 7/1/87.
Allowable Service	Police and fire service during which member contributions were deducted. May also include certain leaves of absence, military service, and service prior membership.
Salary	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes lump sum payments at separation and Workers' Compensation benefits.
Average Salary	Average of the 5 highest successive years of Salary.
RETIREMENT	
Normal Retirement Benefit	
Eligibility	Age 55 and 10 years of Allowable Service.
Amount	2.5% of Average Salary for the first 25 years of Allowable Service and 2.0% of Average Salary for each subsequent year.
Form of Payment	Life annuity with return on death of any balance of contributions over aggregate monthly payments. Actuarially equivalent options are: 50% or 100% joint and survivor 50% or 100% bounce back joint and survivor (option is cancelled if Member is pre-deceased by beneficiary).
Benefit Increases	Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF).

TABLE 14
(cont)

DISABILITY

Duty Disability Benefit
Eligibility

Under age 55 and physically unfit to perform his duties as a police officer or fire fighter as a direct result of an act of duty.

Amount

50% of Average Salary plus 2.5% of Average Salary for each year in excess of 20, but not exceeding 25 years of Allowable Service plus 2.0% of Average Salary for each year in excess of 25 years of Allowable Service. Benefit is reduced by Workers' Compensation. Payments cease at age 55.

Normal Disability Benefit
Eligibility

Totally and permanently disabled before age 55 with 5 years of Allowable Service.

Amount

Normal Retirement Benefit based on Allowable Service (minimum of 10 years) and Average Salary at disability without reduction for commencement before age 55. Payments cease at age 55.

Form of Payment

Same as for retirement.

Benefit Increases

Adjusted by PERA to provide same increase as MPRIF.

Retirement Benefits
Eligibility

Age 55 with continued disability.

Amount

Any optional annuity continues. Otherwise the larger of the disability benefit paid before age 55 or the normal retirement benefit available at age 55, or an actuarially equivalent optional annuity.

Benefit Increases

Same as for retirement.

DEATH

Surviving Spouse Benefit
Eligibility

Active Member with surviving spouse.

Amount

30% of Salary averaged over last 6 months. Benefit paid until spouse's death but no payments while spouse is remarried.

Surviving Dependent
Child Benefit
Eligibility

Active Member with dependent child.

**TABLE 14
(cont)**

Amount	10% of Salary averaged over last 6 months for each child. Family benefit minimum (including spouse's benefit) of 30% of Salary and maximum of 50% of Salary. Benefits paid until child marries, dies, or attains age 18.
Surviving Spouse Optional Annuity	
Eligibility	Member who dies before termination if age 55 with 10 years of Allowable Service.
Amount	Survivor's payment of the 100% joint and survivor benefit the member could have elected if terminated. Alternatively, spouse may elect refund of deceased contributions with interest if there are no dependent children.
Benefit Increases	Adjusted by PERA to provide same increase as MPRIF.
TERMINATION	
Refund of Contributions	
Eligibility	Termination of public service.
Amount	Member's contributions with 5% interest compounded annually. A deferred annuity may be elected in lieu of a refund.
Deferred Annuity	
Eligibility	10 years of Allowable Service.
Amount	Benefit computed under law in effect at termination and increased by the following annual percentage: 0% before 7/1/71, 5% from 7/1/71 to 1/1/81, and 3% thereafter until the annuity begins. Amount is payable as a normal or early retirement.

TABLE 15

PUBLIC EMPLOYEES POLICE AND FIRE FUND

MEMBERSHIP CHANGES
(DOLLARS IN THOUSANDS)

JUNE 30, 1985

	<u>NUMBER</u>	<u>PAYROLL</u>
A. ACTIVE MEMBERS		
1. As of the Last Valuation Date	4,744	\$117,881
2. New Entrants	475	NA
3. Total	5,219	NA
4. Separations from Active Service		
a. Refund of Contributions	(93)	NA
b. Separation with Deferred Annuity	(4)	NA
c. Separation with neither Refund nor Deferred Annuity	(112)	NA
d. Disability	(9)	NA
e. Death	(7)	NA
f. Retirement with Service Annuity	(61)	NA
5. Total Separations	(286)	NA
6. Data Adjustments	(5)	NA
7. As of Current Valuation Date	4,928	\$130,725
B. SERVICE RETIREMENT ANNUITANTS		
1. As of the Last Valuation Date	715	\$5,233
2. New Entrants	70	NA
3. Total	785	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	(20)	NA
7. As of Current Valuation Date	765	\$6,327
C. DISABLED ANNUITANTS		
1. As of the Last Valuation Date	44	\$369
2. New Entrants	9	NA
3. Total	53	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	1	NA
7. As of Current Valuation Date	54	\$488

TABLE 15
(cont)

	<u>NUMBER</u>	<u>ANNUAL ANNUITY</u>
D. SURVIVING SPOUSE ANNUITANTS		
1. As of the Last Valuation Date	229	\$926
2. New Entrants	0	NA
3. Total	229	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	36	NA
7. As of Current Valuation Date	265	\$1,022
E. SURVIVING CHILDREN ANNUITANTS		
1. As of the Last Valuation Date	13	\$64
2. New Entrants	0	NA
3. Total	13	NA
4. Terminations		
a. Deaths	0	NA
b. Others	0	NA
5. Total Terminations	0	NA
6. Data Adjustments	1	NA
7. As of Current Valuation Date	14	\$62
F. DEFERRED ANNUITANTS		
1. As of the Last Valuation Date	175	NA
2. New Entrants	12	NA
3. Total	187	NA
4. Terminations		
a. Deaths	(4)	NA
b. Others	(20)	NA
5. Total Terminations	(24)	NA
6. Data Adjustments	0	NA
7. As of Current Valuation Date	163	\$293