# Public Employees Retirement Fund ACTUARIAL VALUATION REPORT

JULY 1, 1994



MILLIMAN & ROBERTSON, INC.

LCP & R NOV - 9 1994



#### MILLIMAN & ROBERTSON, INC.

Actuaries and Consultants

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November 7, 1994

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

#### **RE:** Public Employees Retirement Fund

**Commission Members:** 

Pursuant to the terms of our Actuarial Services Contract, we have performed an actuarial valuation of the Fund as of July 1, 1994.

The results of our calculations are set forth in the following report, as are the actuarial assumptions upon which our calculations have been made. We have relied on the basic employee data and asset figures as submitted by the Public Employees Retirement Fund.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared 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 July 8, 1992.

Respectfully submitted,

K Cut

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#### **COORDINATED**

# **Report Highlights**

(dollars in thousands)

		07/01/93 Valuation	07/01/94 Valuation
A.	CONTRIBUTIONS (Table 11)		
	<ol> <li>Statutory Contributions - Chapter 353</li> <li>% of Payroll</li> </ol>	9.04%	8.90%
	<ol> <li>Required Contributions - Chapter 356</li> <li>% of Payroll</li> </ol>	9.58%	9.76%
	3. Sufficiency (Deficiency): (A.1 A.2.)	-0.54%	-0.86%
В.	FUNDING RATIOS 1. Accrued Benefit Funding Ratio		
	a. Current Assets (Table 1)	\$4,374,459	\$4,747,128
	b. Current Benefit Obligations (Table 8)	\$5,163,767	\$5,625,598
	c. Funding Ratio: (a/b)	84.71%	84.38%
	2. Accrued Liability Funding Ratio		
	a. Current Assets (Table 1)	\$4,374,459	\$4,747,128
	b. Actuarial Accrued Liability (Table 9)	\$5,784,318	\$6,223,622
	c. Funding Ratio: (a/b)	75.63%	76.28%
	3. Projected Benefit Funding Ratio (Table 8)		
	a. Current and Expected Future Assets	\$6,899,439	\$7,232,704
	b. Current and Expected Future Benefit Obligations	\$7,192,321	\$7,681,359
	c. Funding Ratio: (a/b)	95.93%	94.16%
C.	PLAN PARTICIPANTS 1. Active Members		
	a. Number (Table 3)	114,932	120,199
	b. Projected Annual Earnings	\$2,578,604	\$2,749,217
	c. Average Annual Earnings (Actual \$)	\$22,436	\$22,872
	d. Average Age	43.2	43.1
	e. Average Service	8.9	8.0
	2. Others		
	a. Service Retirements (Table 4)	28,279	30,414
	b. Disability Retirements (Table 5)	794	871
	c. Survivors (Table 6)	4,895	5,091
	d. Deferred Retirements (Table 7)	5,402	6,277
	e. Terminated Other Non-vested (Table 7)	9,307	9,180
	f. Total	48,677	51,833

### Commentary

#### Purpose

The purpose of this valuation is to determine the financial status of the Plan. 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 financial status of the Plan can be measured by three different funding ratios:

- <sup>o</sup> 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. It is based upon benefits which have been earned by service to the valuation date. This year's ratio is 84.38%. The corresponding ratio for the prior year was 84.71%.
- <sup>o</sup> 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 by the State. For 1994 the ratio is 76.28%, which is an increase from the 1993 value of 75.63%.
- <sup>o</sup> The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 94.16% shows that the current statutory contributions are inadequate.

#### Asset Information (Tables 1 and 2)

Minnesota Statutes require that the asset value used for actuarial purposes recognize only a third of the unrealized gains and losses. This requirement exists because market values (which include all unrealized gain and losses) are typically volatile and can produce erratic changes in the contribution requirements from year to year.

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

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.

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#### MILLIMAN & ROBERTSON, INC.

This Plan participates in the Minnesota Post Retirement Investment Fund (i.e. MPRIF). After the MPRIF liability has been calculated for each participating Plan, the State Board of Investments, (i.e. SBI), will determine each Plan's portion of the excess earnings for the January benefit increase as well as the Plan's allocated market share of MPRIF.

#### Actuarial Balance Sheet (Table 8)

An actuarial balance sheet provides a method for evaluating current and future levels of funding.

The Current Benefit Obligation used to measure current funding levels is calculated in accordance with Statement No. 5 of the Governmental Accounting Standards Board (GASB). Those requirements are:

- <sup>o</sup> For Active Members salary and service are projected to retirement to determine benefits for each member and the ratio of credited service to total service establishes the portion of the projected benefit to be used in calculating the current funding level.
- ° For Non-active Members the discounted value of benefits, including augmentation in cases where benefits have not commenced.

#### GASB Disclosure

The Current Benefit Obligation amounts in Table 8 are required to be disclosed by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 uses the terms "Actuarial Present Value of Credited Projected Benefits" and "Pension Benefit Obligation" rather than "Current Benefit Obligation".

The JULY 1, 1994 Pension Benefit Obligation reported in Table 8 is reformatted for GASB reporting purposes in the following table:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	\$3,027,087,000
Current Employees	
Accumulated employee contributions including allocated investment income	\$793,249,000
Employer-financed vested	1,602,766,000
Employer-financed nonvested	202,496,000
Total Pension Benefit Obligation	\$5,625,598,000
Net Assets Available for Benefits at Cost	\$4,733,845,000
Total Benefit Obligation less Assets	\$891,753,000
Funded Ratio	84.15%

#### Actuarial Cost Method (Table 9)

The approach used by the State of Minnesota to determine contribution sufficiency is the Entry Age Normal Actuarial 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) illustrates the two techniques for allocating liabilities of active Members to 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. Both approaches, however, calculate the value of all future benefits the same way (see line F of Table 8 and line A6, column 1, of Table 9).

An Unfunded Actuarial Accrued Liability is computed under the Entry Age Normal Actuarial 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 that remain a constant percentage of payroll each year.

The payments will increase 6.5% each year because 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 cover the interest and also repay a portion of the unfunded.

#### Sources of Actuarial Gains and Losses (Table 10)

The assumptions used in making the calculations using the Entry Age Normal Actuarial Cost Method are based on long-term expectations. Each year the actual experience will deviate from the long-term expectation. For a detailed analysis of the major components, refer to Table 10.

#### Contribution Sufficiency (Table 11)

This report determines the adequacy of Statutory Contributions by comparing the Statutory Contributions to the Required Contributions.

The Required Contributions, set forth in Chapter 356, consist of:

<sup>°</sup>Normal costs based on the Entry Age Normal Actuarial Cost Method.

°A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.

<sup>°</sup>An Allowance for Expenses.

Table 11 shows the Plan has a contribution deficiency since the Statutory Contribution Rate is 8.90% compared to the Required Contribution Rate of 9.76%.

#### Changes in Actuarial Assumptions

Mortality rates were updated to the 1983 Group Annuity Mortality table, salary increases were changed to a select and ultimate table and payroll growth was changed from 6.5% to 6%. These changes were made to reflect experience of the plan. The table below illustrates the impact of these assumption changes on key results:

		Without Assumption Changes	With Assumption Changes
Α.	CONTRIBUTIONS (Table 11) 1. Statutory Contributions - Chapter 353 % of Payroll	8.90%	8.90%
	<ol> <li>Required Contributions - Chapter 356</li> <li>% of Payroll</li> </ol>	9.58%	9.76%
	3. Sufficiency (Deficiency): (A.1 A.2.)	-0.68%	-0.86%
в.	FUNDING RATIOS 1. Accrued Benefit Funding Ratio a. Current Assets (Table 1) b. Current Benefit Obligations (Table 8) c. Funding Ratio: (a/b)	\$4,747,128 \$5,569,002 85.24%	4,747,128 5,625,598 84.38%
	<ol> <li>Accrued Liability Funding Ratio         <ul> <li>Current Assets (Table 1)</li> <li>Actuarial Accrued Liability (Table 9)</li> <li>Funding Ratio: (a/b)</li> </ul> </li> </ol>	\$4,747,128 \$6,175,933 76.86%	4,747,128 6,223,622 76.28%
	<ul> <li>3. Projected Benefit Funding Ratio (Table 8)</li> <li>a. Current and Expected Future Assets</li> <li>b. Current and Expected Future Benefit Obligations</li> <li>c. Funding Ratio: (a/b)</li> </ul>	\$7,317,379 \$7,689,238 95.16%	7,232,704 7,681,359 94.16%

#### **Changes in Plan Provisions**

There were no changes in plan provisions since the last valuation which impacted funding costs.

## Accounting Balance Sheet

(dollars in thousands)

## JULY 1, 1994

		Market Value	Cost Value
A.	ASSETS		
	1. Cash, Equivalents, Short-term Securities	\$70,272	\$70,272
	2. Investments		
	a. Fixed Income	597,707	622,504
	b. Equity	1,346,286	1,273,227
	c. Real Estate	89,561	97,973
	3. Equity in Minnesota Post-Retirement	2,770,552	2,770,552
	Investment Fund (MPRIF)		
	4. Other	1,099	1,099
B.	TOTAL ASSETS	\$4,875,477	\$4,835,627
			<u> </u>
C.	AMOUNTS CURRENTLY PAYABLE	\$101,782	\$101,782
		+ <b>,</b>	<i><i><i>41011102</i></i></i>
D.	ASSETS AVAILABLE FOR BENEFITS		
	1. Member Reserves	\$834,418	\$834,418
	2. Employer Reserves	1,168,725	1,128,875
	3. MPRIF Reserves	2,770,552	2,770,552
	4. Non-MPRIF Reserves	2,770,002	2,770,002
	5. Total Assets Available for Benefits	\$4,773,695	\$4,733,845
E.	TOTAL AMOUNTS CURRENTLY PAYABLE	\$4,875,477	\$4,835,627
	AND ASSETS AVAILABLE FOR BENEFITS		41,000,027

## F. DETERMINATION OF ACTUARIAL VALUE OF ASSETS

<ol> <li>Cost Value of Assets Available for Benefits (D5)</li> </ol>		\$4,733,845
2. Market Value (D5)	\$4,773,695	
3. Cost Value (D5)	4,733,845	
4. Market Over Cost: (F2-F3)	\$39,850	
5. 1/3 of Market Over Cost: (F4)/3	· · · · ·	13,283
6. Actuarial Value of Assets (F1+F5)	_	\$4,747,128
(Same as "Current Assets")	=	

# Change In Assets Available For Benefits

(dollars in thousands)

## YEAR ENDING JUNE 30, 1994

		Market Value	Cost Value
A.	ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$4,515,052	\$4,304,163
B.	OPERATING REVENUES		
	<ol> <li>Member Contributions</li> <li>Employer Contributions</li> <li>Investment Income</li> <li>MPRIF Income</li> <li>Net Realized Gain (Loss)</li> <li>Other</li> <li>Net Change in Unrealized Gain (Loss)</li> <li>Total Revenue</li> </ol>	\$112,940 119,390 224,906 251,991 0 3,567 (170,156) \$542,638	\$112,940 119,390 224,906 251,991 0 3,567 0 \$712,794
C.	OPERATING EXPENSES	<del></del>	\$/12,/94
	<ol> <li>Service Retirements</li> <li>Disability Benefits</li> <li>Survivor Benefits</li> <li>Refunds</li> <li>Investment Fees</li> <li>Administrative Expenses</li> <li>Other</li> </ol>	\$244,913 5,960 13,360 11,336 3,131 4,397 898	\$244,913 5,960 13,360 11,336 3,131 4,397 15
	8. Total Disbursements	\$283,995	\$283,112
D.	OTHER CHANGES IN RESERVES	0	0
E.	ASSETS AVAILABLE AT END OF PERIOD	\$4,773,695	\$4,733,845

## ACTIVE MEMBERS AS OF JUNE 30, 1994

				YEARS O	F SERVIC	E			
AGE	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25-29</u>	<u>30+</u>	ALL
<25 25-29	1,482 2,095	1,860 5,163	32 1,453	1 43				1	3,375 8,755
30-34 35-39	1,799 2,005	5,955 7,139	4,347 5,175	1,488 3,136	78 1,744	66	1		13,667 19,266
40-44 45-49	1,753 2,236	6,727 5,667	5,867 5,328	3,276 3,164	3,057 2,621	1,187 1,779	46 530	10	21,913 21,335
50-54 55-59	557 352	2,463 1,501	3,261 1,997	2,480 1,745	2,193 1,837	1,525 1,500	919 808	215 389	13,613 10,129
60-64 65+	161 104	901 534	1,174 567	1,007 290	1,055 279	1,024 259	503 109	132 47	5,957 2,189
ALL	12,544	37,910	29,201	16,630	12,864	7,340	2,916	794	120,199

### AVERAGE ANNUAL EARNINGS

YEARS OF SERVICE											
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25-29</u>	<u>30+</u>	ALL		
<25 25-29	9,338 11,613	12,389 17,766	17,648 22,847	14,699 20,628				17,888	11,100 17,151		
30-34 35-39	11,292 11,008	18,686 16,914	26,207 25,538	25,822 29,679	25,800 29,095	28,800	9,087		20,922 21,837		
40-44 45-49	10,695 9,417	15,889 15,577	23,441 22,026	30,339 27,073	33,837 32,714	32,910 37,563	32,982 38,358	31,674	23,118 22,759		
50-54 55-59	11,163 10,215	16,085 14,573	20,857 19,687	23,685 22,223	27,110 23,278	32,867 25,770	38,345 33,230	37,913 39,040	23,915 22,413		
60-64 65+	8,732 6,816	13,314 9,189	18,520 12,638	20,944 15,612	23,082 19,112	24,546 17,684	29,361 21,709	37,748 27,989	21,063 14,118		
ALL	10,546	16,364	22,977	26,493	29,061	30,829	34,664	37,747	21,592		
	PRI	<u>OR FISCA</u>	L YEAR E	ARNINGS	(IN MILL	IONS) BY	YEARS O	F SERVICE			
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	ALL		
ALL	132	620	671	441	374	226	101	30	2,595		

## SERVICE RETIREMENTS AS OF JUNE 30, 1994

YEARS RETIRED										
AGE	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	15-19	<u>20-24</u>	<u>25+</u>	ALL		
<50	1							1		
50-54	8	4	2					14		
55-59 60-64	567 1,234	755 2,147	12 839	2				1,334 4,222		
65-69 70-74	884 164	3,777 924	3,164 4,244	269 1,669	33	2		8,094 7,036		
75-79 80-84	36 8	141 20	932 111	3,462 644	465 2,041	4 140	4	5,040 2,968		
85+	2	6	21	68	340	959	309	1,705		
ALL	2,904	7,774	9,325	6,114	2,879	1,105	313	30,414		

### AVERAGE ANNUAL BENEFIT

YEARS RETIRED										
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	15-19	<u>20-24</u>	<u>25+</u>	ALL		
<50 50-54	3,485 8,424	8,391	8,705					3,485 8,454		
55-59 60-64	13,246 9,903	7,389 7,997	16,520 9,322	13,547	·			9,960 8,820		
65-69 70-74	7,397 5,749	5,840 5,034	8,775 6,713	19,744 10,949	7,537	11,636		7,619 7,481		
75-79 80-84	3,705 1,891	3,497 3,777	5,569 3,606	7,206 5,771	11,325 6,948	12,799 9,997	7,738	7,159 6,677		
85+	2,967	2,556	2,131	2,534	6,070	5,818	6,533	5,807		
ALL	9,449	6,441	7,499	8,578	7,558	6,383	6,549	7,587		
	T0T	TAL ANNUAL	BENEFIT	(IN THOUS	SANDS) BY	YEARS RET	IRED			
AGE	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL		
ÄLL	27,440	50,072	69,928	52,446	21,760	7,053	2,050	230,751		

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#### MILLIMAN & ROBERTSON, INC.

YEARS SINCE DEATH									
<u>AGE</u>	<u>&lt;1</u>	1-4	<u>5-9</u>	<u>10-14</u>	15-19	20-24	<u>25+</u>	ALL	
<50 50-54	21 19	43 53	46 25	14 13	4 9	1	1	129 121	
55-59 60-64	12 22	81 118	75 169	37 60	18 28	4 11	2 9	229 417	
65-69 70-74	6	118 59	297 238	218 350	64 131	27 48	26 60	756 886	
75-79 80-84	3 9	32 45	100 62	292 105	290 232	89 157	87 149	893 759	
85+	7	49	102	110	162	206	265	901	
ALL	99	598	1,114	1,199	938	543	600	5,091	

## SURVIVORS AS OF JUNE 30, 1994

## AVERAGE ANNUAL BENEFIT

YEARS SINCE DEATH											
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	10-14	<u>15-19</u>	<u>20-24</u>	25+	ALL			
<50 50-54	4,802 7,387	7,456 7,808	5,228 8,434	8,129 9,289	6,074 6,541	13,228	3,320 4,551	6,228 7,954			
55-59 60-64	5,412 4,128	6,194 5,360	9,445 8,797	9,098 9,138	9,092 7,358	4,425 5,731	5,361 3,900	7,877 7,344			
65-69 70-74	5,205	<b>4</b> ,699 3,971	9,588 7,133	9,052 7,713	7,552 7,504	<b>4,696</b> 5,115	3,496 3,068	8,079 6,822			
75-79 80-84	5,999 4,317	3,543 4,258	5,786 6,271	6,706 6,009	6,681 5,937	4,988 6,146	3,078 3,443	5,955 5,409			
85+	4,440	4,799	5,005	5,562	6,075	6,361	4,933	5,539			
ALL	5,213	5,347	7,782	7,500	6,629	5,866	4,028	6,521			
	TOTAL	ANNUAL I	BENEFIT (II	THOUSAN	DS) BY YE	ARS SINCE	DEATH				
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL			
ALL	516	3,198	8,669	8,993	6,218	3,185	2,417	33,198			

## DISABILITY RETIREMENTS AS OF JUNE 30, 1994

YEARS DISABLED										
AGE	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL		
<50 50-54	31 16	95 60	24 22	4 6	2			154 106		
55-59 60-64	33 38	117 167	45 109	5 33	5 10			205 357		
65-69 70-74	4	22	16	5	2			49		
75-79 80-84										
85+										
ALL	122	461	216	53	19			871		

#### AVERAGE ANNUAL BENEFIT

	YEARS DISABLED										
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL			
<50	4,069	3,781	3,589	3,858				3,811			
50-54	4,713	5,525	5,032	7,043	3,961			5,357			
55-59	7,265	8,504	6,615	10,309	6,137			7,876			
60-64	6,912	7,653	7,060	9,861	9,522			7,649			
65-69	9,351	4,679	7,769	11,709	6,587			6,865			
70-74		·	-								
75-79											
80-84											
85+											
ALL	6,077	6,653	6,428	9,305	7,737			6,701			
	TOT	AL ANNUAL	BENEFIT	(IN THOUS	ANDS) BY	YEARS DISA	BLED				
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	10-14	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL			
ALL	741	3,067	1,388	493	147			5,837			

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## **Reconciliation Of Members**

			Termin	nated
		-	Deferred	
		Actives	Retirement	Non-Vested
A.	ON JUNE 30, 1993	114,932	5,402	9,307
B.	ADDITIONS	14,288	1,557	2,530
C.	DELETIONS			
	1. Service Retirement	(2,506)	(375)	(108)
	2. Disability	(162)	(22)	(1)
	3. Death	(184)	<b>(6</b> )	(23)
	4. Terminated - Deferred	(1,481)	Õ	Ó
	5. Terminated - Refund	(3,041)	. 0	(1,109)
	6. Terminated - Other Non-Vested	(1,599)	0	Ó
	7. Returned as Active	0	(237)	(809)
	8. Transferred to Other Fund	0	0	0
<b>D.</b>	DATA ADJUSTMENTS	(48)	(42)	(607)
	Vested	86,594		
	Non-Vested	33,605		
E.	TOTAL ON JUNE 30, 1994	120,199	6,277	9,180

		Recipients					
		Retirement Annuitants	Disabled	Survivors			
A.	ON JUNE 30, 1993	28,279	794	4,895			
B.	ADDITIONS	3,095	216	434			
C.	DELETIONS						
	1. Service Retirement	0	(62)	0			
	2. Death	(947)	(74)	(232)			
	3. Annuity Expired	Ó	0	Ó			
	4. Returned as Active	0	0	0			
D.	DATA ADJUSTMENTS	(13)	(3)	(6)			
E.	TOTAL ON JUNE 30, 1994	30,414	871	5,091			

Public Employe	TABLE 8						
Actuarial la (dollars							
JUL	Y 1, 1994						
A. CURRENT ASSETS (TABLE 1, F6)	\$4,747,128						
<ul> <li>B. EXPECTED FUTURE ASSETS</li> <li>1. Present Value of Expected Future Statutory Supplemental Contributions</li> </ul>	\$1,027,839						
2. Present Value of Future Normal Costs	. ,		1,457,737				
3. Total Expected Future Assets		-	\$2,485,576				
C. TOTAL CURRENT AND EXPECTED FU	<b>FURE ASSETS</b>		\$7,232,704				
<ul><li>D. CURRENT BENEFIT OBLIGATIONS</li><li>1. Benefit Recipients</li></ul>	Non-Vested	Vested	Total				
a. Retirement Annuities		\$2,569,884	ድጋ <i>56</i> 0 የወለ				
b. Disability Benefits	· · ·	57,077	\$2,569,884 57,077				
c. Surviving Spouse		324,529	324,529				
and Child Benefits			52 1,525				
2. Deferred Retirements with Future Augme	entation	72,222	72,222				
3. Former Members without Vested Rights		3,375	3,375				
4. Active Members							
a. Retirement Annuities	10,476	1,875,156	1,885,632				
b. Disability Benefits	140,205	0	140,205				
c. Survivor's Benefits	43,828	0	43,828				
d. Deferred Retirements	7,987	486,838	494,825				
e. Refund Liability Due to Death or Withdrawal	0	34,021	34,021				
5. Total Current Benefit Obligations	\$202,496	\$5,423,102	\$5,625,598				
E. EXPECTED FUTURE BENEFIT OBLIGAT	TIONS	_	\$2,055,761				
F. TOTAL CURRENT AND EXPECTED FUT	URE BENEFIT O	BLIGATIONS	\$7,681,359				
G. CURRENT UNFUNDED ACTUARIAL LIA	ABILITY (D5-A)		\$878,470				
H. CURRENT AND FUTURE UNFUNDED A							

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#### MILLIMAN & ROBERTSON, INC.

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# Determination Of Unfunded Actuarial Accrued Liability (UAAL) And Supplemental Contribution Rate

(dollars in thousands)

## JULY 1, 1994

		Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Benefits	Actuarial Accrued Liability
A.	DETERMINATION OF ACTUARIAL	(1)	(2)	<u>(3)=(1)-(2)</u>
	ACCRUED LIABILITY (AAL)			
	1. Active Members			
	a. Retirement Annuities	\$3,407,194	\$833,961	\$2,573,233
	b. Disability Benefits	261,780	106,399	155,381
	c. Survivor's Benefit	76,831	29,583	47,248
	d. Deferred Retirements	840,351	429,581	410,770
	e. Refunds Due to Death or Withdrawal	68,117	58,213	9,904
	f. Total	\$4,654,273	\$1,457,737	\$3,196,536
				<u></u>
	2. Deferred Retirements	72,222		72,222
	With Future Augmentation			
	3. Former Members Without	3,375		3,375
	Vested Rights			
	4. Annuitants in MPRIF	2,770,552		2,770,552
	5. Recipients Not in MPRIF	180,937		180,937
	6. Total	\$7 691 250	¢1 457 727	
		\$7,681,359	\$1,457,737	\$6,223,622
B.	DETERMINATION OF UNFUNDED ACT	UARIAL ACCRU	JED LIABILITY (	UAAL)
	1. AAL (A6)			\$6,223,622
	2. Current Assets (Table 1, F6)			4,747,128
	3. UAAL (B1-B2)			\$1,476,494
C.	DETERMINATION OF SUPPLEMENTAL		N RATE	
	1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020			\$51,899,490
	2. Supplemental Contribution Rate (B3/C1)			2.84%
	······································			2.077/0

MILLIMAN & ROBERTSON, INC.

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# Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

## YEAR ENDING JUNE 30, 1994

A.	UAAL AT BEGINNING OF YEAR	\$1,409,859
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	<ol> <li>Normal Cost and Expenses</li> <li>Contribution</li> <li>Interest on A, B1 and B2</li> </ol>	\$180,084 (232,330) 117,618
	4. Total (B1+B2+B3)	\$65,372
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	\$1,475,231
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	<ol> <li>Salary Increases</li> <li>Investment Return</li> <li>MPRIF Mortality</li> <li>Mortality of Other Benefit Recipients</li> <li>Repayment of Refunded Contributions</li> <li>Other Items</li> </ol>	(\$64,319) 4,688 18,713 (6,257) 0 749
	7. Total	(\$46,426)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D5)	\$1,428,805
F.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	0
G.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	47,689
H.	UAAL AT END OF YEAR (E+F+G)	<u>\$1,476,494</u>

## **Determination Of Contribution Sufficiency**

(dollars in thousands)

## JULY 1, 1994

		Percent of	Dollar
A.	STATUTORY CONTRIBUTIONS - CHAPTER 353	Payroll	Amount
	1. Employee Contributions	4.30%	\$118,851
	2. Employer Contributions	4.60%	127,162
	3. Total	8.000/	\$246 012
	5. Total	8.90%	\$246,013
_			
В.	<b>REQUIRED CONTRIBUTIONS - CHAPTER 356</b>		
	1. Normal Cost		
	a. Retirement Benefits	3.95%	\$108,637
	b. Disability benefits	0.49%	13,372
	c. Survivors	0.13%	3,586
	d. Deferred Retirement Benefits	1.91%	52,604
	e. Refunds Due to Death or Withdrawal	0.27%	7,298
	f. Total	6.75%	\$185,497
	2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	2.84%	78,078
	3. Allowance for Expenses	0.17%	4,674
	4. Total	9.76%	\$268,249
C.	CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	-0.86%	(\$22,236)

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1994 is \$2,749,217.

# Summary of Actuarial Assumptions and Methods

Interest:	Pre-Retirement: 8.5% per annum					
	Post-Retirement: 5.0% per annum					
Salary Increases:	Reported salary for prior fiscal year, with new hires annualized, increased to current fiscal year and annually for each future year according to the rate table below.					
Mortality:	<b>Pre-Retirement:</b> Male - 1983 Group Annuity Mortality Table for males setback five years.					
	Female - 1983 Group Annuity Mortality Table for females setback five years.					
	<ul> <li>Post-Retirement:</li> <li>Male - 1983 Group Annuity Mortality Table for males set forward one year.</li> <li>Female - 1983 Group Annuity Mortality Table for females set forward one year.</li> </ul>					
	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 90 when first eligible.					
Separation:	Graded rates based on experience as of June 30, 1990. Rates are 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.					
Return of	All employees withdrawing after becoming eligible					

for a deferred benefit take the larger of their contributions accumulated with interest or the value of their deferred benefit.

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**Contributions:** 

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:

Benefit IncreasesPaymeAfter Retirement:of 5%

N/A

**Special Consideration:** 

Payment of earnings on retired reserves in excess of 5% accounted for by 5% post-retirement assumptions.

Married Members assumed to elect subsidized joint and survivor form of annuity as follows:

Males - 30% elect 50% J&S option 45% elect 100% J&S option

Females - 15% elect 50% J&S option 15% elect 100% J&S option

Actuarial Cost Method:

Entry Age Normal Actuarial 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 or

Payment on the Unfunded Actuarial Accrued Liability: Cost Value plus one-third Unrealized Gains or Losses.

A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 6% per annum.

# Summary of Actuarial Assumptions and Methods

## Separation Expressed as Number of Occurrences Per 10,000:

	Pre-Retirement Death		Wit	hdrawal	Dis	ability	Reti	rement	Salary
Age	Male	Female	Male	Female	Male	Female	<u>Male</u>	Female	<u>Increases</u>
20	3	1	2,542	2,913	9	9	0	0	7.7%
21	3	1	2,277	2,666	9	9	0	0	7.7
22	3	2	2,050	2,450	9	9	0	0	7.7
23	4	2	1,854	2,259	10	10	0	0	7.7
24	4	2	1,684	2,091	10	10	0	0	7.7
25	4	2	1,536	1,942	10	10	0	0	7.6
26	. 4	2	1,406	1,808	10	10	0	0	7.51
. 27	4	2	1,291	1,688	10	10	0	0	7.39
28	4	2	1,189	1,580	11	11	0	0	7.30
29	4	2	1,099	1,482	11	11	0	0	7.2
30	5	3	1,018	1,394	11	11	0	0	7.2
31	5	3	945	1,313	11	11	0	0	7.1
32	5	3	880	1,239	11	11	0	0	7.1
33	5	3	<b>8</b> 21	1,172	12	12	0	0	7.0
34	6	3	767	1,110	12	12	0	0	7.0
35	6	3	719	1,053	12	12	0	0	6.9
36	7	4	675	1,000	12	12	0	0	6.8
37	7	4	634	952	13	13	0	0	6.7
38	. 8	4	597	907	13	13	0	0	6.6
39	9	4	563	865	14	14	0	0	6.5
40	9	5	532	826	15	15	0	0	6.4
41	10	5	503	790	16	16	0	0	6.3
42	10	5	476	756	17	17	0	0	6.3
43	11	6	452	724	18	18	0	0	6.3
44	12	6	429	695	20	20	0	0	6.2
45	14	7	408	667	22	22	0	0	6.2
46	15	7	388	641	23	23	0	0	6.09
47	17	8	370	616	25	25	0	0	6.0
48	19	8	352	593	27	27	0	0	5.9
49	22	9	336	571	30	30	0	0	5.8

# Summary of Actuarial Assumptions and Methods

## Separation Expressed as Number of Occurrences Per 10,000:

		Pre-Retirement 			Dis	ability		ment	Salary	
<u>Age</u>	Male	<u>Female</u>	Male	Female	Male	Female	Male	Female	Increases	
50	22	10	321	550	33	33	0	0	5.7%	
51	25	11	316	531	36	36	0	0	5.7	
52	28	12	310	513	40	40	0	0	5.7	
53	31	14	270	495	45	45	0	0	5.7	
54	35	15	230	487	51	51	0	0	5.7	
55	39	16	195	478	58	58	0	0	5.7	
56	43	18	150	410	66	66	0	0	5.7	
57	48	19	100	362	76	76	0	· 0	5.7	
58	52	21	50	210	88	88	0	0	5.7	
59	57	23	20	50	102	102	0	0	5.0	
60	61	25	0	0	118	118	0	0	5.0	
61	66	28	0	0	136	136	0	0	5.0	
62	71	31	0	0	157	157	0	0	5.0	
63	77	34	0	0	181	181	0	0	5.0	
64	83	38	0	0	208	208	10,000	10,000	5.0	
65	91	42	0	0	0	0	0	0	5.0	
66	101	47	0	0	0	0	0	0	5.0	
67	111	52	0	0	0	0	0	0	5.0	
68	124	58	0	0	0	0	0	0	5.0	
69	139	64	0	0	0	0	0	0	5.0	
70	156	71	0	0	0	0	0	0	5.0	

				YFARS O	F SERVIC	F			
<u>AGE</u> <25 25-29	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	ALL
30-34 35-39									
40-44						0			
40-44 45-49						2 5	2 173	8	4 186
50-54 55-59			1		1	2 5	371 341	165 283	540 629
60-64 65+	1					3 2	203 56	85 39	292 97
ALL	1		1		1	19	1,146	580	1,748
			AVE	RAGE ANN	UAL EARN	INGS			
105					F SERVIC				
<u>AGE</u> <25 25-29	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	<u>ALL</u>
30-34 35-39									
40-44 45-49						22,787 29,003	37,118 37,293	34,982	29,953 36,971
50-54 55-59		1,	986		52,376	22,534 32,370	38,285 33,885	37,489 37,589	37,942 35,540
60-64 65+	10,283					25,420 27,863		31,908 26,922	28,984 22,762
ALL	10,283	1,	986		52,376	27,868	34,076	35,975	34,617
	PRIO	R FISCAL YE	AR E/	ARNINGS	(IN THOU:	SANDS) B	Y YEARS	OF SERVI	<u>CE</u>
<u>Age</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	ALL
ALL	10		2		52	530	39,051	20,866	60,511

## ACTIVE MEMBERS AS OF JUNE 30, 1994

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SERVICE RETIREMENTS AS OF JUNE 30, 1994	
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			Y	EARS RETI	RED			
AGE	<u>&lt;1</u>	<u>1-4</u>	5-9	10-14	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
<50	1							1
50-54	7	4	2	•				13
55-59	256	210	10					476
60-64	348	613	377	2				1,340
65-69	150	805	1,284	232				2,471
70-74	21	160	1,493	1,043	28	2		2,747
75-79	3	17	278	1,889	376	3		2,566
80-84		3	23	273	1,392	130	4	1,825
85+	1	2	4	22	233	703	290	1,255
ALL	787	1,814	3,471	3,461	2,029	838	294	12,694

### AVERAGE ANNUAL BENEFIT

			Y	EARS RETI	RED			
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
<50 50-54	3,485 7,709	8,391	8,705					3,485 8,072
55-59 60-64	21,679 18,917	17,783 17,685	17,121 17,218	13,547				19,864 17,867
65-69 70-74	14,700 17,487	12,981 12,344	16,012 12,860	21,696 14,630	8,067	11,636		15,479 13,488
75-79 80-84	7,595	12,476 17,710	11,921 11,636	10,458 9,781	12,621 8,374	15,469 10,358	7,738	10,949 8,781
85+	5,200	3,442	6,930	5,143	7,259	6,655	6,730	6,753
ALL	18,794	15,053	14,419	12,383	9,029	7,273	6,744	12,715
	<b>T0</b>	TAL ANNUAL	BENEFIT	(IN THOUS	SANDS) BY	YEARS RET	IRED	
AGE	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL
ALL	14,790	27,306	50,048	42,857	18,319	6,094	1,982	161,404

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			YEAR	S SINCE D	EATH			
<u>AGE</u>	<u>&lt;1</u>	1-4	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
<50	3	11	17	8	3	1	1	43
50-54	4	24	11	10	8		1	59
55-59	4	19	42	27	16	4	2	114
60-64	2	36	86	43	23	11	9	210
65-69		34	160	161	56	26	26	463
70-74		25	114	242	106	45	60	592
75-79	3	27	56	193	230	79	87	675
80-84	9	44	55	76	168	130	146	628
85+	7	47	101	102	139	187	264	847
ALL	32	267	642	862	749	483	596	3,631

SURVIVORS AS OF JUNE 30, 1994

### AVERAGE ANNUAL BENEFIT

			YEAF	RS SINCE D	EATH			
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	10-14	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
<50	13,554	14,109	8,795	11,347	7,737	10 000	3,320	10,760
50-54	15,221	12,539	15,063	10,736	7,242	13,228	4,551	12,044
55-59	8,506	12,769	13,548	11,242	9,803	4,425	5,361	11,706
60-64	13,995	9,709	14,088	11,234	8,567	5,731	3,900	11,273
65-69		8,027	14,232	10,883	8,270	4,680	3,496	10,751
70-74 <sup>.</sup>		5,385	10,673	9,587	8,419	5,337	3,068	8,426
75-79	5,999	3,649	7,783	8,467	7,658	5,188	3,078	6,853
80-84	4,317	4,351	6,845	7,216	6,661	6,798	3,415	5,823
85+	4,440	4,768	5,044	5,549	6,675	6,646	4,947	5,676
ALL	7,859	7,378	10,765	9,055	7,475	6,195	4,029	7,692
	TOTAL	ANNUAL	BENEFIT (I		DS) BY YE		DEATH	
AGE	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	<u>All</u>
ALL	251	1,969	6,911	7,805	5,598	2,992	2,401	27,929

TABLE 6A BASIC

## Public Employees Retirement Fund

			YEA	RS DISABL	ED			
AGE	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL
<50 50-54	1 1	6	3	1 2	1			2 13
55-59 60-64	3 5	25 34	9 30	2 19	4 9			43 97
65-69 70-74	1		4	4	2			11
75-79 80-84			· .					·
85+								
ALL	11	65	46	28	16			166

## DISABILITY RETIREMENTS AS OF JUNE 30, 1994

## AVERAGE ANNUAL BENEFIT

			YE/	ARS DISAB	LED			
<u>Age</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	15-19	<u>20-24</u>	<u>25+</u>	ALL
<50 50-54	23,153 18,072	18,053	12,879	5,013 11,184	6,643			14,083 14,926
55-59 60-64	16,010 17,967	22,568 15,105	18,742 17,696	21,024 15,019	6,904 10,399			19,781 15,600
65-69 70-74	22,556		20,324	14,485	6,587			15,906
75-79 80-84								
85+								
ALL	18,332	18,248	17,815	14,740	8,814			16,632
	<u> </u>	AL ANNUAL	BENEFIT	(IN THOUS	SANDS) BY	YEARS DISA	BLED	
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
ALL	201	1,186	819	412	141			2,760

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#### MILLIMAN & ROBERTSON, INC.

## **Determination Of Contribution Sufficiency**

(dollars in thousands)

## JULY 1, 1994

A.	STATUTORY CONTRIBUTIONS - CHAPTER 353	Percent of Payroll	Dollar Amount
	<ol> <li>Employee Contributions</li> <li>Employer Contributions</li> </ol>	8.23% 10.73%	\$5,259 6,857
	3. Total	18.96%	\$12,116
		,	

## B. REQUIRED CONTRIBUTIONS - CHAPTER 356

1. Normal Cost		
a. Retirement Benefits	4.87%	\$3,112
b. Disability benefits	0.79%	502
c. Survivors	0.55%	349
d. Deferred Retirement Benefits	3.45%	2,205
e. Refunds Due to Death or Withdrawal	0.01%	5
f. Total	9.67%	\$6,173

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1994 is \$63,902.

#### MILLIMAN & ROBERTSON, INC.

## Summary of Plan Provisions

## **GENERAL**

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.
Contributions:	
Member:	8.23% of salary.
Employer:	10.73% of salary.
Allowable Service:	Service during which Member contributions were deducted. May also include certain leaves of absence and military service.
Salary:	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes unused annual leave and sick leave payments, severance payments, Workers' Compensation benefits and employer-paid flexible spending accounts, cafeteria plans, healthcare expense accounts, day-care expenses, fringe benefits and the cost of insurance coverage.
Average Salary:	Average of the five highest successive years of salary. Average salary is based on all Allowable Service if less than five years.

### RETIREMENT

### Normal Retirement Benefit:

Eligibility:

Age 65 and three years of Allowable Service. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.

#### Early Retirement Benefit:

*Eligibility*: Age 55 and three years of Allowable Service. Any age with 30 years of Allowable Service. Rule of 90: Age plus Allowable Service totals 90.

Amount:

The greater of

2% of average salary for each of the first 10 years of Allowable Service and 2.5% of average salary for each subsequent year with reduction of 0.25% for each month the Member is under age 65 at time of retirement or age 62 if 30 years of Allowable Service. No reduction if age plus years of Allowable Service totals 90;

#### OR

2.5% of average salary for each year of Allowable Service assuming augmentation to age 65 at 3% per year and actuarial reduction for each month the Member is under age 65.

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 with bounce back feature without additional reduction (option canceled if Member is predeceased by beneficiary).

Benefit Increases: Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF). (Note: The MPRIF methodology for this increase will change effective 1/1/94.) A benefit recipient who has been receiving a benefit for at least 12 full months as of June 30 will receive a full increase. Members receiving benefits for at least one full month but less than 12 full months will receive a partial increase.

Benefit Increases: Members retired under laws in effect before

July 1, 1973 receive an additional lump-sum payment each year. In 1989, this lump-sum payment is the greater of \$25 times each full year of Allowable Service or the difference between \$400 times each full year of Allowable Service and the sum of the benefits paid from any Minnesota public pension plan plus cash payments from the Social Security Administration for the preceding fiscal year July 1, 1988 through June 30, 1989. In each following year, the lump-sum payment will increase by the same percentage increase that is applied to regular annuities paid from MPRIF.

### DISABILITY

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#### Disability Benefit:

(continued)

Eligibility: Total and permanent disability before normal retirement age with three years of Allowable Service.
Amount: Normal Retirement Benefit based on Allowable Service and average salary at disability without reduction for commencement before normal retirement age. Supplemental benefit of \$25 per month payable to the later of the normal retirement age or the 5-year anniversary at commencement of disability. The disability benefit is reduced to that amount which, when added to Workers' Compensation, does not exceed the salary the disabled Member received as of the date of the disability or the salary currently payable for the same employment position substantially similar to the one the person held as of the date of the disability, whichever is greater.

Payments stop if disability ceases. If death occurs prior to age 65 or within five years of disability, the surviving spouse can receive a refund or a survivor benefit. Dependent children are entitled to dependent child benefits subject to the 70% family maximum. Payments change to a retirement annuity at normal retirement age. 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:	Normal retirement age.
Amount:	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before normal retirement age or the normal retirement benefit available at normal retirement age, 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.
Amount:	50% of salary averaged over last six months. Family benefit is maximum of 70% and minimum of 50% of average salary. Benefit paid until spouse's death but no payments while spouse is remarried prior to July 1, 1991.
	Surviving spouse optional annuity may be elected in lieu of this benefit.

### Surviving Dependent Child Benefit

*Eligibility:* Active Member with 18 months of Allowable Service or Member receiving a disability benefit.

Amount: 10% of salary averaged over last six months for each child. Family benefit minimum (including spouse's benefit) of 50% of salary and maximum of 70% of average salary. 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 benefits commence and other survivor annuity is waived by spouse.

Survivor's payment of the 100% joint and survivor benefit the Member could have elected if terminated or an actuarial equivalent term certain annuity. If commencement is prior to age 65 (age 62 if 30 years of service), the benefit is reduced same as early retirement with half the applicable reduction factor used from age 55 to the actual commencement age. If no surviving spouse, then an actuarial equivalent dependent child benefit is paid to age 20 or for five years if longer.

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

#### **Refund of Contributions**

Amount:

Eligibility:	Member dies before receiving any retirement benefits and survivor benefits are not payable.
Amount:	The excess of the Member's contributions with 6% interest over any disability or survivor benefits paid.

## **TERMINATION**

## **Refund of Contributions**

Eligibility:	Termination of public service.
Amount:	Member's contributions with 5% interest compounded annually if termination occurred before May 16, 1989 and 6% interest if termination occurred on or after May 16, 1989. A deferred annuity may be elected in lieu of a refund if three or more years of Allowable Service.
Deferred Benefit	
Eligibility:	Three years of Allowable Service.
Amount:	Benefit computed under law in effect at termination and increased by the following percentage compounded annually: 0% before 7/1/71; 5% from 7/1/71 to 1/1/81; and 3% thereafter until January 1 of the year following attainment of age 55 and 5% thereafter until the annuity begins. Amount is payable as a normal or early retirement.

## SUMMARY OF SIGNIFICANT CHANGES

None

ACTIVE MEMBERS AS OF JUNE 30, 1994

				YEARS C	F SERVIC	E			
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	ALL
<25 25-29	1,482 2,095	1,860 5,163	32 1,453	1 43				1	3,375 8,755
30-34 35-39	1,799 2,005	5,955 7,139	4,347 5,175	1,488 3,136	78 1,744	66	1		13,667 19,266
40-44 45-49	1,753 2,236	6,727 5,667	5,867 5,328	3,276 3,164	3,057 2,621	1,185 1,774	44 357	2	21,909 21,149
50-54 55-59	557 352	2,463 1,501	3,260 1,997	2,480 1,745	2,192 1,837	1,523 1,495	548 467	50 106	13,073 9,500
60-64 65+	160 104	901 534	1,174 567	1,007 290	1,055 279	1,021 257	300 53	47 8	5,665 2,092
ALL	12,543	37,910	29,200	16,630	12,863	7,321	1,770	214	118,451

### AVERAGE ANNUAL EARNINGS

	YEARS OF SERVICE												
<u>AGE</u>	<u>&lt;1</u>	1-4	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u> 25-29</u>	<u>30+</u>	ALL				
<25 25-29	9,338 11,613	12,389 17,766	17,648 22,847	14,699 20,628				17,888	11,100 17,151				
30-34 35-39	11,292 11,008	18,686 16,914	26,207 25,538	25,822 29,679	25,800 29,095	28,800	9,087		20,922 21,837				
40-44 45-49	10,695 9,417	15,889 15,577	23,441 22,026	30,339 27,073	33,837 32,714	32,927 37,587	32,794 38,873	18,443	23,116 22,634				
50-54 55-59	11,163 10,215	16,085 14,573	20,862 19,687	23,685 22,223	27,098 23,278	32,881 25,748	38,386 32,752	39,310 42,916	23,335 21,544				
60-64 65+	8,722 6,816	13,314 9,189	18,520 12,638	20,944 15,612	23,082 19,112	24,543 17,604	30,346 23,851	48,309 33,192	20,655 13,717				
ALL	10,546	16,364	22,978	26,493	29,059	30,836	35,044	42,549	21,399				
	PRI	OR FISCA	L YEAR E	ARNINGS	(IN MILL	<u>IONS) BY</u>	YEARS O	F SERVICE					

	PRIOR	FISCAL	YEAR E	ARNINGS	(IN MILL)	(ONS) BY	YEARS OF	SERVICE	
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	10-14	15-19	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	ALL
ALL	132	620	671	441	374	226	62	9	2,535

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	YEARS RETIRED											
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL				
<50 50-54	1		Ň					ĺ				
55-59 60-64	311 886	545 1,534	2 462					858 2,882				
65-69 70-74	734 143	2,972 764	1,880 2,751	37 626	5			5,623 4,289				
75-79 80-84	33 8	124 17	654 88	1,573 371	89 649	1 10		2,474 1,143				
85+	1	4	17	46	107	256	19	450				
ALL	2,117	5,960	5,854	2,653	850	267	19	17,720				

## SERVICE RETIREMENTS AS OF JUNE 30, 1994

#### AVERAGE ANNUAL BENEFIT

YEARS RETIRED											
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL			
<50											
50-54	13,430							13,430			
55-59	6,306	3,384	13,518					4,467			
60-64	6,363	4,126	2,880					4,614			
65-69	5,905	3,906	3,833	7,509				4,166			
70-74	4,026	3,504	3,378	4,817	4,574			3,634			
75-79	3,352	2,267	2,869	3,302	5,854	4,791		3,229			
80-84	1,891	1,319	1,508	2,821	3,891	5,306		3,320			
85+	734	2,114	1,003	1,287	3,483	3,520	3,533	3,170			
ALL	5,975	3,821	3,396	3,616	4,049	3,592	3,533	3,915			
	TOT	TAL ANNUAL	BENEFIT	(IN THOUS	ANDS) BY	YEARS RET	IRED				
AGE	<1	<u>1-4</u>	<u>5-9</u>	10-14	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL			
ALL	12,649	22,773	19,880	9,593	3,441	959	67	69,373			

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	YEARS SINCE DEATH										
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL			
<50 50-54	18 15	32 29	29 14	6 3	1 1			86 62			
55-59 60-64	8 20	62 82	33 83	10 17	2 5			115 207			
65-69 70-74	6	84 34	137 124	57 108	8 25	1 3		293 294			
75-79 80-84		<b>5</b> 1	44 7	99 29	60 64	10 27	3	218 131			
85+		2	1	8	23	19	1	54			
ALL	67	331	472	337	189	60	4	1,460			

## SURVIVORS AS OF JUNE 30, 1994

### AVERAGE ANNUAL BENEFIT

	YEARS SINCE DEATH										
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL			
<50 50-54	3,344 5,298	5,170 3,894	3,138 3,227	3,839 4,468	1,086 936			3,962 4,063			
55-59 60-64	3,865 3,142	4,180 3,452	4,223 3,316	3,312 3,837	3,411 1,799			4,082 3,359			
65-69 70-74	5,205	3,353 2,932	4,166 3,880	3,881 3,514	2,529 3,627	5,120 1,800		3,857 3,593			
75-79 80-84		2,972 210	3,245 1,761	3,273 2,848	2,937 4,038	3,416 3,009	4,845	3,175 3,430			
85+		5,536	1,140	5,728	2,451	3,556	1,347	3,395			
ALL	3,950	3,710	3,726	3,525	3,279	3,225	3,971	3,609			
	TOTAL	ANNUAL B	ENEFIT (I	N THOUSAN	DS) BY YE	ARS SINCE	DEATH				
<u>AGE</u>	<u>&lt;1</u>	1-4	5-9	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL			
ALL	264	1,228	1,758	1,187	619	193	15	5,269			

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## DISABILITY RETIREMENTS AS OF JUNE 30, 1994

	YEARS DISABLED											
<u>AGE</u>	<u>&lt;1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL				
<50 50-54	30 15	95 54	24 19	3 4	1			152 93				
55-59 60-64	30 33	92 133	36 79	3 14	1			162 260				
65-69 70-74	3	22	12	1				38				
75-79 80-84												
85+												
ALL	111	396	170	25	3			705				

### AVERAGE ANNUAL BENEFIT

	YEARS DISABLED											
<u>AGE</u>	<u>&lt;1</u>	1-4	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL				
<50 50-54	3,433 3,823	3,781 4,134	3,589 3,794	3,473 4,973	1,279			3,676 4,020				
55-59 60-64	6,391 5,238	4,683 5,749	3,584 3,022	3,166 2,861	3,069 1,636			4,717 4,684				
65-69 70-74	4,950	4,679	3,585	607	·			4,248				
75-79 80-84												
85+												
ALL	4,863	4,750	3,347	3,219	1,995			4,363				
	<u> </u>	AL ANNUAL	BENEFIT	(IN THOUS	ANDS) BY	YEARS DISA	BLED					
AGE	<1	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	15-19	<u>20-24</u>	<u>25+</u>	ALL				
ALL	539	1,881	568	80	5			3,075				

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MILLIMAN & ROBERTSON, INC.

## Determination Of Contribution Sufficiency (dollars in thousands)

### JULY 1, 1994

		Percent of Payroll	Dollar Amount
A.	STATUTORY CONTRIBUTIONS - CHAPTER 353		
	1. Employee Contributions	4.23%	\$113,592
	2. Employer Contributions	4.48%	120,306
	3. Total	8.71%	\$233,898
в	REQUIRED CONTRIBUTIONS - CHAPTER 356		

#### B. REQUIRED CONTRIBUTIONS - CHAPTER 356

1. Normal Cost		
a. Retirement Benefits	3.93%	\$105,525
b. Disability benefits	0.48%	12,869
c. Survivors	0.12%	3,237
d. Deferred Retirement Benefits	1.88%	50,400
e. Refunds Due to Death or Withdrawal	0.27%	7,293
f. Total	6.68%	\$179,324

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1994 is \$2,685,396.

#### MILLIMAN & ROBERTSON, INC.

# Summary of Plan Provisions

## GENERAL

Eligi	bility	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 Mem- bers.
Cont	ributions	
	Member:	4.23% of salary.
	Employer:	4.48% of salary.
Allow	vable Service:	Service during which Member contributions were deducted. May also include certain leaves of absence and military service.
Salar	y:	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes unused annual leave and sick leave payments, severance payments, Workers' Compensation benefits and employer-paid flexible spending accounts, cafeteria plans, healthcare expense accounts, day-care expenses, fringe benefits and the cost of insurance coverage.
Avera	age Salary:	Average of the five highest successive years of salary. Average salary is based on all Allowable Service if less than five years.

## RETIREMENT

### Normal Retirement Benefit

Eligibility:	First hired before July 1, 1989:
	Age 65 and three years of Allowable Service. Proportionate
	Retirement Annuity is available at age 65 and one year of
	Allowable Service.

#### TABLE 13B COORDINATED (Continued)

Eligibility:	First hired after June 30, 1989:
(Continued)	The greater of age 65 or the age eligible for full Social Security retirement benefits and three years of Allowable Service. Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.
Amount:	1.5% of Average salary for each year of Allowable Service.

#### Early Retirement Benefit

Eligibility:	First hired before July 1, 1989: Age 55 and three years of Allowable Service. Any age with 30 years of Allowable Service. Rule of 90: Age plus Allowable Service totals 90.
	First hired after June 30, 1989:
	Age 55 with three years of Allowable Service.
Amount:	First hired before July 1, 1989: The greater of 1% of average salary for each of the first 10 years of Allowable Service and 1.5% of average salary for each subsequent year with reduction of 0.25% for each month the Member is under age 65 at time of retirement or age 62 if 30 years of Allowable Service. No reduction if age plus years of Allowable Service totals 90; OR

1.5% of average salary for each year of Allowable Service assuming augmentation to age 65 at 3% per year and actuarial reduction for each month the Member is under age 65.

#### First hired after June 30, 1989:

1.5% of average salary for each year of allowable Service assuming augmentation to the age eligible for full Social Security retirement benefits at 3% per year and actuarial reduction for each month the Member is under the Social Security retirement age.

#### TABLE 13B COORDINATED (Continued)

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 with bounce back feature without additional reduction (option canceled if Member is predeceased by beneficiary).

Benefit Increases:

Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF). A benefit recipient who has been receiving a benefit for at least 12 full months as of June 30 will receive a full increase. Benefit recipients receiving benefits for at least one full month but less than 12 full months will receive a partial increase.

Members retired under laws in effect before July 1, 1973 receive an additional lump-sum payment each year. In 1989, this lump-sum payment is \$25 times each full year of Allowable Service. In each following year, the lumpsum payment will increase by the same percentage increase that is applied to regular annuities paid from MPRIF.

## DISABILITY

#### **Disability Benefit**

Eligibility:Total and permanent disability before normal retirement age<br/>with three years of Allowable Service.Amount:Normal Retirement Benefit based on Allowable Service and<br/>average salary at disability without reduction for commence-<br/>ment before normal retirement age. The disability benefit is<br/>reduced to that amount which, when added to Workers' Com-<br/>pensation, does not exceed the salary the disabled Member<br/>received as of the date of the disability or the salary currently<br/>payable for the same employment position substantially similar<br/>to the one the person held as of the date of the disability,

whichever is greater.

Amount: (Continued)	Payments stop if disability ceases or death occurs. Payments change to a retirement annuity at normal retirement age. 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:	Normal retirement age.
Amount:	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before normal retirement age or the normal retirement benefit available at normal retirement age, 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.
Amount:	Survivor's payment of the 100% joint and survivor benefit the Member could have elected if terminated or an actuarial equivalent term certain annuity. If commencement is prior to age 65 (age 62 if 30 years of service), the benefit is reduced same as early retirement with half the applicable reduction factor used from age 55 to the actual commencement age. If no surviving spouse, then an actuarial equivalent dependent child benefit is paid to age 20 or for five years if longer.

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 6% interest over any disability or survivor benefits paid.

## **TERMINATION**

## **Refund of Contributions**

Eligibility:	Termination of public service.	
Amount:	Member's contributions with 5% interest compounded annually if termination occurred before May 16, 1989 and 6% interest if termination occurred on or after May 16, 1989. A deferred annuity may be elected in lieu of a refund if three or more years of Allowable Service.	
Deferred Benefit		
Eligibility:	Three years of Allowable Service.	
Amount:	Benefit computed under law in effect at termination and increased by the following percentage compounded annually: 0% before 7/1/71; 5% from 7/1/71 to 1/1/81; and 3% thereafter until January 1 of the year following attainment of age 55 and 5% thereafter until the annuity begins. Amount is payable as a	

# SUMMARY OF SIGNIFICANT CHANGES

None

normal or early retirement.