State Employees Retirement Fund ACTUARIAL VALUATION REPORT

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July 1, 1999



MILLIMAN & ROBERTSON, INC.

LCP&R NEC 06 1999



Actuaries & Consultants

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December 3, 1999

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

RE: State 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, 1999.

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 Minnesota State Retirement System.

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.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.

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Report Highlights

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(dollars in thousands)

		07/01/98 Valuation	07/01/99 Valuation
A.	CONTRIBUTIONS (Table 11)		
	 Statutory Contributions - Chapter 352 % of Payroll 	8.00%	8.00%
	 Required Contributions - Chapter 356 % of Payroll 	7.73%	7.67%
	3. Sufficiency (Deficiency): (A.1 A.2.)	0.27%	0.33%
B.	FUNDING RATIOS 1. Accrued Benefit Funding Ratio		
	a. Current Assets (Table 1)	\$5,390,526	\$5,968,692
	b. Current Benefit Obligations (Table 8)	\$4,512,660	\$4,950,945
	c. Funding Ratio: (a/b)	119.45%	120.56%
	2. Accrued Liability Funding Ratio		
	a. Current Assets (Table 1)	\$5,390,526	\$5,968,692
	b. Actuarial Accrued Liability (Table 9)	\$5,005,165	\$5,464,207
	c. Funding Ratio: (a/b)	107.70%	109.23%
	3. Projected Benefit Funding Ratio (Table 8)		
	a. Current and Expected Future Assets	\$6,495,768	\$7,147,463
	b. Current and Expected Future Benefit Obligations	\$6,041,884	\$6,557,330
	c. Funding Ratio: (a/b)	107.51%	109.00%
C.	PLAN PARTICIPANTS 1. Active Members		
	a. Number (Table 3)	46,299	47,168
	b. Projected Annual Earnings	\$1,664,588	\$1,757,716
	c. Average Annual Earnings (Projected \$)	\$35,953	\$37,265
	d. Average Age	43.9	44.1
	e. Average Service	11.8	11.7
	2. Others		
	a. Service Retirements (Table 4)	15,185	15,670
	b. Survivors (Table 5)	1,697	1,811
	c. Disability Retirements (Table 6)	948	1,007
	d. Deferred Retirements (Table 7)	11,415	10,663
	e. Terminated Other Non-vested (Table 7)	7,168	8,220
	f. Total	36,413	37,371

Commentary

Purpose

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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:

- 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 120.56%. The corresponding ratio for the prior year was 119.45%
- 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 1999 the ratio is 109.23%, which is an increase from the 1998 value of 107.70%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 109.00% shows that the current statutory contributions are adequate.

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 E1 to E6. 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.

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)

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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 as follows:

- 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

Disclosure of the Current Benefit Obligation amounts used to be required by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 has been superceded by Statement No. 25. Tables 14 and 15 of this report are included to fulfill the requirements of Statement No. 25.

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 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.

Source 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 expectations. 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:

- Normal costs based on the Entry Age Normal Actuarial Cost Method.
- A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.
- An Allowance for Expenses.

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 8.00% compared to the Required Contribution Rate of 7.67%.

Changes in Actuarial Assumptions

There were no changes in actuarial assumptions since the last valuation.

Changes in Plan Provisions

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Certain individuals employed as a deputy state fire marshal, fire/arson investigator are eligible to elect special benefit coverage for credited service subsequent to July 1, 1999. The most significant benefit provisions for these individuals are summarized below:

	Pre-7/1/99 Service	Post-7/1/99 Service		
Benefit Multiplier	1.7%	2.0%		
Disability Benefit	Accrued NRB	Accrued NRB incorporating a 15-year service minimum (20-year if duty related)		
Retirement Eligibility	Age 55 with actuarial reduction from Normal Retirement Date	Age 55 without reduction		

Statement of Plan Net Assets

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(dollars in thousands)

JULY 1, 1999

		Market Value	Cost Value
Α.	ASSETS IN TRUST 1. Cash, Equivalents, Short-term Securities 2. Fixed Income 3. Equity 4. Real Estate 5. Equity in MPRIF 6. Other	\$53,635 906,888 3,222,126 151,196 2,054,794 115	\$53,635 927,777 2,587,051 123,890 2,054,794 115
	Subtotal	\$6,388,754	\$5,747,262
B.	ASSETS RECEIVABLE	10,051	10,051
C.	LIABILITIES	(2,452)	(2,452)
D.	NET ASSETS HELD IN TRUST FOR PENSION BENEFITS 1. MPRIF Reserves 2. Member Reserves 3. Other Non-MPRIF Reserves 4. Total Assets Available for Benefits	2,054,794 688,510 3,653,049 \$6,396,353	2,054,794 688,510 3,011,557 \$5,754,861
 E.	DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
	 Cost Value of Assets Available for Benefits (D4) Market Value (D4) Cost Value (D4) Market Over Cost: (E2-E3) One third of Market Over Cost: (E4)/2 	\$6,396,353 5,754,861 \$641,492	\$5,754,861
	 6. Actuarial Value of Assets (E1+E5) (Same as "Current Assets") 		\$5,968,692

Statement of Change In Plan Net Assets (dollars in thousands)

YEAR ENDING JUNE 30, 1999

		Market Value	Cost Value
A.	ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$5,761,649	\$5,204,966
B.	ADDITIONS		
	1. Member Contributions	\$66,823	\$66,823
	2. Employer Contributions	65,979	65,979
	3. Contributions From Other Sources	0	0
	4. MPRIF Income	280,696	280,696
	5. Net Investment Income		
	a. Interest and Dividends	361,683	361,683
	b. Net Realized Gain (Loss)	0	0
	c. Net Change in Unrealized Gain (Loss)	84,814	0
	d. Investment Expenses	(5,274)	(5,274)
	Net Subtotal	441,223	356,409
	6. Other	5,407	5,413
	7. Total Additions	\$860,128	\$775,319
C.	OPERATING EXPENSES		
	1. Service Retirements paid from MPRIF	\$207,962	\$207,962
	2. Service Retirements paid from plan assets	0	0
	2. Disability Benefits	0	0
	3. Survivor Benefits	0	0
	4. Refunds	11,110	11,110
	6. Administrative Expenses	2,555	2,555
	7. Other	3,797	3,797
	8. Total Disbursements	\$225,424	\$225,424
D.	OTHER CHANGES IN RESERVES	0	0
E.	ASSETS AVAILABLE AT END OF PERIOD	\$6,396,353	\$5,754,861

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ACTIVE MEMBERS AS OF JUNE 30, 1999

	Years of Service								
Age	<u><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	909	512	9	0	0	0	0	0	1,430
25-29	1,128	1,690	268	10	0	0	0	0	3,096
30-34	843	1,809	1,187	371	30	0	0	0	4,240
35-39	989	1,567	1,541	1,409	763	67	0	0	6,336
40-44	685	1,472	1,573	1,696	1,549	1,013	76	0	8,064
45-49	601	1,210	1,427	1,571	1,449	1,721	901	67	8,947
50-54	404	851	1,026	1,222	1,015	1,329	1,238	707	7,792
55-59	183	409	539	697	589	644	565	915	4,541
60-64	84	174	276	320	303	337	256	401	2,151
65+	44	94	100	79	80	64	46	64	571
ALL	5,870	9,788	7,946	7,375	5,778	5,175	3,082	2,154	47,168

AVERAGE ANNUAL EARNINGS

	Years of Service								
<u>Age</u>	<u><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	18,761	21,974	24,687	0	0	0	0	0	19,949
25-29	22,252	26,228	30,245	26,894	0	0	0	0	25,129
30-34	21,494	28,701	33,897	34,326	31,819	0	0	0	29,237
35-39	22,074	30,815	35,729	37,811	35,952	33,949	0	0	32,853
40-44	23,170	30,647	36,417	39,192	39,493	38,279	37,407	0	35,656
45-49	23,038	31,101	37,200	39,560	40,679	42,894	40,878	40,654	37,893
50-54	23,517	31,867	37,347	38,990	39,997	44,144	46,893	45,239	40,026
55-59	21,896	31,839	37,823	38,457	39,137	42,597	46,082	48,049	40,675
60-64	17,464	26,404	37,051	37,140	36,697	40,159	42,326	48,627	38,661
65+	18,733	14,036	31,525	38,228	36,127	40,953	40,266	45,613	32,572
ALL	21,741	29,075	36,002	38,543	39,142	41,957	44,274	46,932	35,264

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

Age	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	25-29	<u>30+</u>	ALL
All	127	284	286	284	226	217	136	101	1,663

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				Years I	Retired			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	11	7	0	0	0	0	0	18
55-59	304	433	5	0	0	0	0	742
60-64	455	963	621	6	0	0	0	2,045
65-69	244	1,320	1,566	229	0	0	0	3,359
70-74	35	237	1,801	1,104	96	0	0	3,273
75-79	15	45	354	1,472	830	14	0	2,730
80-84	2	12	41	210	1,240	370	10	1,885
85+	0	0	0	8	134	887	589	1,618
ALL	1,066	3,017	4,388	3,029	2,300	1,271	599	15,670

SERVICE RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

	Years Retired								
Age	<u><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	0	0	0	0	0	0	0	0	
50-54	11,330	11,162	0	0	0	0	0	11,265	
55-59	11,451	9,382	14,318	0	0	0	0	10,263	
60-64	11,990	11,458	13,517	11,803	0	0	0	12,203	
65-69	10,457	10,944	14,528	13,960	0	0	0	12,785	
70-74	8,168	9,859	12,497	13,812	16,260	0	0	12,814	
75-79	4,963	9,029	12,400	11,691	12,932	14,102	0	12,092	
80-84	9,346	8,798	13,257	9,529	11,255	11,225	7,589	11,063	
85+	0	0	0	9,975	9,966	8,580	8,140	8,542	
ALL	11,249	10,762	13,368	12,481	11,994	9,411	8,131	11,828	

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

Age	<u><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	11,991	32,468	58,658	37,804	27,586	11,961	4,870	185,344

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				Years Sinc	e Death			
Age	<u><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	16	64	22	6	1	1	0	110
50-54	12	31	10	7	0	0	0	60
55-59	11	53	43	8	4	0	0	119
60-64	31	49	58	14	3	0	1	156
65-69	26	74	77	44	11	2	2	236
70-74	31	85	88	61	43	4	3	315
75-79	25	89	95	43	51	31	4	338
80-84	15	61	81	28	34	28	17	264
85+	9	30	41	13	13	32	75	213
ALL	176	536	515	224	160	98	102	1,811

SURVIVORS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

		,		Years Sin	ice Death			
Age	<u><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	4,003	7,401	5,931	5,814	4,707	702	0	6,441
50-54	9,845	8,724	6,253	7,076	0	0	0	8,344
55-59	8,496	10,705	9,997	7,432	9,689	0	0	9,991
60-64	10,901	9,461	10,515	9,024	7,104	0	5,767	10,031
65-69	12,495	11,111	12,327	9,542	8,655	11,594	5,441	11,209
70-74	13,259	13,316	11,455	10,446	11,919	4,629	8,911	11,892
75-79	10,665	11,416	10,275	10,522	11,410	7,840	3,115	10,499
80-84	11,523	12,592	9,928	10,549	10,730	8,111	6,902	10,416
85+	11,107	7,268	8,633	7,901	6,963	10,810	7,573	8,353
ALL	10,732	10,693	10,338	9,722	10,686	8,760	7,266	10,178

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

Age	<u><1</u>	1-4	<u>5-9</u>	<u>10-14</u>	15-19	20-24	<u>25+</u>	ALL
All	1,888	5,731	5,324	2,177	1,709	858	741	18,432

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				Years D	isabled			
Age	<u><1</u>	1-4	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL
<50	25	73	35	6	1	0	0	140
50-54	26	39	36	10	1	1	0	113
55-59	25	65	46	5	4	1	0	146
60-64	25	81	62	14	4	2	1	189
65-69	2	32	69	23	8	5	0	139
70-74	0	0	25	32	18	6	2	83
75-79	0	0	0	13	53	35	10	111
80-84	0	0	0	0	14	35	8	57
85+	0	0	0	0	1	13	15	- 29
ALL	103	290	273	103	104	98	36	1,007

DISABILITY RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

		,		Years Di	sabled			
Age	<u><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	7,373	7,630	5,896	2,761	2,709	0	0	6,907
50-54	9,600	8,283	7,810	7,198	8,962	5,711	0	8,323
55-59	8,072	10,682	11,303	8,563	8,511	7,958	0	10,280
60-64	7,652	9,657	9,159	9,005	7,082	5,548	2,724	9,046
65-69	25,624	9,196	8,492	9,871	4,462	7,684	0	8,868
70-74	0	0	7,845	7,608	9,368	9,654	6,122	8,173
75-79	0	0	0	6,918	9,443	7,055	6,545	8,133
80-84	0	0	0	0	7,917	7,913	5,293	7,546
85+	0	0	0	0	5,711	7,321	6,752	6,971
ALL	8,527	9,141	8,635	7,940	8,610	7,553	6,223	8,505

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS DISABLED

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Age	<1	1-4	<u>5-9</u>	10-14	15-19	<u>20-24</u>	<u>25+</u>	ALL
All	 878	2,650	2,357	817	895	740	224	8,564

Reconciliation Of Members

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		Termir	nated
	Actives	Deferred Retirement	Other Non-Vested
ON JUNE 30, 1998	46,299	11,415	7,168
ADDITIONS	5,736	1,233	1,818
DELETIONS			
1. Service Retirement	(782)	(255)	(3)
2. Disability	(74)	(26)	(1)
3. Death	(48)	(13)	0
4. Terminated - Deferred	(1,171)	0	(21)
5. Terminated - Refund	(1,559)	(300)	(562)
6. Terminated - Other Non-Vested	(1,519)	(3)	0
7. Returned as Active	367	(207)	(160)
8. Transferred (to)/from Other Fund	(37)	0	0
DATA ADJUSTMENTS	(44)	(1,181)	(19)
Vested	35,353		
Non-Vested	11,815		
TOTAL ON JUNE 30, 1999	47,168	10,663	8,220
	ON JUNE 30, 1998 ADDITIONS DELETIONS 1. Service Retirement 2. Disability 3. Death 4. Terminated - Deferred 5. Terminated - Refund 6. Terminated - Refund 6. Terminated - Other Non-Vested 7. Returned as Active 8. Transferred (to)/from Other Fund DATA ADJUSTMENTS Vested Non-Vested TOTAL ON JUNE 30, 1999	Actives ON JUNE 30, 1998 46,299 ADDITIONS 5,736 DELETIONS 1. 1. Service Retirement (782) 2. Disability (74) 3. Death (48) 4. Terminated - Deferred (1,171) 5. Terminated - Refund (1,559) 6. Terminated - Other Non-Vested (1,519) 7. Returned as Active 367 8. Transferred (to)/from Other Fund (37) DATA ADJUSTMENTS (44) Vested 35,353 Non-Vested 11,815 TOTAL ON JUNE 30, 1999 47,168	Image: Market Active Sector Termin Deferred Retirement ON JUNE 30, 1998 46,299 11,415 ADDITIONS 5,736 1,233 DELETIONS 5,736 1,233 DELETIONS (74) (26) 2. Disability (74) (26) 3. Death (48) (13) 4. Terminated - Deferred (1,171) 0 5. Terminated - Refund (1,559) (300) 6. Terminated - Other Non-Vested (1,519) (3) 7. Returned as Active 367 (207) 8. Transferred (to)/from Other Fund (37) 0 DATA ADJUSTMENTS (44) (1,181) Vested 35,353 11,815 TOTAL ON JUNE 30, 1999 47,168 10,663

			Recipients	
		Retirement Annuitants	Disabled	Survivors
A.	ON JUNE 30, 1998	15,185	948	1,697
B.	ADDITIONS	1,140	101	169
C.	 DELETIONS Service Retirement Death Annuity Expired Returned as Active 	0 (578) 0 (27)	0 (46) 0 0	0 (52) 0 0
D.	DATA ADJUSTMENTS	(50)	4	(3)
E.	TOTAL ON JUNE 30, 1999	15,670	1,007	1,811

State Employees Retirement Fund							
Actuarial Balance Sheet (dollars in thousands)							
	JUL	Y 1, 1999					
A.	CURRENT ASSETS (TABLE 1, E6)			\$5,968,692			
B.	EXPECTED FUTURE ASSETS 1. Present Value of Expected Future Statutory Supplemental Contribution	ns (See Table 11)		\$85,648			
	 Present Value of Future Normal Costs Total Expected Future Assets 	、		1,093,123 \$1,178,771			
				Φ7 1 47 462			
C.	TOTAL CURRENT AND EXPECTED FO	JIURE ASSEIS		\$7,147,405			
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total			
	 Benefit Recipients Retirement Annuities Disability Benefits Surviving Spouse		\$1,805,047 80,320 172,048	\$1,805,047 80,320 172,048			
	371,799						
	3. Former Members without Vested Right	S	5,486	5,486			
	4. Active Members						
	 a. Retirement Annuities b. Disability Benefits c. Survivor's Benefits d. Deferred Retirements e. Refund Liability Due to Death or Withdrawal 	12,796 99,799 61,016 4,747 0	2,051,579 0 259,179 27,129	2,064,375 99,799 61,016 263,926 27,129			
	5. Total Current Benefit Obligations	\$178,358	\$4,772,587	\$4,950,945			
E.	EXPECTED FUTURE BENEFIT OBLIG	ATIONS		\$1,606,385			
F.	TOTAL CURRENT AND EXPECTED F	UTURE BENEFIT	OBLIGATIONS	\$6,557,330			
G.	CURRENT UNFUNDED ACTUARIAL	LIABILITY (D5-A	.)	(\$1,017,747)			
H.	CURRENT AND FUTURE UNFUNDED	ACTUARIAL LIA	ABILITY (F-C)	(\$590,133)			

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MILLIMAN & ROBERTSON, INC.

TABLE 8

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

(dollars in thousands)

JULY 1, 1999

		Actuarial	Actuarial	
		Present Value	Present Value	Actuarial
		of Projected	of Future	Accrued
		Benefits	Normal Costs	Liability
A.	DETERMINATION OF ACTUARIAL	(1)	(2)	(3)=(1)-(2)
	ACCRUED LIABILITY (AAL)			
	1. Active Members			
	a. Retirement Annuities	\$3,413,568	\$661,331	\$2,752,237
	b. Disability Benefits	170,730	51,190	119,540
	c. Survivor's Benefit	98,920	29,845	69,075
	d. Deferred Retirements	390,078	173,827	216,251
	e. Refunds Due to Death or Withdrawal	49,334	176,930	(127,596)
	f. Total	\$4,122,630	\$1,093,123	\$3,029,507
	2. Deferred Retirements With Future Augmentation	371,799		371,799
	 Former Members Without Vested Rights 	5,486		5,486
	4. Annuitants in MPRIF	2,054,794		2,054,794
	5. Recipients Not in MPRIF	2,621		2,621
	6. Total	\$6,557,330	\$1,093,123	\$5,464,207
D	DETERMINATION OF UNFUNDED AC		RUFDIIARIIITV	
D.	$1 \Delta \Delta I (\Delta 6)$			\$5 464 207
	2 Current Assets (Table 1 E6)			5.968.692
	3. $UAAL(B1-B2)$			(\$504,485)
	5. OIL (2. 22)			
C.	 DETERMINATION OF SUPPLEMENTAL 1. Present Value of Future Payrolls Throug the Amortization Date of July 1, 2020 	L CONTRIBUTI h	ON RATE	\$25,953,885
	2. Supplemental Contribution Rate (B3/C1)		0.00%

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State Employees Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

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(dollars in thousands)

YEAR ENDING JUNE 30, 1999

А.	UAAL AT BEGINNING OF YEAR	(\$385,361)
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	 Normal Cost and Expenses Contribution Interest on A, B1 and B2 	\$128,647 (132,801) (32,932)
	4. Total (B1+B2+B3)	(\$37,086)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	(\$422,447)
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	 Salary Increases Investment Return MPRIF Mortality Mortality of Other Benefit Recipients Other Items 	(\$33,629) (81,935) (451) (77) <u>34,054</u>
	6. Total	(\$82,038)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	(\$504,485)
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)	(\$504,485)

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Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1999

		Percent of Payroll	Dollar Amount
A.	STATUTORY CONTRIBUTIONS - CHAPTER 352	1 491011	
	 Employee Contributions Employer Contributions 	4.00% 4.00%	\$70,309 70,309
	3. Total	8.00%	\$140,618
B.	REQUIRED CONTRIBUTIONS - CHAPTER 356		
	 Normal Cost Retirement Benefits Disability benefits Survivors Deferred Retirement Benefits Refunds Due to Death or Withdrawal 	4.50% 0.34% 0.20% 1.16% 1.32%	\$79,123 5,896 3,430 20,385 23,152
	f. Total	7.52%	\$131,986
	2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	0.00%	0
	3. Allowance for Expenses	0.15%	2,637
	4. Total	7.67%	\$134,623
C.	CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	0.33%	\$5,995

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1999 is \$1,757,716.

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Summary of Actuarial Assumptions and Methods

Interest:	Pre-Retirement: Post-Retirement	8.5% per annum : 6.0% per annum
Salary Increases:	Reported salary a rate table below t future year. Prior Members.	t valuation date increased according to the o current fiscal year and annually for each fiscal year salary is annualized for new
Mortality:	Pre-Retirement : Male - Female -	1983 Group Annuity Mortality Table for males setback four years. 1983 Group Annuity Mortality Table for females set back two years.
,	Post-Retirement Male - Female -	1983 Group Annuity Mortality Table for males. 1983 Group Annuity Mortality Table for females.
	Post-Disability : Male - Female -	Combined Annuity Mortality Table Combined Annuity Mortality Table
Retirement Age:	Graded rates beg who have attained in one year. In a each year that the	inning at age 58 as shown in rate table. Members d the highest assumed retirement age will retire ddition, 25% of Members are assumed to retire by are eligible for the Rule of 90.
Separation:	Graded rates base June 30, 1971 ex	ed on actual experience developed by the perience analysis. Rates are shown in rate table.
Disability:	Rates adopted by	MSRS as shown in rate table.
Expenses:	Prior year admin prior year payrol	istration expenses expressed as a percentage of l.

TABLE 12
(Continued)

Return of Contributions:	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.				
Family Composition:	85% of Members are assumed to be married. Female is three years younger than male.				
Social Security:	N/A	N/A			
Benefit Increases After Retirement:	Payment of earn accounted for b	Payment of earnings on retired reserves in excess of 6% accounted for by 6% post-retirement assumptions.			
Special Consideration:	Married Members assumed to elect subsidized joint and survivor form of annuity as follows:				
	Males -	25% elect 50% J&S option 45% elect 100% J&S option			
,	Females -	5% elect 50% J&S option 5% 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	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 5% per annum.				

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Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

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	Pre-retirement Death		With	Withdrawal Disability		Retirement		Sel	
Age	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	Salary Increases
20	3	2	2,400	3,700	0	0	0	0	7.75%
21	3	2	2,250	3,550	0	0	0	0	7.1454
22	4	2	2,080	3,390	0	0	0	0	7.1094
23	4	2	1,920	3,230	0	0	0	0	7.0725
24	4	2	1,760	3,070	0	0	0	0	7.0363
25	4	2	1,600	2,910	0	0	0	0	7
26	4	2	1,470	2,750	0	0	0	0	7
27	4	3	1,340	2,600	0	0	0	0	7
28	4	3	1,230	2,430	0	0	0	0	7
29	5	3	1,130	2,270	0	0	0	0	7
30	5	3	1,040	2,120	2	0	0	0	7
31	5	3	950	1,970	2	0	0	0	7
32	5	3	890	1,820	2	0	0	0	7
33	6	4	830	1,680	2	0	0	0	7
34	6	4	770	1,540	2	0	0	0	7
35	6	4	720	1,410	2	1	0	0	7
36	7	4	680	1,300	2	1	0	0	6.9019
37	7	5	640	1,190	2	1	0	0	6.8074
38	8	5	600	1,090	2	1	0	0	6.7125
39	9	5	560	1,000	2	2	0	0	6.6054
40	9	6	530	920	2	2	0	0	6.5
41	10	6	500	850	2	2	0	0	6.354
42	10	7	480	780	2	4	0	0	6.2087
43	11	7	460	720	3	4	0	0	6.0622
44	12	8	430	680	3	4	0	0	5.9048
45	14	8	410	630	3	5	0	0	5.75
46	15	9	390	590	5	6	0	0	5.6940
47	17	10	370	560	7	7	0	0	5.6375
48	19	11	350	530	9	7	0	0	5.5822
49	22	12	340	500	11	10	0	0	5.5405

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Pre-retirement Death		<u>Withdrawal</u>				<u>Retirement</u>		Calarra
<u>Age</u>	<u>Male</u>	<u>Female</u>	Male	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	Salary Increases
50	25	14	320	470	14	10	0	0	5.5%
51	28	15	300	440	16	12	0	0	5.4384
52	31	16	280	410	20	14	0	0	5.3776
53	35	18	260	390	24	16	0	0	5.3167
54	39	19	240	360	28	20	0	0	5.2826
55	43	21	210	330	34	24	0	0	5.25
56	48	23	170	290	40	30	0	0	5.25
57	52	25	140	230	46	36	0	0	5.25
58	57	28	90	170	56	44	50	50	5.25
59	61	31	40	90	66	52	50	50	5.25
60	66	34	0	0	76	62	150	150	5.25
61	71	38	0	0	90	74	150	150	5.25
62	77	42	0	0	110	88	500	500	5.25
63	84	47	0	0	136	104	350	350	5.25
64	92	52	0	0	174	122	1,100	1,100	5.25
65	101	58	0	0	0	0	10,000	10,000	5.25
66	111	64	0	0	0	0	0	0	5.25
67	124	71	0	0	0	0	0	0	5.25
68	139	78	0	0	0	0	0	0	5.25
69	156	87	0	0	0	0	0	0	5.25
70	176	97	0	0	0	0	0	0	5.25

Summary of Plan Provisions

GENERAL

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Eligibility:	State employees, non-academic staff of the University of Minnesota and employees of certain Metro level governmental units, unless excluded by law.
Contributions:	
Member:	4.00% of salary.
Employer:	4.00% of salary.
Allowable Service:	Service during which Member contributions were made. May also include certain leaves of absence, military service and periods while temporary Worker's Compensation is paid. Excludes lump sum vacation pay at termination.
Salary:	Includes wages, allowances and fees. Excludes lump-sum payments at separation, employer contributions to deferred compensation and tax-sheltered annuity plans and benevolent vacation and sick leave donation programs.
Average Salary:	Average of the five highest successive years (60 successive months) 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:
0	Age 65 and three years of Allowable Service. Proportionate
	Retirement Annuity is available at age 65 and one year of
	Allowable Service.

	The greater of age 65 or the age eligible for full Social Security retirement benefits (but not higher than age 66) and three years of Allowable Service. Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.
Amount:	1.7% 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 2% of Average Salary for each of the first 10 years of Allowable Service and 1.7% 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; Nore 1.7% 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: 1.7% of Average Salary for each year of Allowable Service assuming augmentation to the age eligible for full Social Security retirement benefit (but not higher than age 66) at 3% per year and actuarial reduction for each month the Member is under the Social Security retirement age (but not higher than age 66).

First hired after June 30, 1989:

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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. 15 year certain and life thereafter.

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 the greater of \$25 times each full year of Allowable Service or \$400 per full year of service less any Social Security benefits received or annuity from a Minnesota public employee pension plan. 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

Disability Benefit:

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.

	actuarial increase shall be made for the change in the post- retirement interest rates from 5% to 6%.
	Payments stop if disability ceases or death occurs. Payments revert 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:	Same as for retirement.

If a Member became disabled prior to July 1, 1997 but was not eligible to commence their benefit before July 1, 1997, an

Retirement After Disability:

Eligibility:	Normal retirement age with continued disability.
Amount:	Any optional annuity continues. Otherwise, a normal retirement benefit equal to the disability benefit paid before normal retirement age, or an actuarially equivalent optional annuity.
Benefit Increases:	Same as for retirement.

DEATH

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Surviving Spouse Optional Benefit:

Eligibility: Member or former Member who dies before retirement or disability benefits commence with three years of Allowable Service. If a former Member dies before age 55 and has less than 30 years of Allowable Service, benefits commence when the former Member would have been age 55. If an active Member dies, benefits may commence immediately, regardless of age.

Amount:	Surviving spouse receives the 100% joint and survivor benefit the Member could have elected if terminated. If commencement is prior to age 55, the appropriate early retirement formula described above applies except that one-half the monthly reduction factor is used from age 55 to the commencement age and the Rule of 90 does not apply. In lieu of this benefit, the surviving spouse may elect a refund of contributions with interest or an actuarially equivalent term certain annuity.
	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.
Benefit Increases:	Same as for retirement.

Surviving Dependent Children's Benefit:

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Eligibility:	If no surviving spouse, all dependent children (biological or adopted) below age 20 who are dependent for more than half of their support on deceased Member.
Amounts:	Actuarially equivalent to surviving spouse 100% joint and survivor annuity payable to the later of age 20 or five years. The amount is to be proportionally divided among surviving children.
	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.
Refund of Contributions:	
Eligibility:	Active employee dies and survivor benefits are not payable, or a former employee dies before annuity begins, or a former employee who is not entitled to an annuity dies.

Amount:	The Member's contributions with 5% interest if death occurred before May 16, 1989, and 6% interest if death occurred on or after May 16, 1989.		
Eligibility:	Retired or disabled annuitant who did not select an optional annuity dies, or the remaining recipient of an option dies.		
Amount:	The excess of the Member's contributions over all benefits paid.		

TERMINATION

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Refund of Contributions:

	Eligibility:	Termination of state service.
	Amount:	Member's contributions with 5% interest compounded annually if termination occurred before May 16, 1989 and 6% interest compounded annually if termination occurred on or after May 16, 1989. A deferred annuity may be elected in lieu of a refund.
Defe	rred Benefit:	
	Eligibility:	Three 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 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. If a Member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.

SIGNIFICANT CHANGES

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There was a change in the plan provisions for a small number of employees. This change and the resulting costs for that group have been summarized in Table 18.

TABLE 14

State Employees Retirement Fund

SCHEDULE OF FUNDING PROGRESS (dollars in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (A)	Actuarial Accrued Liability (AAL) (B)	Unfunded AAL (UAAL) (B - A)	Funded Ratio (A)/(B)	Actual Covered Payroll (Previous FY) (C)	UAAL as % of Covered Payroll (B - A) / (C)
0.5/01/01						
07/01/91	2,304,311	2,883,603	579,292	79.91%	1,370,964	42.25%
07/01/92	2,613,472	3,125,299	511,827	83.62%	1,409,108	36.32%
07/01/93	2,905,578	3,563,492	657,914	81.54%	1,482,005	44.39%
07/01/94	3,158,068	3,876,584	718,516	81.47%	1,536,978	46.75%
07/01/95	3,462,098	3,795,926	333,828	91.21%	1,514,177	22.05%
07/01/96	3,975,832	4,087,273	111,441	97.27%	1,560,369	7.14%
07/01/97	4,664,519	4,519,542	(144,977)	103.21%	1,568,747	-9.24%
07/01/98	5,390,526	5,005,165	(385,361)	107.70%	1,557,880	-24.74%
07/01/99	5,968,692	5,464,207	(504,485)	109.23%	1,649,469	-30.58%

TABLE 15

State Employees Retirement Fund

SCHEDULE OF EMPLOYER CONTRIBUTIONS (dollars in thousands)

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
1991	8.17%	1,370,964	56,895	55,113	57,986	105.21%
1992	7.86%	1,409,108	58,478	52,278	59,244	113.32%
1993	8.27%	1,482,005	59,132	63,430	58,982	92.99%
1994	8.93%	1,536,978	62,555	74,697	60,741	81.32%
1995	9.15%	1,514,177	61,627	76,920	63,161	82.11%
1996	8.05%	1,560,369	63,507	62,103	65,557	105.56%
1997	7.21%	1,568,747	63,848	49,259	66,568	135.14%
1998	7.13% **	1,557,880	62,901	48,176	62,315	129.35%
1999	6.48% **	1,649,469	66,823	40,063	65.979	164.69%
1999	6.12% **					

* Includes contributions from other sources (if applicable).

** Actuarially Required Contribution Rate calculated according to parameters of GASB 25 using a 30-year amortization of the negative unfunded accrued liability

Military Affairs Calculation

Section 352.85 of Chapter 352 of Minnesota Statutes provides that certain military affairs personnel may retire, with an unreduced benefit, at age 60. In addition, they may receive disability benefits upon being found disqualified for retention in active military duty. To fund these special benefits, employees and employer contribute an extra 1.6% of payroll.

To recognize the effect of the unreduced early retirement benefit available at age 60, we have assumed that all military affairs personnel will retire at age 60 or, if over age 60, one year from the valuation date.

The results of our calculations are as follows:

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1.	Number of Active Members		
2.	Projected Annual Earnings \$3		
3.	Norm	al Cost	
	a.	Dollar Amount	\$ 17,564
	b.	Percent of Payroll	10.65%

Pilots Calculation

Section 352.86 of chapter 352 of Minnesota Statutes provides that certain transportation department pilots may retire, with an unreduced benefit, at age 62. In addition, they may receive disability benefits upon being found disqualified for retention as pilots. To fund these special benefits, employees and employer contribute an extra 1.6% of payroll.

To recognize the effect of the unreduced early retirement benefit available at age 62, we have assumed that all pilots will retire at age 62 or, if over age 62, one year from the valuation date.

The results of our calculations are as follows:

1.	Num	5	
2.	Proje	ected Annual Earnings	\$371,297
3.	Norr	nal Cost	
	a.	Dollar Amount	\$ 44,618
	b.	Percent of Payroll	12.02%

Fire Marshals Calculation

Section 352.87 of chapter 352 of Minnesota Statutes provides that deputy state fire marshals may retire, with an unreduced benefit with respect to service after July 1, 1999, at age 55. Credited service after July 1, 1999 accrues retirement benefits at a rate of 2.0% per year and disability benefits are based on a minimum of 15 years of service (20 years if duty related). To fund these special benefits, employees contribute an extra 2.78% of payroll and employers contribute an extra 4.20% of payroll.

To recognize the effect of the unreduced early retirement benefit available at age 55, we have assumed that all fire marshals will retire in accordance with the retirement assumptions which apply to the members of the Correctional Employees Retirement Fund.

The results of our calculations are as follows:

)

1.	Nun	11	
2.	Proj	\$488,110	
3.	Nor	mal Cost for Post-7/1/99 Benefits	
	a.	Dollar Amount	\$ 47,882
	b.	Percent of Payroll	9.81%

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State Patrol Retirement Fund ACTUARIAL VALUATION REPORT

July 1, 1999




Internationally WOODROW MILLIMAN

Suite 400, 15800 Bluemound Road, Brookfield, Wisconsin 53005-6069 Telephone: 414/784-2250 Fax: 414/784-7287

December 3, 1999

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

RE: State Patrol 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, 1999.

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 Minnesota State Retirement System.

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.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.

Thomas K. Custis, F.S.A., M.A.A.A.

Thomas K. Custis, F.S.A., M.A.A.A. Consulting Actuary

William V. Hogan

William V. Hogan, F.S.A., M.A.A.A. Consulting Actuary

TKC/WVH/bh

Albany, Atlanta, Boston, Chicago, Dallas, Denver, Hartford, Houston, Indianapolis, Irvine, Los Angeles, Milwaukee, Minneapolis, New York, Omaha, Philadelphia, Phoenix, Portland, ME, Portland, OR, St. Louis, Salt Lake City, San Diego, San Francisco, Seattle, Tampa, Washington, D.C., Bermuda, Tokyo

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FUNDING STATUS

Table 15 -Schedule of Employer Contributions2027

Report Highlights

(dollars in thousands)

		07/01/98 Valuation	07/01/99 Valuation
А.	CONTRIBUTIONS (Table 11)1. Statutory Contributions - Chapter 352B% of Payroll	21.00%	21.00%
	 Required Contributions - Chapter 356 % of Payroll 	14.14%	13.21%
	3. Sufficiency (Deficiency): (A.1 A.2.)	6.86%	7.79%
B.	FUNDING RATIOS 1. Accrued Benefit Funding Ratio		
	a. Current Assets (Table 1)	\$430,011	\$472,687
	b. Current Benefit Obligations (Table 8)	\$360,381	\$395,047
	c. Funding Ratio: (a/b)	119.32%	119.65%
	2. Accrued Liability Funding Ratio		
	a. Current Assets (Table 1)	\$430,011	\$472,687
	b. Actuarial Accrued Liability (Table 9)	\$371,369	\$406,215
	c. Funding Ratio: (a/b)	115.79%	116.36%
	3. Projected Benefit Funding Ratio (Table 8)		
	a. Current and Expected Future Assets	\$517,813	\$568,938
	b. Current and Expected Future Benefit Obligations	\$470,546	\$514,828
	c. Funding Ratio: (a/b)	110.05%	110.51%
C.	PLAN PARTICIPANTS 1. Active Members		
	a. Number (Table 3)	806	825
	b. Projected Annual Earnings	\$45,217	\$47,034
	c. Average Annual Earnings (Projected \$)	\$56,101	\$57,011
	d. Average Age	42.1	41.0
	e. Average Service	14.6	13.2
	2. Others		
	a. Service Retirements (Table 4)	462	503
	b. Survivors (Table 5)	137	146
	c. Disability Retirements (Table 6)	21	23
	d. Deferred Retirements (Table 7)	21	23
	e. Terminated Other Non-vested (Table 7)	7	
	f. Total	648	705

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:

- 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 119.65%. The corresponding ratio for the prior year was 119.32%
- 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 1999 the ratio is 116.36%, which is an increase from the 1998 value of 115.79%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 110.51% verifies that the current statutory contributions are sufficient.

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 E1 to E6. 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.

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 as follows:

- <u>For Active Members</u> 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

Disclosure of the Current Benefit Obligation amounts used to be required by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 has been superceded by Statement No. 25. Tables 14 and 15 of this report are included to fulfill the requirements of Statement No. 25.

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 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.

Source 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 expectations. 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:

- Normal costs based on the Entry Age Normal Actuarial Cost Method.
- A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.
- An Allowance for Expenses.

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 21.00% compared to the Required Contribution Rate of 13.21%.

Changes in Actuarial Assumptions

There were no changes in actuarial assumptions since the last valuation.

Changes in Plan Provisions

There were no significant changes in plan provisions since the last valuation.

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Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1999

		Market Value	Cost Value
A.	ASSETS IN TRUST	\$5 826	\$5 876
	2 Fixed Income	57 200	58 644
	3 Fauity	203 261	163 854
	4 Real Estate	9 537	7 707
	5 Equity in MPRIF	225 179	225 179
	6. Other	0	0
	Subtotal	\$501,012	\$461,210
B.	ASSETS RECEIVABLE	660	660
C.	LIABILITIES	(2,450)	(2,450)
D.	 NET ASSETS HELD IN TRUST FOR PENSION BENEFITS 1. MPRIF Reserves 2. Member Reserves 3. Other Non-MPRIF Reserves 4. Total Assets Available for Benefits 	225,179 35,405 238,638 \$499,222	225,179 35,405 198,836 \$459,420
E.	DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
	1. Cost Value of Assets Available		\$459,420
	for Benefits (D4)		
	2. Market Value (D4)	\$499,222	
	3. Cost Value (D4)	459,420	
	4. Market Over Cost: (E2-E3)	\$39,802	
	5. One-third of Market Over Cost: (E4)/3		13,267
	 Actuarial Value of Assets (E1+E5) (Same as "Current Assets") 		\$472,687

Statement of Change In Plan Net Assets (dollars in thousands)

YEAR ENDING JUNE 30, 1999

		Market Value	Cost Value
A.	ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$455,254	\$417,390
B.	ADDITIONS		
	1. Member Contributions	\$3,850	\$3,850
	2. Employer Contributions	5,712	5,712
	3. Contributions From Other Sources	0	0
	4. MPRIF Income	28,891	28,891
	5. Net Investment Income		
	a. Interest and Dividends	26,525	26,525
	b. Net Realized Gain (Loss)	0	0
	c. Net Change in Unrealized Gain (Loss)	1,939	0
	d. Investment Expenses	(339)	(339)
	Net Subtotal	28,125	26,186
	6. Other	17	17
	7. Total Additions	\$66,595	\$64,657
C.	OPERATING EXPENSES		
	1. Service Retirements paid from MPRIF	\$22,226	\$22,226
	2. Service Retirements paid from plan assets	0	0
	2. Disability Benefits	0	0
	3. Survivor Benefits	0	0
	4. Refunds	17	17
	6. Administrative Expenses	74	74
	7. Other	310	310
	8. Total Disbursements	\$22,627	\$22,627
D.	OTHER CHANGES IN RESERVES	0	0
E.	ASSETS AVAILABLE AT END OF PERIOD	\$499,222	\$459,420

ACTIVE MEMBERS AS OF JUNE 30, 1999

_	Years of Service									
Age	<u><1</u>	1-4	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	25-29	<u>30+</u>	ALL	
<25	9	7	0	0	0	0	0	0	16	
25-29	35	45	9	0	0	0	0	0	89	
30-34	16	43	34	13	0	0	0	0	106	
35-39	11	29	38	56	20	0	0	0	154	
40-44	4	12	23	27	84	8	0	0	158	
45-49	0	5	8	14	40	50	10	0	127	
50-54	0	2	5	5	17	37	59	16	141	
55-59	0	2	1	1	2	5	11	9	31	
60-64	0	0	0	0	0	1	0	1	2	
65+	0	0	0	0	0	0	0	1	1	
ALL	75	145	118	116	163	101	80	27	825	

AVERAGE ANNUAL EARNINGS

	Years of Service									
Age	<u><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	21,846	42,101	0	0	0	0	0	0	30,708	
25-29	15,982	45,657	49,657	0	0	0	0	0	34,392	
30-34	20,090	47,024	54,143	59,287	0	0	0	0	46,746	
35-39	25,353	47,045	54,528	57,828	58,344	0	0	0	52,731	
40-44	42,588	47,579	56,395	58,889	61,400	68,915	0	0	59,097	
45-49	0	52,776	61,021	58,040	59,842	60,408	63,667	0	59,963	
50-54	0	54,391	58,486	57,417	59,572	62,073	64,057	60,109	61,978	
55-59	0	56,524	64,502	67,842	63,374	60,895	61,688	57,290	60,348	
60-64	0	0	0	0	0	63,858	0	83,490	73,674	
65+	0	0	0	0	0	0	0	57,403	57,403	
ALL	20,356	46,843	55,102	58,333	60,476	61,750	63,683	59,935	53,812	

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

Age	<1	<u>1-4</u>	<u>5-9</u>	10-14	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	ALL
All	1,526	6,792	6,502	6,766	9,857	6,236	5,094	1,618	44,394

MILLIMAN & ROBERTSON, INC.

_	Years Retired									
Age	<u><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	0	0	0	0	0	0	0	0		
50-54	6	5	0	0	0	0	0	11		
55-59	39	65	4	0	0	0	0	108		
60-64	9	20	59	1	0	0	0	89		
65-69	1	1	19	54	0	0	0	75		
70-74	0	3	7	37	60	0	0	107		
75-79	0	0	1	7	36	21	0	65		
80-84	0	0	0	0	10	17	10	37		
85+	0	0	0	0	0	0	11	11		
ALL	55	94	90	99	106	38	21	503		

SERVICE RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

	Years Retired								
Age	<u><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	0	0	0	0	0	0	0	0	
50-54	35,993	30,408	0	0	0	0	0	33,454	
55-59	43,033	40,563	31,563	0	0	0	0	41,122	
60-64	42,739	46,153	41,236	29,472	0	0	0	42,361	
65-69	46,732	48,796	50,025	39,235	0	0	0	42,196	
70-74	0	39,053	34,070	44,040	38,060	0	0	39,895	
75-79	0	0	32,084	37,963	43,050	29,722	0	38,028	
80-84	0	0	0	0	30,216	33,119	25,782	30,351	
85+	0	0	0	0	0	0	25,629	25,629	
ALL	42,284	41,252	42,003	40,842	39,015	31,242	25,702	39,542	

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

-								
Age	<u><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	2,325	3,877	3,780	4,043	4,135	1,187	539	19,889

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	Years Since Death									
Age	<u><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	1 .	13	0	0	0	1	0	15		
50-54	0	2	0	0	0	0	0	2		
55-59	1	6	0	1	0	0	0	8		
60-64	1	1	4	1	0	0	0	7		
65-69	4	0	4	0	3	2	3	16		
70-74	2	5	7	2	5	3	2	26		
75-79	2	0	6	2	2	4	2	. 18		
80-84	0	4	11	0	0	3	10	28		
85+	0	1	2	2	0	0	21	26		
ALL	11	32	. 34	8	10	13	38	146		

SURVIVORS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

				Years Sin	ce Death			
<u>Age</u>	<u><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	10,025	9,118	0	0	0	7,822	0	9,092
50-54	0	28,237	0	0	0	0	0	28,237
55-59	18,008	20,461	0	20,038	0	0	0	20,102
60-64	17,598	16,194	8,958	25,386	0	0	0	13,573
65-69	29,768	0	19,449	0	45,339	16,354	16,024	25,854
70-74	26,518	28,781	19,128	29,573	40,888	25,472	16,918	27,103
75-79	19,674	0	18,152	29,502	36,244	25,422	11,573	22,477
80-84	0	13,624	15,614	0	0	15,584	18,326	16,295
85+	0	16,545	18,299	20,110	0	0	17,343	17,599
ALL	23,372	16,529	16,611	25,474	41,295	20,414	17,172	19,763

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS SINCE DEATH

Age	<u><1</u>	1-4	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
All	257	528	564	203	412	265	652	2,885

	Years Disabled							
Age	<u><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	2	2	2	0	0	0	0	6
50-54	0	1	0	0	0	0	0	1
55-59	0	1	3	2	1	0	0	7
60-64	0	0	1	1	0	0	0	2
65-69	0	0	0	1	0	2	0	3
70-74	0	0	0	0	0	2	1	3
75-79	0	0	0	0	0	0	1	1
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	2	4	6	4	1	4	2	23

DISABILITY RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

		,		Years D	isabled			
<u>Age</u>	<u><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	24,688	16,911	27,961	0	0	0	0	23,187
50-54	0	38,180	0	0	0	0	0	38,180
55-59	0	40,499	36,767	20,981	27,005	0	0	31,395
60-64	0	0	42,939	35,202	0	0	0	39,071
65-69	0	0	0	44,117	0	28,274	0	33,555
70-74	0	0	0	0	0	33,662	31,814	33,046
75-79	0	0	0	0	0	0	15,369	15,369
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	24,688	28,125	34,860	30,320	27,005	30,968	23,592	30,017

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED

Age	≤1	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL
All	49,376	112,500	209,160	121,280	27,005	123,872	47,184	690,391

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Reconciliation Of Members

			Termin	ated
			Deferred	Other
		Actives	Retirement	Non-Vested
A.	ON JUNE 30, 1998	806	21	7
B.	ADDITIONS	82	3	3
C.	DELETIONS			
	1. Service Retirement	(54)	(1)	0
	2. Disability	0	0	0
	3. Death	0	0	0
	4. Terminated - Deferred	(3)	0	0
	5. Terminated - Refund	0	0	0
	6. Terminated - Other Non-Vested	0	0	0
	7. Returned as Active	0	0	0
	8. Transferred (to)/from Other Fund	0	0	0
D.	DATA ADJUSTMENTS	(6)	0	0
	Vested	642		
	Non-Vested	183		
E.	TOTAL ON JUNE 30, 1999	825	23	10

		Recipients			
		Retirement Annuitants	Disabled	Survivors	
A.	ON JUNE 30, 1998	462	21	137	
B.	ADDITIONS	55	2	11	
C.	DELETIONS	0	٥	0	
	 Service Retirement Death 	(14)	0	(4)	
	3. Annuity Expired	0	0	0	
	4. Returned as Active	0	0	0	
D.	DATA ADJUSTMENTS	0	0	2	
E.	TOTAL ON JUNE 30, 1999	503	23	146	

	State Patroi	Keurement Funu			
	Actuarial (dollars	Balance Sheet in thousands)			
	JUL	Y 1, 1999			
A.	CURRENT ASSETS (TABLE 1, E6)		\$472,687		
B.	 EXPECTED FUTURE ASSETS 1. Present Value of Expected Future Statutory Supplemental Contribution 2. Present Value of Future Normal Costs 		(\$12,362)		
	3. Total Expected Future Assets		-	\$96,251	
C.	TOTAL CURRENT AND EXPECTED F	UTURE ASSETS		\$568,938	
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total	
	a. Retirement Annuities		\$194,335	\$194,335	
	b. Disability Benefits		7,641	7,641	
	c. Surviving Spouse and Child Benefits		24,223	24,223	
	2. Deferred Retirements with Future Augr	nentation	2,737	2,737	
	3. Former Members without Vested Right	S	259	259	
	4. Active Members				
	a. Retirement Annuities	1,422	144,569	145,991	
	b. Disability Benefits	11,081	0	11,081	
	c. Survivor's Benefits	6,248	0	6,248	
	d. Deferred Retirements	82	2,385	2,467	
	e. Refund Liability Due to Death or Withdrawal	0		65	
	5. Total Current Benefit Obligations	\$18,833	\$376,214	\$395,047	
E.	EXPECTED FUTURE BENEFIT OBLIG	ATIONS		\$119,781	
F.	TOTAL CURRENT AND EXPECTED F	UTURE BENEFIT	OBLIGATIONS =	\$514,828	
G.	CURRENT UNFUNDED ACTUARIAL	LIABILITY (D5-A)		(\$77,640)	
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C) (\$54,110)				

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

(dollars in thousands)

JULY 1, 1999

		Actuarial	Actuarial	
		Present Value	Present Value	Actuarial
		of Projected	of Future	Accrued
		Benefits	Normal Costs	Liability
A.	DETERMINATION OF ACTUARIAL	(1)	(2)	(3)=(1)-(2)
	ACCRUED LIABILITY (AAL)			
	1. Active Members			
	a. Retirement Annuities	\$250,930	\$87,219	\$163,711
	b. Disability Benefits	19,377	10,965	8,412
	c. Survivor's Benefit	10,905	6,568	4,337
	d. Deferred Retirements	4,276	3,175	1,101
	e. Refunds Due to Death or Withdrawal	145	686	(541)
	f. Total	\$285,633	\$108,613	\$177,020
	2. Deferred Retirements With Future Augmentation	2,737		2,737
	3. Former Members Without Vested Rights	. 259		259
	4. Annuitants in MPRIF	225,179		225,179
	5. Recipients Not in MPRIF	1,020		1,020
	6. Total	\$514,828	\$108,613	\$406,215
-				
В.	DETERMINATION OF UNFUNDED AC.	I UARIAL ACCI	CUED LIABILITY ((UAAL) \$406.215
	I. AAL (A6)			\$400,213 172.687
	2. Current Assets (Table 1, EO)			(\$66 472)
	3. UAAL (BI-B2)			(\$00,472)
С	DETERMINATION OF SUPPLEMENTAL	L CONTRIBUTI	ON RATE	
0.	 Present Value of Future Payrolls Throug the Amortization Date of July 1, 2020 	;h		\$694,491
	2. Supplemental Contribution Rate (B3/C1)		-9.57%

Changes In Unfunded Actuarial Accrued Liability (UAAL) (dollars in thousands)

YEAR ENDING JUNE 30, 1999

A.	UAAL AT BEGINNING OF YEAR	(\$58,642)
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	 Normal Cost and Expenses Contribution Interest on A, B1 and B2 	\$10,238 (9,562) (4,956)
	4. Total (B1+B2+B3)	(\$4,280)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	(\$62,922)
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	 Salary Increases Investment Return MPRIF Mortality Mortality of Other Benefit Recipients Other Items 	(\$887) (6,629) 2,283 (23) 1,706
	6. Total	(\$3,550)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	(\$66,472)
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)	(\$66,472)

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Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1999

		Percent of Payroll	Dollar Amount
А.	STATUTORY CONTRIBUTIONS - CHAPTER 352B		
	1. Employee Contributions	8.40%	\$3,951
	2. Employer Contributions	12.60%	5,926
	3. Total	21.00%	\$9,877
B.	REQUIRED CONTRIBUTIONS - CHAPTER 356		
	 Normal Cost a. Retirement Benefits 	18.12%	\$8,522
	b. Disability benefits	2.32%	1,090
	c. Survivors	1.40%	660
	d. Deferred Retirement Benefits	0.64%	300
	e. Refunds Due to Death or Withdrawal	0.14%	64
	f. Total	22.62%	\$10,636
	2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	-9.57%	(4,501)
	3. Allowance for Expenses	0.16%	75
	4. Total	13.21%	\$6,210
C.	CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	7.79%	\$3,667

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1999 is \$47,034.

Summary of Actuarial Assumptions and Methods

Interest:	Pre-Retirement :	8.5% per annum	
•	Post-Retirement:	6.0% per annum	
Salary Increases:	Reported salary at rate table below to future year. Prior Members.	t valuation date increased according to the o current fiscal year and annually for each fiscal year salary is annualized for new	
Mortality:	Pre-Retirement : Male - Female -	1983 GAM (Males -1) 1983 GAM (Females)	
	Post-Refirement		
	Male -	1983 GAM (Males +2)	
	Female -	1983 GAM (Females +2)	
	Post-Disability : Male -	Combined Annuity Mortality	
	Female -	Combined Annuity Mortality	
Retirement Age:	Age-related table	as follows:	
	Ages: 50-5 54 55 56-6 62-6 65-	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
Separation:	Graded rates start age 49.	ing at .022 at age 20 and decreasing to .003 at	
Disability:	Rates adopted by	MSRS as shown in rate table.	
Administrative and Investment Expenses:	Prior year expenses expressed as percentage of prior year payroll.		
Return of Contributions:	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.		

Family Composition:	100% of Members are married. Female is three years younger than male. Each Member is assumed to have two children whose ages are dependent upon the Member's age. Assumed first child is born at Member's age 28 and second child is born at Member's age 31.					
Social Security:	N/A					
Benefit Increases After Retirement:	Payment of earni of 6% accounted	Payment of earnings on retired reserves in excess of 6% accounted for by 6% post-retirement assumptions.				
Special Consideration:	Married Members assumed to elect subsidized joint and survivor form of annuity as follows:					
-	Males -	25% elect 50% J&S option 25% elect 100% J&S option				
	Females -	5% elect 50% J&S option 5% elect 100% J&S option				
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method based on earnings and the date the employee entered the plan is applied to all plan benefits. Under this method, Actuarial Gains (Losses) reduce (increase) the Unfunded Actuarial Accrued Liability.					
	The actuarial cost method was changed as of July 1, 1997 to permit negative amortization of supplemental contribution surpluses.					
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 5.0% per annum.					

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Summary of Actuarial Assumptions and Methods

	D	eath	With	drawal	Dis	<u>ability</u>	Reti	rement	Salary
Age	Male	Female	Male	Female	Male	<u>Female</u>	<u>Male</u>	Female	<u>Increases</u>
0									
20	4	2	220	220	4	4	0	0	7.75%
21	4	2	210	210	4	4	0	0	7.1454
22	4	2	200	200	5	5	0	0	7.1094
23	4	2	190	190	5	5	0	0	7.0725
24	4	2	180	180	6	6	0	0	7.0363
25	4	3	170	170	6	6	0	0	7
25	4 5	3	160	160	6	6	0	0	7
20	5	3	150	150	7	7	0	0	7
21	5	3	140	140	7	7	0	0	7
20	5	3	120	140	2 0	2 2	0	0	7
29	5	3	150	130	0	0	U	V	1
30	6	3	120	120	8	8	0	0	7
31	6	4	110	110	9	9	0	0	7
32	6	4	100	100	9	9	0	0	7
33	7	4	90	90	10	10	0	0	7
34	7	4	80	80	10	10	0	0	7
25	o	5	70	70	11	11	0	٥	7
33	0	5	70	70 60	11	12	0	0	6 0010
20	9	5	60	60	12	12	0	0	6 8074
21	9 10	5	60	60	15	15	0	0	67125
20	10	0	60	60	15	15	0	0	6 6054
39	10	0	00	00	10	10	U	U	0.0054
40	11	7	60	60	18	18	0	0	6.5
41	12	7	60	60	20	20	0	0	6.354
42	14	8	60	60	22	22	0	0	6.2087
43	15	8	60	60	24	24	0	0	6.0622
44	17	9	60	60	26	26	0	0	5.9048
45	19	10	60	60	29	29	0	0	5.75
46	22	11	60	60	32	32	Õ	Õ	5.6940
40 47	25	12	60	60	36	36	Õ	õ	5.6375
48	28	14	60	60	41	41	ŏ	Õ	5.5822
49	31	15	30	30	46	46	Ō	Ō	5.5405

Separation Expressed as Number of Occurrences Per 10,000:

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Summary of Actuarial Assumptions and Methods

	D	eath	With	<u>drawal</u>	Dis	<u>ability</u>	Retire	ement	Salary
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	Increases
	25	16	0	0	50	50	200	200	E 50/
50	35	16	0	0	50	50	200	200	5.5%
51	39	18	0	0	57	57	200	200	5.4384
52	43	19	0	0	64	64	200	200	5.3776
53	48	21	0	0	72	72	200	200	5.3167
54	52	23	0	0	80	80	2,000	2,000	5.2826
55	57	25	0	0	88	88	6,000	6,000	5.25
56	61	28	0	0	98	98	2,000	2,000	5.25
57	66	31	0	0	108	108	2,000	2.000	5.25
58	71	34	0	0	118	118	2.000	2,000	5.25
59	77	38	0	0	129	129	2,000	2,000	5.25
60	84	42	0	0	141	141	2,000	2,000	5.25
61	92	47 .	0	0	154	154	2,000	2,000	5.25
62	101	52	0	0	167	167	5,000	5,000	5.25
63	111	58	0	0	0	0	5,000	5,000	5.25
64	124	64	0	0	0	0	5,000	5,000	5.25
65	120	71	0	0	0	0	10.000	10 000	5 25
05	129	71	0	0	0	0	10,000	10,000	5 25
00	130	/0 07	0	0	0	0	0	0	5.25
0/	1/0	07	0	0	0	0	0	0	5.25
68	198	9/	U	U	U	0	0	0	5.25
69	222	109	0	0	U	U	0	U	5.25
70	248	124	0	0	0	0	0	0	5.25

Separation Expressed as Number of Occurrences Per 10,000:

Summary of Plan Provisions

GENERAL

Eligibility:	State trooper, conservation officers and certain crime bureau officers.				
Contributions:					
Member:	8.40% of salary.				
Employer:	12.60% of salary.				
Allowable Service:	Service during which Member contributions were deducted. Includes period receiving temporary Workers' Compensation.				
Salary:	Salaries excluding lump-sum payments at separation.				
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 55 and three years of Allowable Service.		
Amount:	3.0% of Average Salary for each year of Allowable Servi		
Early Retirement Benefit:			
Eligibility:	Age 50 and three years of Allowable Service.		
Amount:	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement reduced by 2/10% for each month that the member is under age 55.		

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Form of Payment:

Life annuity.

Actuarially equivalent options are:

50% or 100% joint and survivor with bounce back feature without additional reduction.

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.

For members retired under laws in effect before June 1, 1973 receive an additional 6% supplement through July 1, 1994. For each of those years, the supplement increases by 6% of the total annuity which includes both MPRIF and supplemental amounts. Thereafter, regular MPRIF increases apply.

Members retired under law in effect before June 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 or \$400 per year of service less any Social Security benefits received or annuity from a Minnesota public employee pension plan. 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

Occupational Disability Benefit:

Eligibility:

Member who cannot perform his duties because of a disability directly resulting from an act of duty.

Amount: 60% of Average Salary plus 3.0% of Average Salary for each year in excess of 20 years of Allowable Service (pro rata for completed months).

> Payments cease at age 65 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.

If a Member became disabled prior to July 1, 1997 but was not eligible to commence their benefit before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.

Non-Duty Disability Benefit:

Eligibility:	At least one year of Allowable Service and disability not related to covered employment.
Amount:	Normal Retirement Benefit based on Allowable Service (minimum of 15 years) and Average Salary at disability without reduction for commencement before age 55.
	Payments cease at age 65 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.
	If a Member became disabled prior to July 1, 1997 but was not eligible to commence their benefit before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.
Form of Payment:	Same as for retirement.
Benefit Increases:	Adjusted by MSRS to provide same increase as MPRIF.

Retirement After Disability:

Eligibility:	Age 65 with continued disability.
Amount:	Optional annuity continues. Otherwise, a normal retire- ment annuity equal to disability benefit paid, or an actuarially equivalent option.
Form of Payment:	Same as for retirement.
Benefit Increases:	Same as for retirement.

DEATH

Surviving Spouse Benefit:

Eligibility:	Member who is active or receiving a disability benefit.
Amount:	50% of Annual Salary if member was active or occupa- tional disability and either had less than three years of Allowable Service or was under age 55. Payment for life.
	Surviving spouse receives the 100% joint and survivor benefit commencing on the Member's 55th birthday if Member was active or a disability with three years of Allowable Service. A spouse who had been receiving the 50% benefit shall be entitled to the larger of the two. Payment for life.
	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.
Benefit Increases:	Adjusted by MSRS to provide same increase as MPRIF.

Surviving Dependent Children's Benefit:

Eligibility:	Member who is active or receiving a disability benefit. Child must be unmarried, under age 18 (or 23 if full-time student) and dependent upon the Member.
Amount:	10% of Average Salary for each child and \$20 per month prorated among all dependent children. Benefit must not be less than 50% nor exceed 70% of Average Salary.
	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.
Refund of Contributions:	
Eligibility:	Member dies before receiving any retirement benefits and survivor benefits are not payable.

Amount: Member's contributions with 5% interest if death occurred before May 16, 1989 and 6% interest if death occurred on or after May 16, 1989.

TERMINATION

Refund of Contributions:

Eligibility:	Termination of state 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.

Deferred Benefit:

Eligibility: Three 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.

If a Member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.

SIGNIFICANT CHANGES

No significant changes were recognized for this valuation.

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TABLE 14

State Patrol Retirement Fund

SCHEDULE OF FUNDING PROGRESS (dollars in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (A)	Actuarial Accrued Liability (AAL) (B)	Unfunded AAL (UAAL) (B - A)	Funded Ratio (A)/(B)	Actual Covered Payroll (Previous FY) (C)	UAAL as % of Covered Payroll (B - A) / (C)
07/01/91	200,068	224,033	23,965	89.30%	32,365	74.05%
07/01/92	222,314	233,656	11,342	95.15%	32,882	34.49%
07/01/93	244,352	258,202	13,850	94.64%	35,765	38.73%
07/01/94	262,570	275,377	12,807	95.35%	35,341	36.24%
07/01/95	284,918	283,078	(1,840)	100.65%	37,518	-4.90%
07/01/96	323,868	303,941	(19,927)	106.56%	41,476	-48.04%
07/01/97	375,650	332,427	(43,223)	113.00%	41,996	-102.92%
07/01/98	430,011	371,369	(58,642)	115.79%	43,456	-134.95%
07/01/99	472,687	406,215	(66,472)	116.36%	45,333	-146.63%

TABLE 15

State Patrol Retirement Fund

SCHEDULE OF EMPLOYER CONTRIBUTIONS (dollars in thousands)

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
1991	22.15%	32,365	2,751	4,418	4,825	109.21%
1992	22.58%	32,882	2,795	4,630	4,893	105.68%
1993	22.27%	35,765	3,040	4,925	5,288	107.37%
1994	21.94%	35,341	3,004	4,750	5,159	108.61%
1995	21.79%	37,518	3,189	4,986	5,583	111.97%
1996	21.34%	41,476	3,484	5,367	5,742	106.99%
1997	21.33%	41,996	3,746	5,212	6,151	118.02%
1998	15.67%	43,456	3,634	3,176	5,475	172.39%
1999	14.14%	45,333	3,850	2,560	5,712	223.13%

* Includes contributions from other sources (if applicable).

Correctional Employees Retirement Fund ACTUARIAL VALUATION REPORT

July 1, 1999



MILLIMAN & ROBERTSON, INC.



Internationally WOODROW MILLIMAN

Suite 400, 15800 Bluemound Road, Brookfield, Wisconsin 53005-6069 Telephone: 262/784-2250 Fax: 262/784-7287

December 3, 1999

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

RE: Correctional 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, 1999.

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 Minnesota State Retirement System.

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.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.

= f. Conto

Thomas K. Custis, F.S.A., M.A.A.A. **Consulting Actuary**

William V. Hogan, William V. Hogan, F.S.A., M.A.A.A.

Consulting Actuary

TKC/WVH/bh

Albany, Atlanta, Boston, Chicago, Dallas, Denver, Hartford, Houston, Indianapolis, Irvine, Los Angeles, Milwaukee, Minneapolis, New York, Omaha, Philadelphia, Phoenix, Portland, ME, Portland, OR, St. Louis, Salt Lake City, San Diego, San Francisco, Seattle, Tampa, Washington, D.C., Bermuda, Tokyo

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Correctional Employees Retirement Fund

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Report Highlights (dollars in thousands)

	07/01/98 Valuation	07/01/99 Valuation
 A. CONTRIBUTIONS (Table 11) 1. Statutory Contributions - Chapter 352 % of Payroll 	13.20%	13.67%
 Required Contributions - Chapter 356 % of Payroll 	12.99%	13.31%
3. Sufficiency (Deficiency): (A.1 A.2.)	0.21%	0.36%
B. FUNDING RATIOS1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	\$295,291	\$335,408
b. Current Benefit Obligations (Table 8)	\$234,618	\$277,292
c. Funding Ratio: (a/b)	125.86%	120.96%
2 Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	\$295,291	\$335,408
b. Actuarial Accrued Liability (Table 9)	\$261,869	\$307,408
c. Funding Ratio: (a/b)	112.76%	109.11%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	\$382,240	\$434,393
b. Current and Expected Future Benefit Obligations	\$378,766	\$428,428
c. Funding Ratio: (a/b)	100.92%	101.39%
C. PLAN PARTICIPANTS 1. Active Members		
a. Number (Table 3)	2,817	2,882
b. Projected Annual Earnings	\$106,178	\$112,202
c. Average Annual Earnings (Projected \$)	\$37,692	\$38,932
d. Average Age	40.1	40.3
e. Average Service	7.6	8.0
2. Others	502	540
a. Service Retirements (Table 4)	303	50
0. Survivois (12010 3) a. Disability Patirements (Table 6)	39 /Q	50
d Deferred Retirements (Table 7)		337
e Terminated Other Non-vested (Table 7)	114	135
f. Total	996	1,124

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:

- 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 120.96%. The corresponding ratio for the prior year was 125.86%
- 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 1999 the ratio is 109.11%, which is a decrease from the 1998 value of 112.76%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 101.39% shows that the current statutory contributions are adequate.

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 E1 to E6. 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.
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 as follows:

- 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

Disclosure of the Current Benefit Obligation amounts used to be required by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 has been superceded by Statement No. 25. Tables 14 and 15 of this report are included to fulfill the requirements of Statement No. 25.

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 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.

Source 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 expectations. 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:

- Normal costs based on the Entry Age Normal Actuarial Cost Method.
- A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.
- An Allowance for Expenses.

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 13.67% compared to the Required Contribution Rate of 13.31%.

Changes in Actuarial Assumptions

There were no changes in actuarial assumptions since the last valuation.

Changes in Plan Provisions

Employee contribution rates increased from 5.50% to 5.69% effective July 1, 1999. Employer contribution rates increased from 7.70% to 7.98% effective July 1, 1999.

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1999

		Market Value	Cost Value
Α.	 ASSETS IN TRUST Cash, Equivalents, Short-term Securities Fixed Income Equity Real Estate Equity in MPRIF Other 	\$6,589 53,534 190,210 8,927 99,324 0	\$6,589 54,814 156,141 7,307 99,324 0
	Subtotal	\$358,584	\$324,175
В.	ASSETS RECEIVABLE	1,188	1,188
C.	LIABILITIES	(1,425)	(1,425)
D.	NET ASSETS HELD IN TRUST FOR PENSION BENEFITS 1. MPRIF Reserves 2. Member Reserves	99,324 20,502	99,324 20,503
	3. Other Non-MPRIF Reserves	219,505	185,111
	4. Total Assets Available for Benefits	\$358,347	\$323,938
E.	DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
	 Cost Value of Assets Available for Benefits (D4) Market Value (D4) Cost Value (D4) Market Over Cost: (E2-E3) 	\$358,347 <u>323,938</u> \$34,409	\$323,938
	5. One-third of Market Over Cost: (E4)/3	. ,	11,470
	6. Actuarial Value of Assets (E1+E5)		\$335,408
	(Same as "Current Assets")		

Statement of Change In Plan Net Assets (dollars in thousands)

YEAR ENDING JUNE 30, 1999

		Market Value	Cost Value
A.	ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$314,298	\$285,788
B.	ADDITIONS		
	1. Member Contributions	\$6,378	\$6,378
	2. Employer Contributions	8,172	8,172
	3. Contributions From Other Sources	0	0
	4. MPRIF Income	12,129	12,129
	5. Net Investment Income		
	a. Interest and Dividends	20,257	20,257
	b. Net Realized Gain (Loss)	0	0
	c. Net Change in Unrealized Gain (Loss)	5,900	0
	d. Investment Expenses	(301)	(301)
	Net Subtotal	25,856	19,956
	6. Other	2,518	2,518
	7. Total Additions	\$55,053	\$49,154
C.	OPERATING EXPENSES		
	1. Service Retirements paid from MPRIF	\$10,190	\$10,190
	2. Service Retirements paid from plan assets	0	0
	2. Disability Benefits	0	0
	3. Survivor Benefits	0	0
	4. Refunds	426	426
	6. Administrative Expenses	163	163
	7. Other	225	225
	8. Total Disbursements	\$11,004	\$11,004
D.	OTHER CHANGES IN RESERVES	0	0
E.	ASSETS AVAILABLE AT END OF PERIOD	\$358,347	\$323,938

CORRECTIONAL EMPLOYEES RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1999

				Yea	ars of Servi	ice			
<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	25-29	<u>30+</u>	ALL
<25	35	17	0	0	0	0	0	0	52
25-29	81	245	33	0	0	0	0	0	359
30-34	47	227	168	21	0	0	0	0	463
35-39	28	168	165	101	29	0	0	0	491
40-44	35	158	116	68	106	22	0	0	505
45-49	24	127	106	49	80	89	12	0	487
50-54	17	94	70	39	58	76	33	5	392
55-59	8	35	14	7	9	11	2	0	86
60-64	2	13	7	10	5	6	0	0	43
65+	0	3	0	0	0	0	1	0	4
ALL	277	1,087	679	295	287	204	48	5	2,882

AVERAGE ANNUAL EARNINGS

				Yea	ars of Servic	e			
Age	<u><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	22,170	27,457	0	0	0	0	0	0	23,898
25-29	23,807	30,798	35,882	0	0	0	0	0	29,688
30-34	29,706	32,312	36,873	40,828	0	0	0	0	34,089
35-39	24,450	33,834	38,046	40,521	42,037	0	0	0	36,574
40-44	21,558	34,389	37,639	40,619	43,486	44,573	0	0	37,438
45-49	23,721	37,231	39,453	42,251	42,727	44,708	48,656	0	40,105
50-54	36,501	37,268	38,054	44,623	42,122	47,609	48,481	44,383	41,865
55-59	20,494	37,470	41,934	38,266	41,886	50,150	47,715	0	39,005
60-64	27,143	35,134	40,140	50,445	40,892	55,644	0	0	42,669
65+	0	41,633	0	0	0	0	42,818	0	41,929
ALL	25,082	33,661	37,903	41,678	42,757	46,389	48,375	44,383	36,726

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

Age	<u> <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
All	6,947	36,589	25,736	12,295	12,271	9,463	2,322	221	105,844

MILLIMAN & ROBERTSON, INC.

TABLE 4

CORRECTIONAL EMPLOYEES RETIREMENT FUND

				Years l	Retired			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	6	8	0	0	0	0	0	14
55-59	39	84	3	0	0	0	0	126
60-64	8	36	64	2	0	0	0	110
65-69	. 7	16	13	57	0	0	· 0	93
70-74	0	1	14	12	47	0	0	74
75-79	0	0	0	3	19	35	0	57
80-84	0	0	0	0	1	25	10	36
85+	0	0	0	0	0	22	10	- 32
ALL	60	145	94	74	67	82	20	542

SERVICE RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

				Years I	Retired			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	19,056	12,052	0	0	0	0	0	15,054
55-59	15,258	14,078	11,594	0	0	0	0	14,384
60-64	13,707	13,406	16,144	14,326	0	0	0	15,038
65-69	15,258	9,267	17,490	15,712	0	0	0	14,818
70-74	0	16,781	11,637	14,096	18,757	0	0	16,627
75-79	0	0	0	12,556	16,614	14,030	0	14,814
80-84	0	0	0	0	9,216	11,836	11,693	11,724
85+	0	0	0	0	0	8,075	9,712	8,587
ALL	15,431	13,287	15,514	15,285	18,007	11,763	10,703	14,441

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

Age	<u><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	925	1,926	1,458	1,131	1,206	964	214	7,827

CORRECTIONAL EMPLOYEES RETIREMENT FUND

				Years Sin	ice Death			
Age	<u><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	1	5	1	1	0	0	0	8
50-54	2	4	0	0	0	0	0	6
55-59	1	4	2	1	1	0	0	9
60-64	5	3	2	1	1	0	0	12
65-69	0	1	0	1	2	0	0	4
70-74	0	1	0	0	0	0	0	1
75-79	0	2	1	1	0	1	1	6
80-84	0	0	1	0	0	0	2	3
85+	0	0	1	0	0	0	0	.1
ALL	9	20	8	5	4	1	3	50

SURVIVORS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

				Years Sin	ice Death			
Age	<u><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	1,100	3,979	6,209	2,779	0	0	0	3,748
50-54	22,044	8,181	0	0	0	0	0	12,802
55-59	8,807	10,568	11,506	4,051	9,788	0	0	9,770
60-64	9,443	8,682	6,688	8,224	27,863	0	0	10,227
65-69	0	5,161	0	8,226	7,530	0	0	7,112
70-74	0	17,385	0	0	0	0	0	17,385
75-79	0	11,209	1,060	5,394	0	8,036	9,792	7,783
80-84	0	0	2,308	0	0	0	4,647	3,867
85+	0	0	528	0	0	0	0	528
ALL	11,246	8,295	5,812	5,735	13,178	8,036	6,362	8,442

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS SINCE DEATH

Age	<1	1-4	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL
All	101,214	165,900	46,496	28,675	52,712	8,036	19,086	422,100

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MILLIMAN & ROBERTSON, INC.

TABLE 6

CORRECTIONAL EMPLOYEES RETIREMENT FUND

	Years Disabled								
Age	<u><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	8	20	5	0	0	0	0	33	
50-54	2	7	5	3	0	0	0	17	
55-59	1	2	0	1	0	0	0	4	
60-64	0	0	2	1	0	0	0	3	
65-69	0	0	0	0	1	0	0	1	
70-74	0	0	0	0	0	0	0	0	
75-79	0	0	0	0	0	2	0	2	
80-84	0	0	0	0	0	0	0	0	
85+	0	0	0	0	0	0	0	0	
ALL	11	29	12	5	1	2	0	60	

DISABILITY RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

Years Disabled								
Age	<u><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	13,972	11,052	9,814	0	0	0	0	11,572
50-54	12,354	12,075	12,447	6,995	0	0	0	11,321
55-59	10,756	14,215	0	10,275	0	0	0	12,365
60-64	0	0	11,603	15,375	0	0	0	12,860
65-69	0	0	0	0	12,974	0	0	12,974
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	4,683	0	4,683
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	13,386	11,517	11,209	9,327	12,974	4,683	0	11,412

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED

_								
Age	<u><1</u>	1-4	<u>5-9</u>	10-14	<u>15-19</u>	20-24	25+	ALL
All	147,246	333,993	134,508	46,635	12,974	9,366	0	684,720

Reconciliation Of Members

			Terminated			
		Actives	Deferred	Other Non Vested		
		Actives	Kethement	INOII- V esteu		
A.	ON JUNE 30, 1998	2,817	291	114		
B.	ADDITIONS	299	69	35		
C.	DELETIONS					
	1. Service Retirement	(57)	(1)	(1)		
	2. Disability	(9)	(1)	0		
	3. Death	(4)	(1)	0		
	4. Terminated - Deferred	(65)	0	0		
	5. Terminated - Refund	(65)	(3)	(10)		
	6. Terminated - Other Non-Vested	(29)	0	0		
	7. Returned as Active	15	(12)	(3)		
	8. Transferred (to)/from Other Fund	0	0	0		
D.	DATA ADJUSTMENTS	(20)	(5)	0		
	Vested	2,123				
	Non-Vested	759				
E.	TOTAL ON JUNE 30, 1999	2,882	337	135		

		Retirement Annuitants	Disabled	Survivors
A.	ON JUNE 30, 1998	503	49	39
B.	ADDITIONS	59	10	9
C.	DELETIONS			
	1. Service Retirement	0	0	0
	2. Death	(21)	0	0
	3. Annuity Expired	0	0	0
	4. Returned as Active	0	0	0
D.	DATA ADJUSTMENTS	1	1	2
E.	TOTAL ON JUNE 30, 1999	542	60	50

				TABLE 8		
	Actuarial E (dollars	Balance Sheet in thousands)				
	JUL	Y 1, 1999				
A.	CURRENT ASSETS (TABLE 1, E6)			\$335,408		
B.	EXPECTED FUTURE ASSETS 1. Present Value of Expected Future Statutory Supplemental Contribution	ns (See Table 11)		(\$22,035)		
	2. Present Value of Future Normal Costs			121,020		
	3. Total Expected Future Assets			\$98,985		
C.	TOTAL CURRENT AND EXPECTED FU	UTURE ASSETS		\$434,393		
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total		
	1. Benefit Recipients					
	a. Retirement Annuities		\$81,788	\$81,788		
	b. Disability Benefits		12,252	12,252		
	c. Surviving Spouse and Child Benefits		5,284	5,284		
	2. Deferred Retirements with Future Augmentation 11,498					
	3. Former Members without Vested Right	S	124	124		
	4. Active Members					
	a. Retirement Annuities	3,079	130,926	134,005		
	b. Disability Benefits	10,522	0	10,522		
	c. Survivor's Benefits	3,203	0	3,203		
	d. Deferred Retirements	598	15,133	15,731		
	e. Refund Liability Due	0	2,885	2,885		
	to Death or Withdrawal					
	5. Total Current Benefit Obligations	\$17,402	\$259,890	\$277,292		
E.	EXPECTED FUTURE BENEFIT OBLIG	ATIONS		\$151,136		
F.	TOTAL CURRENT AND EXPECTED F	UTURE BENEFIT	OBLIGATIONS	\$428,428		
G.	CURRENT UNFUNDED ACTUARIAL	LIABILITY (D5-A))	(\$58,116)		
H.	CURRENT AND FUTURE UNFUNDED	ACTUARIAL LIA	BILITY (F-C)	(\$5,965)		

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MILLIMAN & ROBERTSON, INC.

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

(dollars in thousands)

JULY 1, 1999

		Actuarial	Actuarial	
		Present Value	Present Value	Actuarial
		of Projected	of Future	Accrued
		Benefits	Normal Costs	Liability
Α.	DETERMINATION OF ACTUARIAL	(1)	(2)	(3)=(1)-(2)
	ACCRUED LIABILITY (AAL)			
	1. Active Members			
	a. Retirement Annuities	\$258,547	\$83,002	\$175,545
	b. Disability Benefits	19,594	9,927	9,667
	c. Survivor's Benefit	5,831	2,398	3,433
	d. Deferred Retirements	28,320	15,565	12,755
	e. Refunds Due to Death or Withdrawal	5,190	10,128	(4,938)
	f. Total	\$317,482	\$121,020	\$196,462
	2. Deferred Retirements With Future Augmentation	11,498		11,498
	 Former Members Without Vested Rights 	124		124
	4. Annuitants in MPRIF	99,324		99,324
	5. Recipients Not in MPRIF	0		0
	6. Total	\$428,428	\$121,020	\$307,408
D	DETERMINATION OF INFEINDED ACT			(114 41)
D.	1 AAL (A6)			(UAAL) \$307 408
	2 Current Assets (Table 1 E6)			335 408
	$\frac{2}{110} \text{ Log}$			(\$28,000)
	$\mathbf{J}_{\mathbf{J}} = \mathbf{J}_{\mathbf{J}} - \mathbf{J}_{\mathbf{J}} = \mathbf{J}_{\mathbf{J}}$			(\$28,000)
C.	 DETERMINATION OF SUPPLEMENTAL 1. Present Value of Future Payrolls Throug the Amortization Date of July 1, 2020 	L CONTRIBUTI h	ON RATE	\$1,656,740
	2. Supplemental Contribution Rate (B3/C1))		-1.69%

Changes In Unfunded Actuarial Accrued Liability (UAAL) (dollars in thousands)

YEAR ENDING JUNE 30, 1999

A.	UAAL AT BEGINNING OF YEAR	(\$33,422)
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	 Normal Cost and Expenses Contribution Interest on A, B1 and B2 	\$15,970 (14,550) (2,781)
	4. Total (B1+B2+B3)	(\$1,361)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	(\$34,783)
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	 Salary Increases Investment Return MPRIF Mortality Mortality of Other Benefit Recipients Other Items 	\$0 (3,398) 1,179 0 9,002
	6. Total	\$6,783
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	(\$28,000)
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)	(\$28,000)

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1999

		Percent of Pavroll	Dollar Amount
A.	STATUTORY CONTRIBUTIONS - CHAPTER 352		
	1. Employee Contributions	5.69%	\$6,384
	2. Employer Contributions	7.98%	8,954
	3. Total	13.67%	\$15,338
В.	REQUIRED CONTRIBUTIONS - CHAPTER 356		
	1. Normal Cost		
	a. Retirement Benefits	10.47%	\$11,749
	b. Disability benefits	1.23%	1,382
	c. Survivors	0.27%	203 1 077
	a. Deferred Relifement Benefits	1.70%	1,977
	e. Refutius Due to Death of Withdrawar	1.1270	
	f. Total	14.85%	\$16,664
	2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	-1.69%	(1,896)
	3. Allowance for Expenses	0.15%	168
	4. Total	13.31%	\$14,936
C.	CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	0.36%	\$402

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1999 is \$112,202.

Summary of Actuarial Assumptions and Methods

Interest:	Pre-Retirem Post-Retirem	ent: 8.5% per annum ent: 6.0% per annum			
Salary Increases:	Reported salary at valuation date increased according to the rate table below to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for new Members.				
Mortality:	Pre-Retirement:				
-	Male -	1983 GAM (Males -1)			
	Female -	1983 GAM (Females)			
	Post-Retirem	ent:			
	Male -	1983 GAM (Males +2)			
	Female -	1983 GAM (Females +2)			
	Post-Disabili	ty:			
	Male -	Combined Annuity Mortality Table			
	Female -	Combined Annuity Mortality Table			
Retirement Age:	Age-related ta	ble as follows:			
	Ages:	50-53 2%			
	-	54 20			
		55 60			
		56-61 20			
	1	62-64 50 65+ 100			
		05+ 100			
Separation:	Graded rates l	pased on actual experience developed by the			
	June 30, 1997 table.	experience analysis. Rates are shown in rate			
Disability:	Rates as show	m in rate table.			

TABLE 12 (Continued)

Administrative and Investment Expenses:	Prior year admin prior year payrol	Prior year administration expenses expressed as percentage of prior year payroll.				
Return of Contributions:	All employees w deferred benefit lated with interes	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.				
Family Composition:	85% of Members years younger th	85% of Members are assumed to be married. Female is three years younger than male.				
Social Security:	Based on the pre Only earnings hi Social Security b as at present.	Based on the present law and 6.0% retroactive salary scale. Only earnings history while in state service is used. Future Social Security benefits replace the same proportion of salary as at present.				
Benefit Increases After Retirement:	Payment of earn of 6% accounted	Payment of earnings on retired reserves in excess of 6% accounted for by 6% post-retirement assumptions.				
Special Consideration:	Married Members assumed to elect subsidized joint and survivor form of annuity as follows:					
	Males - Females -	25% elect 50% J&S option 25% elect 100% J&S option 5% elect 50% J&S option 5% elect 100% J&S option				
Actuarial Cost Method:	Entry Age Norm expressed as a le method, Actuaria Unfunded Actua	al Actuarial Cost Method with normal costs evel percentage of earnings. Under this al Gains (Losses) reduce (increase) the rial Accrued Liability.				
	The actuarial cost method was changed as of July 1, 199 permit negative amortization of supplemental contribut surpluses.					
Asset Valuation Method:	Cost Value plus	one-third Unrealized Gains or Losses.				
Payment on the Unfunded Actuarial Accrued Liability:	A level percenta amortization dat per annum.	ge of payroll each year to the statutory e assuming payroll increases of 5%				

Summary of Actuarial Assumptions and Methods

	Death		Withdrawal		<u>Disability</u>		<u>Retirement</u>		Salary	
Age	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Increases</u>	
20	4	2	2,400	1,600	4	4	0	0	7.75%	
21	4	2	2,200	1,560	4	4	0	0	7.1454	
22	4	2	2,000	1,520	5	5	0	0	7.1094	
23	4	2	1,810	1,480	5	5	0	0	7.0725	
24	4	2	1,630	1,450	6	6	0	0	7.0363	
25	4	3	1,470	1,420	6	6	0	0	7	
26	5	3	1,330	1,400	6	6	0	0	7	
27	5	3	1,210	1,380	7	7	0	0	7	
28	5	3	1,100	1,370	7	7	0	0	7	
29	5	3	1,000	1,360	8	8	0	0	7	
30	6	3 .	910	1,350	8	8	0	0	7	
31	6	4	830	1,340	9	9	0	0	7	
32	6	4	760	1,330	9	9	0	0	7	
33	7	4	700	1,320	10	10	0	0	7	
34	7	4	650	1,310	10	10	0	0	7	
35	8	5	600	1.290	11	11	0	0	7	
36	9	5	560	1.260	12	12	0	0	6.9019	
37	9	5	520	1.220	13	13	0	0	6.8074	
38	10	6	490	1.170	15	15	0	0	6.7125	
39	10	6	460	1,110	16	16	0	0	6.6054	
40	11	7	440	1.040	18	18	0	0	6.5	
41	12	7	420	960	20	20	0	0	6.354	
42	14	8	400	870	22	22	0	0	6.2087	
43	15	8	380	780	24	24	0	0	6.0622	
44	17	9	360	700	26	26	0	0	5.9048	
45	19	10	340	640	29	29	0	0	5.75	
46	22	11	320	590	32	32	0	0	5.6940	
47	25	12	300	560	36	36	0	0	5.6375	
48	28	14	280	530	41	41	0	0	5.5822	
49	31	15	260	500	46	46	0	0	5.5405	

Separation Expressed as Number of Occurrences Per 10,000:

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Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Death		Withdrawal		<u>Disability</u>		<u>Retirement</u>		Salary
Age	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	Increases
50	35	16	240	470	50	50	200	200	5.5%
51	39	18	220	440	57	57	200	200	5.4384
52	43	19	200	410	64	64	200	200	5.3776
53	48	21	180	390	72	72	200	200	5.3167
54	52	23	160	360	80	80	2,000	2,000	5.2826
55	57	25	140	330	88	88	6,000	6,000	5.25
56	61	28	120	290	98	98	2,000	2,000	5.25
57	66	31	100	230	108	108	2,000	2,000	5.25
58	71	34	70	170	118	118	2,000	2,000	5.25
59	77	38	40	90	129	129	2,000	2,000	5.25
60	84	42	0	0	141	141	2,000	2,000	5.25
61	92	47	0	0	154	154	2,000	2,000	5.25
62	101	52	0	0	167	167	5,000	5,000	5.25
63	111	58	0	0	0	0	5,000	5,000	5.25
64	124	64	0	0	0	0	5,000	5,000	5.25
65	129	71	0	0	0	0	10,000	10,000	5.25
66	156	78	0	0	0	0	0	0	5.25
67	176	87	0	0	0	0	0	0	5.25
68	198	97	0	0	0	0	0	0	5.25
69	222	109	0	0	0	0	0	0	5.25
70	248	124	0	0	0	0	0	0	5.25

Summary of Plan Provisions

GENERAL

Eligibility:	State employees in covered correctional service.			
Contributions:				
Member:	5.69% of salary.			
Employer:	7.98% of salary.			
Allowable Service:	Service during which Member contributions were made. May also include certain leaves of absence, military service and periods while temporary Worker's Compensation is paid.			
Salary:	Includes wages, allowances and fees. Excludes lump-sum payments at separation and reduced salary while receiving Worker's Compensation benefits.			
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 55 and three years of Allowable Service under the Correctional and General Plans. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.
Amount:	2.4% of Average Salary for each year of Allowable Service, pro rata for completed months.

Early Retirement Benefit:

Eligibility:	Age 50 and three years of Allowable Service.
Amount:	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date reduced to the actuarial equivalent of the benefit that would be payable if the Member deferred the benefit until age 55.
Form of Payment:	Life annuity. Actuarially equivalent options are:
	50% or 100% joint and survivor with bounce back feature without additional reduction. 15 year certain and life benefits. Level Social Security option either to age 62 or Social Security Retirement Age.
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. Members receiving benefits for at least one full month but less than 12 full months will receive a partial increase.

DISABILITY

Occupational Disability:

Eligibility:	Member who cannot perform his duties as a direct result of a disability related to an act of duty.
Amount:	50% of Average Salary plus 2.4% of Average Salary for each year in excess of 20 years and 10 months of Allowable Service (pro rata for completed months). Maximum of 75% of Average Salary.

Payment begins at disability and stops at age 62 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.

Non-Occupational Disability:

	Eligibility:	At least one year of Correctional service and disability not related to covered employment.
	Amount:	Normal Retirement Benefit based on Allowable Service (minimum of 15 years) and Average Salary at disability.
		Payment begins at disability and ends at age 62 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.
	Form of Payment:	Same as for retirement.
	Benefit Increases:	Adjusted by MSRS to provide same increase as MPRIF.
Retire	ement Benefits:	
	Eligibility:	Age 62 with continued disability.
	Amount:	Benefit computed as a normal retirement benefit under General Plan based on same Allowable Service and without reduction for age.
	Form of Payment:	Same as for retirement.
	Benefit Increases:	Same as for retirement.

DEATH

Surviving Spouse Benefit:

Eligibility:	Member at any age or former Member age 50 or older who dies before retirement or disability benefits commence with three years of Allowable Service. If a former Member dies before age 55 and has less than 30 years of Allowable Service, benefits commence when the former Member would have been age 55. If an active member dies, benefits may commence immediately, regardless of age.			
Amount:	Surviving spouse receives the 100% joint and survivor benefit using the Normal Retirement formula above. If commencement is prior to age 55, the appropriate early retirement formula described above applies except that one- half the monthly reduction factor is used from age 55 to the commencement age and the Rule of 90 does not apply. In lieu of this benefit, the surviving spouse may elect a refund of contributions with interest or an actuarially equivalent term certain annuity (lump sum payable to estate at death).			
Benefit Increases:	Adjusted by MSRS to provide same income as MPRIF.			

Surviving Dependent Children's Benefit:

Eligibility:	If no surviving spouse, all dependent children (biological or adopted) below age 20 who are dependent for more than half of their support on deceased Member.
Amount:	Actuarially equivalent to surviving spouse 100% joint and survivor annuity payable to the later of age 20 or five years. The amount is to be proportionally divided among surviving children.

Refund of Contributions With Interest:

Eligibility:	Active employee dies and survivor benefits are not payable or a former employee dies before annuity begins. If accumulated contributions with interest exceed total payments to the surviving spouse and children, then the remainder is paid out.
Amount:	The Member's contributions with 5% interest if death occurred before May 16, 1989 and 6% interest if death occurred on or after May 16, 1989.

TERMINATION

Refund of Contributions:

Eligibility:	Termination of state 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 Annuity:				
Eligibility:	Three years of Correctional and General Service.			
Amount:	Benefit computed under law in effect at termination.			

SIGNIFICANT CHANGES

Employee contribution rates increased from 5.50% to 5.69% effective July 1, 1999. Employer contribution rates increased from 7.70% to 7.98% effective July 1, 1999.

TABLE 14

Correctional Employees Retirement Fund

SCHEDULE OF FUNDING PROGRESS (dollars in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (A)	Actuarial Accrued Liability (AAL) (B)	Unfunded AAL (UAAL) (B - A)	Funded Ratio (A)/(B)	Actual Covered Payroll (Previous FY) (C)	UAAL as % of Covered Payroll (B - A) / (C)
07/01/91	105,925	112,171	6,246	94.43%	43,429	14.38%
07/01/92	121,051	123,515	2,464	98.01%	47,592	5.18%
07/01/93	135,939	134,280	(1,659)	101.24%	52,122	-3.18%
07/01/94	148,163	152,702	4,539	97.03%	54,673	8.30%
07/01/95	165,427	153,491	(11,936)	107.78%	66,939	-17.83%
07/01/96	193,833	170,959	(22,874)	113.38%	72,959	-31.35%
07/01/97	241,916	212,638	(29,278)	113.77%	112,408	-26.05%
07/01/98	295,291	261,869	(33,422)	112.76%	105,796	-31.59%
07/01/99	335,408	307,408	(28,000)	109.11%	106,131	-26.38%

TABLE 15

Correctional Employees Retirement Fund

SCHEDULE OF EMPLOYER CONTRIBUTIONS (dollars in thousands)

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
					0.501	105.0(0/
1991	10.73%	43,429	2,128	2,532	2,731	107.86%
1992	10.82%	47,592	2,332	2,817	2,955	104.90%
1993	11.41%	52,122	2,554	3,393	3,217	94.81%
1994	10.97%	54,673	2,679	3,319	3,355	101.08%
1995	11.30%	66,939	3,280	4,284	4,195	97.92%
1996	11.11%	72,959	3,575	4,531	4,559	100.62%
1997	11.21%	112,408	5,508	7,093	9,129	128.70%
1998	12.49%	105,796	5,954	7,260	8,146	112.20%
1999	12.99%	106,131	6,378	7,408	8,172	110.31%
	-					

* Includes contributions from other sources (if applicable).

Legislators Retirement Fund ACTUARIAL VALUATION REPORT

July 1, 1999



MILLIMAN & ROBERTSON, INC.



Internationally WOODROW MILLIMAN

Suite 400, 15800 Bluemound Road, Brookfield, Wisconsin 53005-6069 Telephone: 262/784-2250 Fax: 262/784-7287

December 3, 1999

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

RE: Legislators 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, 1999.

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 Minnesota State Retirement System.

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.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.

Thomas of losts

Thomas K. Custis, F.S.A., M.A.A.A. Consulting Actuary

William V. Hogan

William V. Hogan, F.S.A., M.A.A.A. Consulting Actuary

TKC/WVH/bh

Albany, Atlanta, Boston, Chicago, Dallas, Denver, Hartford, Houston, Indianapolis, Irvine, Los Angeles, Milwaukee, Minneapolis, New York, Omaha, Philadelphia, Phoenix, Portland, ME, Portland, OR, St. Louis, Salt Lake City, San Diego, San Francisco, Seattle, Tampa, Washington, D.C., Bermuda, Tokyo

Legislators Retirement Fund

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MILLIMAN & ROBERTSON, INC.

Legislators Retirement Fund

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Report Highlights

(dollars in thousands)

		07/01/98 Valuation	07/01/99 Valuation
Α.	CONTRIBUTIONS (Table 11)		
	 Statutory Contributions - Chapter 3A % of Payroll 	9.00%	9.00%
	 Required Contributions - Chapter 356 % of Payroll 	47.19%	52.72%
	3. Sufficiency (Deficiency): (A.1 A.2.)	-38.19%	-43.72%
B.	FUNDING RATIOS 1. Accrued Benefit Funding Ratio		
	a. Current Assets (Table 1)	\$31,212	\$33,474
	b. Current Benefit Obligations (Table 8)	\$60,373	\$63,946
	c. Funding Ratio: (a/b)	51.70%	52.35%
	2. Accrued Liability Funding Ratio		
	a. Current Assets (Table 1)	\$31,212	\$33,474
	b. Actuarial Accrued Liability (Table 9)	\$62,928	\$66,418
	c. Funding Ratio: (a/b)	49.60%	50.40%
	3. Projected Benefit Funding Ratio (Table 8)		
	a. Current and Expected Future Assets	\$39,505	\$36,789
	b. Current and Expected Future Benefit Obligations	\$71,221	\$73,508
	c. Funding Ratio: (a/b)	55.47%	50.05%
C.	PLAN PARTICIPANTS 1. Active Members		
	a. Number (Table 3)	199	180
	b. Projected Annual Earnings	\$7,289	\$6,571
	c. Average Annual Earnings (Projected \$)	\$36,627	\$36,504
	d. Average Age	50.8	52.6
	e. Average Service	9.4	10.7
	2. Others	100	100
	a. Service Retirements (Table 4)	192	196
	D. SURVIVORS (12010 S)	/0	/1
	d. Deformed Definements (Table 0)	U 111	107
	a. Deterred Active Non worked (Table 7)	111 A	107
	f. Total		378
	1. 10tal	577	570

Legislators Retirement Fund

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:

- 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 52.35%. The corresponding ratio for the prior year was 51.70%
- 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 1999 the ratio is 50.40%, which is an increase from the 1998 value of 49.60%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 50.05% 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 E1 to E6. 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.

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 as follows:

- 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.
- <u>For Non-Active Members</u> The discounted value of benefits, including augmentation in cases where benefits have not commenced.

GASB Disclosure

Disclosure of the Current Benefit Obligation amounts used to be required by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 has been superceded by Statement No. 25. Tables 14 and 15 of this report are included to fulfill the requirements of Statement No. 25.

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 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 5.00% 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.

Source 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 expectations. 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:

- Normal costs based on the Entry Age Normal Actuarial Cost Method.
- A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.
- An Allowance for Expenses.

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 9.00% compared to the Required Contribution Rate of 52.72%.

Changes in Actuarial Assumptions

There were no changes in actuarial assumptions since the last valuation.

Changes in Plan Provisions

There were no significant changes in plan provisions since the last valuation.

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Legislators Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1999

		Market Value	Cost Value
А.	ASSETS IN TRUST	\$ 0	\$0
	2 Fixed Income	φ0 0	0
	3 Fauity	Ő	0
	4 Real Estate	ů	ů
	5 Equity in MPRIF	26.737	26.737
	6. Other	7,064	7,064
	Subtotal	\$33,801	\$33,801
B.	ASSETS RECEIVABLE	0	0
C.	LIABILITIES	(327)	(327)
D.	 NET ASSETS HELD IN TRUST FOR PENSION BENEFITS 1. MPRIF Reserves 2. Member Reserves 3. Other Non-MPRIF Reserves 4. Total Assets Available for Benefits 	26,737 6,956 (219) \$33,474	26,737 6,956 (219) \$33,474
E.	DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
	1. Cost Value of Assets Available		\$33,474
	for Benefits (D4)		
	2. Market Value (D4)	\$33,474	
	3. Cost Value (D4)	53,474	
	4. Market Over Cost: (E2-E3)	20	Ο
	5. One-unity of Market Over Cost: $(E4)/5$		\$33.474
	0. Addualial value of Assets ($E1^{+}EJ$) (Some as "Current Assets")		<u></u>
	(Same as Current Assets)		

Legislators Retirement Fund

Statement of Change In Plan Net Assets (dollars in thousands)

YEAR ENDING JUNE 30, 1999

		Market Value	Cost Value
A.	ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$31,212	\$31,212
B.	ADDITIONS		
	1. Member Contributions	\$674	\$674
	2. Employer Contributions	2,091	2,091
	3. Contributions From Other Sources	0	0
	4. MPRIF Income	3,705	3,705
	5. Net Investment Income		
	a. Interest and Dividends	0	0
	b. Net Realized Gain (Loss)	0	0
	c. Net Change in Unrealized Gain (Loss)	(1)	0
	d. Investment Expenses	0	0
	Net Subtotal	(1)	0
	6. Other	0	0
	7. Total Additions	\$6,469	\$6,469
C.	OPERATING EXPENSES		
	1. Service Retirements paid from MPRIF	\$3,740	\$3,740
	2. Service Retirements paid from plan assets	0	0
	2. Disability Benefits	0	0
	3. Survivor Benefits	0	0
	4. Refunds	49	49
	6. Administrative Expenses	31	31
	7. Other	387	387
	8. Total Disbursements	\$4,207	\$4,207
D.	OTHER CHANGES IN RESERVES	0	0
E.	ASSETS AVAILABLE AT END OF PERIOD	\$33,474	\$33,474

LEGISLATORS RETIREMENT PLAN

ACTIVE MEMBERS AS OF JUNE 30, 1999

				Ŋ	ears of Service				
<u>Age</u>	<u><1</u>	1-4	<u>5-9</u> 10)-14	<u>15-19</u> <u>20-</u>	24	<u>25-29</u> <u>30</u>	<u>+</u>	ALL
<25	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	0	3	0	0	0	0	0	0	3
35-39	0	4	7	1	0	0	0	0	12
40-44	1	5	9	5	0	0	0	0	20
45-49	0	10	10	8	3	2	0	0	33
50-54	0	8	10	10	2	3	2	0	35
55-59	0	9	9	7	4	3	4	0	36
60-64	0	5	8	2	2	5	2	0	24
65+	0	2	3	3	3	3	3	0	17
ALL	1	46	56	36	14	16	11	0	180

AVERAGE ANNUAL EARNINGS

				Ye	ars of Serv	ice			
<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	15-19	<u>20-24</u>	<u>25-29</u>	<u>30+</u>	ALL
<25	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	0	37,848	0	0	0	0	0	0	37,848
35-39	0	35,986	29,937	14,829	0	0	0	0	30,694
40-44	61,776	37,834	35,122	30,544	0	0	0	0	35,988
45-49	0	37,321	35,882	37,813	37,866	37,661	0	0	37,074
50-54	0	31,148	35,977	31,890	37,449	37,848	37,848	0	34,057
55-59	0	34,935	27,891	37,792	36,961	37,792	37,722	0	34,502
60-64	0	33,236	37,820	26,338	37,708	33,132	37,372	0	34,885
65+	0	37,848	37,848	37,848	37,848	37,325	37,848	0	37,756
ALL	61,776	35,334	34,132	33,881	37,521	36,242	37,716	0	35,212

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

Age	<u><1</u>	1-4	<u>5-9</u>	10-14	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u>30+</u> <u>AI</u>	L
All	61	1,625	1,911	1,219	525	579	414	0 6,	338

MILLIMAN & ROBERTSON, INC.
LEGISTATORS RETIREMENT PLAN

	Years Retired									
Age	<u><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	0	0	0	0	0	0	0	0		
50-54	0	0	0	0	0	0	0	0		
55-59	0	0	0	0	0	0	0	0		
60-64	5	18	1	0	0	0	0	24		
65-69	4	23	29	0	0	0	0	56		
70-74	0	14	16	22	0	0	0	52		
75-79	0	1	4	4	30	0	0	39		
80-84	0	0	1	1	8	5	0	15		
85+	0	0	0	0	0	5	5	10		
ALL	9	56	51	27	38	10	5	196		

SERVICE RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

				Years l	Retired			
<u>Age</u>	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	11,479	12,917	18,302	0	0	0	0	12,842
65-69	13,436	16,944	16,304	0	0	0	0	16,362
70-74	0	20,567	20,379	12,435	0	0	0	17,069
75-79	0	20,785	17,262	15,594	16,681	0	0	16,734
80-84	0	0	9,080	28,596	26,807	20,820	0	23,749
85+	0	0	0	0	0	7,612	14,402	11,007
ALL	12,349	16,624	17,555	13,502	18,813	14,216	14,402	16,485

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

<u>Age</u>	<u><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	111	930	895	364	714	142	72	3,231

LEGISTATORS RETIREMENT PLAN

				Years Sin	ce Death			
Age	<u><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	0	5	0	0	0	0	0	5
50-54	0	0	0	0	0	0	0	0
55-59	0	2	0	1	1	1	0	5
60-64	0	1	2	1	0	0	0	4
65-69	0	3	3	0	0	0	1	7
70-74	0	2	6	0	2	0	1	11
75-79	0	2	4	3	0	1	1	11
80-84	1	3	3	3	0	1	2	13
85+	0	3	3	3	1	3	2	15
ALL	1	21	21	11	4	6	7	71

SURVIVORS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

		,		Years Sin	ce Death			
Age	<1	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL
<50	0	1,720	0	0	0	0	0	1,720
50-54	0	0	0	0	0	0	0	0
55-59	0	9,130	0	35,309	17,650	10,934	0	16,431
60-64	0	1,422	12,201	8,373	0	0	0	8,549
65-69	0	13,269	8,173	0	0	0	8,874	10,457
70-74	0	19,335	5,165	0	3,659	0	8,846	7,802
75-79	0	13,029	5,311	5,524	0	4,302	15,884	7,642
80-84	19,066	10,817	13,723	8,644	0	2,629	6,047	10,257
85+	0	8,294	8,584	5,573	13,605	9,326	7,752	8,296
ALL	19,066	9,055	8,004	9,355	9,643	7,641	8,743	8,814

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS SINCE DEATH

Age	<u><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	19,066	190,155	168,084	102,905	38,572	45,846	61,201	625,794

LEGISTATORS RETIREMENT PLAN

				Years D	isabled			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	. 0
ALL	0	0	0	0	0	0	0	0

DISABILITY RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

				Years D	isabled			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	0	0	0	0	0

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS DISABLED

Age	<1	1-4	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	20-24	<u>25+</u>	ALL
All	0	0	0	0	0	0	0	0

Reconciliation Of Members

			Termir	nated
			Deferred	Other
		Actives	Retirement	Non-Vested
A.	ON JUNE 30, 1998	199	111	4
B.	ADDITIONS	0	2	0
C.	DELETIONS			
	1. Service Retirement	(3)	(6)	0
	2. Disability	0	0	0
	3. Death	(3)	0	0
	4. Terminated - Deferred	0	0	0
	5. Terminated - Refund	0	0	0
	6. Terminated - Other Non-Vested	0	0	0
	7. Returned as Active	0	0	0
	8. Transferred (to)/from Other Fund	(13)	0	0
D.	DATA ADJUSTMENTS	0	0	0
	Vested	131		
	Non-Vested	49		
E.	TOTAL ON JUNE 30, 1999	180	107	4

		Recipients					
		Retirement Annuitants	Disabled	Survivors			
A.	ON JUNE 30, 1998	192	0	70			
B.	ADDITIONS	9	0	1			
C.	DELETIONS 1. Service Retirement 2. Death 3. Annuity Expired	0 (5) 0	0 0 0	0 (1) 0			
	4. Returned as Active	0	0	0			
D.	DATA ADJUSTMENTS	0	0	1			
E.	TOTAL ON JUNE 30, 1999	196	0	71			

	Legislators Retirement Fund							
	Actuarial E (dollars)	Balance Sheet in thousands)						
	JUL	Y 1, 1999						
A.	CURRENT ASSETS (TABLE 1, E6)			\$33,474				
B.	 B. EXPECTED FUTURE ASSETS Present Value of Expected Future Statutory Supplemental Contributions (See Table 11) Present Value of Future Normal Costs 							
	3. Total Expected Future Assets			\$3,315				
C.	TOTAL CURRENT AND EXPECTED FU		\$36,789					
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total				
	a Retirement Annuities		\$30,882	\$30.882				
	h. Disability Benefits		¢20,002 0	0				
	c. Surviving Spouse and Child Benefits		5,350	5,350				
	2. Deferred Retirements with Future Aug	nentation	12,031	12,031				
	3. Former Members without Vested Right	S	55	55				
	4. Active Members							
	a. Retirement Annuities	855	12,831	13,686				
	b. Disability Benefits	0	0	0				
	c. Survivor's Benefits	210	0	210				
	d. Deferred Retirements	163	1,454	1,617				
	e. Refund Liability Due to Death or Withdrawal	0						
	5. Total Current Benefit Obligations	\$1,228	\$62,718	\$63,946				
E.	EXPECTED FUTURE BENEFIT OBLIG	ATIONS		\$9,562				
F.	TOTAL CURRENT AND EXPECTED F	UTURE BENEFIT O	BLIGATIONS	\$73,508				
G.	CURRENT UNFUNDED ACTUARIAL I	LIABILITY (D5-A)		\$30,472				
H.	CURRENT AND FUTURE UNFUNDED	ACTUARIAL LIAB	ILITY (F-C)	\$36,719				

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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, 1999

		Actuarial	Actuarial	
		Present Value	Present Value	Actuarial
		of Projected	of Future	Accrued
		Benefits	Normal Costs	I jability
		<u>(1)</u>	(2)	<u>(3)=(1)-(2)</u>
А.	A CODUED LIADUITY (AAL)			
	ACCRUED LIABILITY (AAL)			
	1. Active Members	¢01 042	55 066	¢16 077
	a. Retirement Annuities	\$21,945	\$5,000	\$10,077
	b. Disability Benefits	0	150	190
	c. Survivor's Benefit	338	158	180
	d. Deferred Retirements	2,739	1,301	1,438
	e. Refunds Due to Death or Withdrawal	171_	565	(394)
	f. Total	\$25,191	\$7,090	\$18,101
	2. Deferred Retirements	12,031		12,031
	With Future Augmentation			
	3. Former Members Without	55		55
	Vested Rights			
	4. Annuitants in MPRIF	26,737		26,737
	5. Recipients Not in MPRIF	9,494		9,494
	6. Total	\$73,508	\$7,090	\$66,418
				(TTA AT)
В.	DETERMINATION OF UNFUNDED AC	IUARIAL ACCE	KUED LIABILITY	(UAAL)
	1. AAL (A6)			\$00,418 22,474
	2. Current Assets (Table 1, E6)			53,474
	3. UAAL (B1-B2)			\$32,944
C	DETERMINATION OF SUPPLEMENTA	L CONTRIBUTI	ON RATE	
0.	1. Present Value of Future Payrolls Through	h		\$97,021
	the Amortization Date of July 1, 2020	, ,		
	2. Supplemental Contribution Rate (B3/C1)		33.96%
	**	•		
No	te: If non-segregated member reserves were	not counted as as	sets, the UAAL	
wc	ouid de 540,008, resulting in a Supplemental	Control Control Call	0171.27/0.	

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Changes In Unfunded Actuarial Accrued Liability (UAAL) (dollars in thousands)

YEAR ENDING JUNE 30, 1999

A.	UAAL AT BEGINNING OF YEAR	\$31,716
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	 Normal Cost and Expenses Contribution Interest on A, B1 and B2 	\$1,360 (2,765) 2,636
	4. Total (B1+B2+B3)	\$1,231
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	\$32,947
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	 Salary Increases Investment Return MPRIF Mortality Mortality of Other Benefit Recipients Other Items 	(\$577) 578 283 (476) 189
	6. Total	(\$3)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	\$32,944
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)	\$32,944

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1999

		Percent of Payroll	Dollar Amount
A.	STATUTORY CONTRIBUTIONS - CHAPTER 3A		······································
	1. Employee Contributions	9.00%	\$591
	2. Employer Contributions	0.00%	0
	3. Total	9.00%	\$591

* Employer contributions are required to cover the portion of the benefit liabilities which are not funded by the member's accumulated contribution at the time of benefit commencement.

B. REQUIRED CONTRIBUTIONS - CHAPTER 356

C.

1. Normal Cost		
a. Retirement Benefits	13.88%	\$912
b. Disability benefits	0.00%	0
c. Survivors	0.43%	28
d. Deferred Retirement Benefits	2.68%	176
e. Refunds Due to Death or Withdrawal	1.34%	88
f. Total	18.33%	\$1,204
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	33.96%	2,231
3. Allowance for Expenses	0.43%	28_
4. Total	52.72%	\$3,463
CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	-43.72%	(\$2,872)

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1999 is \$6,571.

The deficiency amount shown above is calculated based on reported assets which include a receivable of 7,064 for member contributions that are held in the State's general fund. If this amount was not considered as an asset of the fund in these calculations, the deficiency would be 51.00%.

MILLIMAN & ROBERTSON, INC.

Summary of Actuarial Assumptions and Methods

GENERAL

Interest:	Pre-Retirement: Post-Retirement:	8.5% j 5.0% j	per annum per annum	
Salary Increases:	5.0% annually			
Mortality:	Pre-Retirement:			
	Male -	1983 (GAM (Males	-4)
	Female -	1983 (GAM (Female	es -2)
	Post-Retirement :			
	Male -	1983 (GAM (Males))
	Female -	1983 (GAM (Female	es)
	Post-Disability:			
	Male -	N/A		
	Female -	N/A		
Retirement Age:	Age 62 or if over	age 62,	one year from	m valuation date
Separation:	Rates based on ye	ars of s	ervice.	
	7	<u>(ear</u>	House	Senate
		1	0%	0%
		2	30	0
		3	0	0
		4	20	25
		5	0	0
		6	10	0
		7	0	0
		8	5	10

Disability:	None
Expenses:	Prior year administration expenses expressed as percentage of prior year payroll.
Return of Contributions:	All employees withdrawing after becoming eligible for a deferred benefit were assumed to take the larger of their contributions accumulated with interest or the value of their deferred benefit.
Family Composition:	85% of Members are assumed to be married. Female is three years younger than male. Each Member may have up to two dependent children depending on Member's age. Assumed first child born at Member's age 28 and second child born at member's age 31.
Social Security:	N/A
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 5% accounted for by 5% post-retirement assumptions.
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method based on earnings and the date the employee entered the plan is applied to all plan benefits. 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 5.0% per annum.

Summary of Plan Provisions

GENERAL

Eligibility:	Members of the State Legislature elected to office before July 1, 1997 and who elect to retain coverage under this plan (i.e., do not elect Social Security coverage.) A Member of PERA who is elected to the Legislature may elect to remain a Member of PERA and receive credit under PERA for service as a legislator.
Contributions:	
Member:	9% of salary.
Employer:	No specified statutory contribution rate. State must contribute an amount equal to the full annuity value at benefit commencement less accumulated member contributions.
Service:	Granted for the full term unless termination occurs before the end of the term. Service during all or part of four regular legislative sessions is deemed to be eight years of service.
Salary:	Compensation received for service as a Member of the legislature. Salary includes the monthly compensation paid to a legislator and the per diem payments paid during a regular or special session. Salary does not include additional compensation attributable to a leadership position.
Average Salary:	Average of the five highest successive years of salary.

RETIREMENT

Normal Retirement Benefit:

Eligibility: Age 62 and either six full years of service or service during all or part of four regular legislative sessions. For eligibility purposes, service does not include credit for time not served when a Member does not serve a full term of office.

Amount:	A percentage of Average Salary for each year of service as
	follows:

Prior to 1/1/79	 - 5% for the first eight years - 2.5% for subsequent years
After 12/31/78	2 50/
After 6/30/97	- 2.5% - 2.5% actuarially increased for
	6.0% post-retirement factor

Early Retirement Benefit:

Eligibility:	Age 60 and either six full years of Service or Service during all or part of four regular legislative sessions.
Amount:	Normal Retirement Benefit based on service and Average Salary at retirement date assuming augmentation to age 62 at 3% per year and actuarial reduction for each month the Member is under age 62.
Form of Payment:	Paid as a joint and survivor annuity to Member, spouse and dependent children. Combined service annuitants with less than six years of Legislator service may elect 100% joint and survivor bounceback annuity or a term certain and life annuity on an actuarially equivalent basis.
Benefit Increases:	Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF).

DISABILITY

None

DEATH BENEFITS

Surviving Spouse Benefit:

Eligibility: Death while active, or after termination if service requirements for a Normal Retirement Benefit are met but payments have not begun.

Amount:Survivor's payments of 50% of the retirement benefit of the
Member assuming the Member had attained normal
retirement age and had a minimum of eight years of
service. Benefit is paid for life. A former Member's
benefit is augmented as a Deferred Annuity to date of death
before determining the portion payable to the spouse. If the
legislator was at least age 60 at death, the surviving spouse
may elect an optional joint and survivor annuity. If a
deferred benefit was not eligible to be in pay status before
July 1, 1997, an actuarial increase shall be made for the
change in the post-retirement interest rates from 5% to 6%.

Surviving Dependent Children's Benefit:

Eligibility: Same as spouse's benefit.	
Amount:	Benefit for first child is 25% of the retirement benefit (computed as for surviving spouse) with 12.5% for each additional child. Maximum payable (including spouse) is 100% of the retirement benefit. Benefits cease when a child marries or attains age 18 (22 if a full-time student).
Benefit Increases:	Adjusted by MSRS to provide same increase as MPRIF.
Refund of Contributions:	
Eligibility:	Member dies before receiving any retirement benefits and survivor benefits are not payable.
Amount:	Member's contributions without interest.

TERMINATION

Refund of Contributions:

Eligibility: Termination of 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.
Deferred Benefit:	
Eligibility:	Same service requirement as for Normal Retirement.
Amount:	Benefit computed under law in effect at termination and increased by the following annual percentage: 0% before 7/1/73; 5% from 7/1/73 to 1/1/81; and 5% thereafter until the annuity begins. For Members who terminated prior to July 1, 1997 but were not eligible to commence their pensions before July 1, 1997, the benefit shall be increased to reflect the actuarial equivalent change in post-retirement interest rate from 5% to 6%. Amount is payable as a normal or early retirement.

SIGNIFICANT CHANGES

No significant changes were recognized for this valuation.

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TABLE 14

Legislators Retirement Fund

SCHEDULE OF FUNDING PROGRESS (dollars in thousands)

Actuarial Actuarial Value of Assets Valuation Date (A)		Actuarial Actuarial Accrued Liability Actuarial (AAL) (B)		Funded Ratio (A)/(B)	Actual Covered Payroll (Previous FY) (C)	UAAL as % of Covered Payroll (B - A) / (C)
07/01/91	14,694	30,403	15,709	48.33%	7,078	221.94%
07/01/92	15,160	33,224	18,064	45.63%	6,556	275.53%
07/01/93	17,169	36,801	19,632	46.65%	7,322	268.12%
07/01/94	18,738	45,448	26,710	41.23%	6,589	405.37%
07/01/95	21,213	50,255	29,042	42.21%	7,056	411.59%
07/01/96	22,532	54,225	31,693	41.55%	6,267	505.71%
07/01/97	25,678	60,055	34,377	42.76%	7,767	442.60%
07/01/98	31,212	62,928	31,716	49.60%	6,802	466.27%
07/01/99	33,474	66,418	32,944	50.40%	7,490	439.84%

TABLE 15

Legislators Retirement Fund

SCHEDULE OF EMPLOYER CONTRIBUTIONS (dollars in thousands)

Year Ended	Actuarially Required Contribution Rate	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
June 30	(11)					
1001	32 62%	7.078	637	1,672	1,889	112.98%
1991	27.67%	6,556	590	1,224	601	49.10%
1992	30.49%	7.322	659	1,573	2,284	145.20%
1995	31 12%	6.589	593	1,457	1,618	111.05%
1994	38 34%	7,056	635	2,070	2,938	141.93%
1995	41 54%	6.267	564	2,039	1,511	74.10%
1990	/3.06%	7 767	699	2,715	3,176	116.98%
1997	43.90%	6 802	612	2,655	5,199	195.82%
1998	40.0370	7 490	674	2,861	2,091	73.09%
1999	47.1970	7,150				1 10 1 10 10 10 10 10 10 10 10 10 10 10

* Includes contributions from other sources (if applicable).

Elective State Officers Retirement Fund ACTUARIAL VALUATION REPORT

July 1, 1999





Actuaries & Consultants

Internationally WOODROW MILLIMAN

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December 3, 1999

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

RE: Elective State Officers 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, 1999.

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 Minnesota State Retirement System.

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.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.

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TKC/WVH/bh

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MILLIMAN & ROBERTSON, INC.

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Report Highlights

(dollars in thousands)

		07/01/98 Valuation	07/01/99 Valuation	
А.	CONTRIBUTIONS (Table 11)			
	 Statutory Contributions - Chapter 352C % of Payroll 	9.00%	0	*
	 Required Contributions - Chapter 356 % of Payroll 	51.66%	321	*
	3. Sufficiency (Deficiency): (A.1 A.2.)	-42.66%	(321)	*
B.	FUNDING RATIOS 1. Accrued Benefit Funding Ratio			
	a. Current Assets (Table 1)	\$500	\$198	3
	b. Current Benefit Obligations (Table 8)	\$3,222	\$3,373	3
	c. Funding Ratio: (a/b)	15.52%	5.87%	, D
	2 Accrued Liability Funding Ratio			
	a Current Assets (Table 1)	\$500	\$198	3
	b. Actuarial Accrued Liability (Table 9)	\$3.369	\$3.373	3
	c. Funding Ratio: (a/b)	14.84%	5.87%	ó
	3 Projected Benefit Funding Ratio (Table 8)			
	a Current and Expected Future Assets	\$653	\$198	2
	b. Current and Expected Future Repetit Obligations	\$3 522	\$3,373	3
	c. Funding Ratio: (a/b)	18.54%	5.87%	<u>,</u>
C.	PLAN PARTICIPANTS			
	a Number (Table 3)	6	()
	b Projected Annual Earnings	\$500	\$()
	c. Average Annual Earnings (Projected \$)	\$83,302	\$()
	d. Average Age	55.0	0.0)
	e. Average Service	13.3	0.0)
	2. Others			
	a. Service Retirements (Table 4)	5	8	3
	b. Survivors (Table 5)	6	4	5
	c. Disability Retirements (Table 6)	0	()
	d. Deferred Retirements (Table 7)	3	4	4
	e. Terminated Other Non-vested (Table 7)	0	(<u>)</u>
	f. Total	14	17	/

* For the July 1, 1999 valuation these amounts are in thousands of dollars.

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:

- 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 5.87%. The corresponding ratio for the prior year was 15.52%
- 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 1999 the ratio is 5.87%, which is a decrease from the 1998 value of 14.84%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 5.87% 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 E1 to E6. 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.

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 as follows:

- 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

Disclosure of the Current Benefit Obligation amounts used to be required by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 has been superceded by Statement No. 25. Tables 14 and 15 of this report are included to fulfill the requirements of Statement No. 25.

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 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 5.00% 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.

Source 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 expectations. 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:

- Normal costs based on the Entry Age Normal Actuarial Cost Method.
- A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.
- An Allowance for Expenses.

Table 11 shows the Plan has a contribution deficiency since the Statutory Contribution Amount is \$0 compared to the Required Contribution Amount of \$321,000.

Changes in Actuarial Assumptions

There were no changes in actuarial assumptions since the last valuation.

Changes in Plan Provisions

There were no significant changes in plan provisions since the last valuation.

Changes in Plan Population

The remaining six active employees have either retired, terminated or elected coverage under another plan. Since this plan is closed to new entrants, there will no longer be an active payroll associated with plan costs. Accordingly, we have prepared a level dollar amortization of the remaining unfunded actuarial liability.

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Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1999

		Market Value	Cost Value
A.	ASSETS IN TRUST	\$ 0	* 0
	1. Cash, Equivalents, Short-term Securities	\$U	\$0
	2. Fixed income	0	0
	3. Equity	0	0
	4. Real Estate	0	0
	5. Equily in MPRIF	203	203
	o. Other	203	203
	Subtotal	\$203	\$203
B.	ASSETS RECEIVABLE	0	0
C.	LIABILITIES	(5)	(5)
D.	NET ASSETS HELD IN TRUST FOR PENSION BENEFITS 1. MPRIF Reserves 2. Member Reserves 3. Other Non-MPRIF Reserves 4. Total Assets Available for Benefits	0 194 4 \$198	0 194 4 \$198
E.	 DETERMINATION OF ACTUARIAL VALUE OF ASSETS 1. Cost Value of Assets Available for Benefits (D4) 2. Market Value (D4) 3. Cost Value (D4) 4. Market Over Cost: (E2-E3) 5. One-third of Market Over Cost: (E4)/3 6. Actuarial Value of Assets (E1+E5) 	\$198 198 \$0	\$198 0
	 Actuarial Value of Assets (E1+E5) (Same as "Current Assets") 		

Statement of Change In Plan Net Assets (dollars in thousands)

YEAR ENDING JUNE 30, 1999

		Market Value	Cost Value
A.	ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$500	\$500
B.	ADDITIONS		
	1. Member Contributions	\$26	\$26
	2. Employer Contributions	40	40
	3. Contributions From Other Sources	0	0
	4. MPRIF Income	0	0
	5. Net Investment Income		
	a. Interest and Dividends	0	0
	b. Net Realized Gain (Loss)	0	0
	c. Net Change in Unrealized Gain (Loss)	0	0
	d. Investment Expenses	0	0
	Net Subtotal	0	0
	6. Other	0	0
	7. Total Additions	\$66	\$66
C.	OPERATING EXPENSES		
	1. Service Retirements paid from MPRIF	\$0	\$0
	2. Service Retirements paid from plan assets	213	213
	2. Disability Benefits	0	0
	3. Survivor Benefits	0	0
	4. Refunds	87	87
	6. Administrative Expenses	5	5
	7. Other	63	63
	8. Total Disbursements	\$368	\$368
D.	OTHER CHANGES IN RESERVES	0	0
E.	ASSETS AVAILABLE AT END OF PERIOD	\$198	\$198
-			

ELECTIVE STATE OFFICERS RETIREMENT PLAN

	ACTIVE	MEMBERS	<u>AS OF JUNE 30, 1999</u>
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	Years of Service									
Age	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	25-29	<u>30+</u>	ALL	
<25	0	0	0	0	0	0	0	0	0	
25-29	0	0	0	0	0	0	0	0	0	
30-34	0	0	0	0	0	0	0	0	0	
35-39	0	0	0	0	0	0	0	0	0	
40-44	0	0	0	0	0	0	0	0	0	
45-49	0	0	0	0	0	0	0	0	0	
50-54	0	0	0	0	0	0	0	0	0	
55-59	0	0	0	0	0	0	0	0	0	
60-64	0	0	0	0	0	0	0	0	0	
65+	0	0	0	0	0	0	0	0	0	
ALL	0	0	0	0	0	0	0	0	0	

AVERAGE ANNUAL EARNINGS

Years of Service									
Age	<u><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	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0
45-49	0	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	0	. 0
ALL	0	0	0	0	0	0	0	0	0

PRIOR FISCAL YEAR EARNINGS (IN ACTUAL DOLLARS) BY YEARS OF SERVICE

Age	<1	<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	0	0	0	0	0	0	0	0) 0

MILLIMAN & ROBERTSON, INC.

ELECTIVE STATE OFFICERS RETIREMENT PLAN

_				Years l	Retired			
Age	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	15-19	20-24	<u>25+</u>	ALL
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	1	0	0	0	0	0	0	1
65-69	2	1	3	0	0	0	0	6
70-74	0	1	0	0	0	0	0	1
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0.
ALL	3	2	3	0	0	0	0	8

SERVICE RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

				Years I	Retired			
<u>Age</u>	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	41,232	0	0	0	0	0	0	41,232
65-69	43,404	2,642	19,099	0	0	0	0	24,458
70-74	0	11,667	0	0	0	0	0	11,667
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	42,680	7,155	19,099	0	0	0	0	24,956

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS RETIRED

Age	<u><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	128,040	14,310	57,297	0	0	0	0	199,648

MILLIMAN & ROBERTSON, INC.

TABLE 5

ELECTIVE STATE OFFICERS RETIREMENT PLAN

				Years Sin	ce Death			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	1	0	0	0	0	1
65-69	0	1	0	0	0	0	0	. 1
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	1	0	0	0	0	1
85+	0	0	1	0	0	1	0	2
ALL	0	1	3	0	0	1	0	5

SURVIVORS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

				Years Sine	ce Death			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	5,858	0	0	0	0	5,858
65-69	0	33,761	0	0	0	0	0	33,761
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	15,815	0	0	0	0	15,815
85+	0	0	29,202	0	0	7,342	0	18,272
ALL	0	33,761	16,958	0	0	7,342	0	18,396

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS SINCE DEATH

Age	<u><1</u>	<u>1-4</u>	<u>5-9</u>	10-14	<u>15-19</u>	20-24	<u>25+</u>	ALL
All	0	33,761	50,874	0	0	7,342	0	91,980

TABLE 6

ELECTIVE STATE OFFICERS RETIREMENT PLAN

-				Years D	isabled			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	. 0	0	0	0	0	0	0	0

DISABILITY RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

_				Years D	isabled			
<u>Age</u>	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	0	0	0	0	0

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS DISABLED

						-		
Age	<u><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	0	0	0	0	0	0	0	0

Reconciliation Of Members

		Termir	inated	
		Deferred	Other	
	Actives	Retirement	Non-Vested	
ON JUNE 30, 1998	6	3	0	
ADDITIONS	0	2	0	
DELETIONS				
1. Service Retirement	(2)	(1)	0	
2. Disability	0	0	0	
3. Death	0	0	0	
4. Terminated - Deferred	(2)	0	0	
5. Terminated - Refund	(1)	0	0	
6. Terminated - Other Non-Vested	0	0	0	
7. Returned as Active	0	0	0	
8. Transferred (to)/from Other Fund	(1)	0	0	
DATA ADJUSTMENTS	0	0	0	
Vested	0			
Non-Vested	0			
TOTAL ON JUNE 30, 1999	0	4	0	
	ON JUNE 30, 1998 ADDITIONS DELETIONS 1. Service Retirement 2. Disability 3. Death 4. Terminated - Deferred 5. Terminated - Deferred 5. Terminated - Refund 6. Terminated - Other Non-Vested 7. Returned as Active 8. Transferred (to)/from Other Fund DATA ADJUSTMENTS Vested Non-Vested TOTAL ON JUNE 30, 1999	ActivesON JUNE 30, 19986ADDITIONS0DELETIONS11. Service Retirement(2)2. Disability03. Death04. Terminated - Deferred(2)5. Terminated - Refund(1)6. Terminated - Other Non-Vested07. Returned as Active08. Transferred (to)/from Other Fund(1)DATA ADJUSTMENTS0Vested0Non-Vested0TOTAL ON JUNE 30, 19990	ActivesTermin Deferred RetirementON JUNE 30, 199863ADDITIONS02DELETIONS021. Service Retirement(2)(1)2. Disability003. Death004. Terminated - Deferred(2)05. Terminated - Refund(1)06. Terminated - Other Non-Vested007. Returned as Active008. Transferred (to)/from Other Fund(1)0DATA ADJUSTMENTS00Vested00Non-Vested00TOTAL ON JUNE 30, 199904	

		Recipients			
		Retirement Annuitants	Disabled	Survivors	
A.	ON JUNE 30, 1998	5	0	6	
B.	ADDITIONS	3	0	0	
C.	DELETIONS				
	1. Service Retirement	0	0	0	
	2. Death	0	0	(1)	
	3. Annuity Expired	0	0	0	
	4. Returned as Active	0	0	0	
D.	DATA ADJUSTMENTS	0	0	0	
E.	TOTAL ON JUNE 30, 1999	8	0	5	

	Elective State Officers Retirement Fund						
	Actuarial (dollars	Balance Sheet in thousands)					
	JUL	Y 1, 1999					
A. CURRENT ASS	SETS (TABLE 1, E6)			\$198			
 B. EXPECTED FU 1. Present Value Statutory 2. Present Value 3. Total Expected 	TURE ASSETS e of Expected Future Supplemental Contribution e of Future Normal Costs ed Future Assets	ns (See Table 11)		\$0 			
C. TOTAL CURRI	ENT AND EXPECTED F	UTURE ASSETS		\$198			
D. CURRENT BEN 1. Benefit Recip a. Retiremen	VEFIT OBLIGATIONS vients t Annuities	Non-Vested	Vested \$2,086	<u>Total</u> \$2,086			
b. Disabilityc. Surviving and Child	Benefits Spouse Benefits		0 750	0 750			
2. Deferred Reti	rements with Future Augr	nentation	537	537			
3. Former Mem	bers without Vested Right	S	0	0			
 4. Active Memb a. Retiremen b. Disability c. Survivor's d. Deferred F e. Refund Ling to Death or 	ers t Annuities Benefits Benefits Retirements ability Due r Withdrawal	0 0 0 0	0 0 0 0 0	0 0 0 0 0			
5. Total Current	Benefit Obligations	\$0	\$3,373	\$3,373			
E. EXPECTED FU	TURE BENEFIT OBLIG	ATIONS		\$0			
F. TOTAL CURRE	ENT AND EXPECTED F	UTURE BENEFIT C	BLIGATIONS	\$3,373			
G. CURRENT UN	FUNDED ACTUARIAL I	LIABILITY (D5-A)		\$3,175			
H. CURRENT AN	O FUTURE UNFUNDED	ACTUARIAL LIAE	BILITY (F-C)	\$3,175			

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

(dollars in thousands)

JULY 1, 1999

		Actuarial	Actuarial	
		Present Value	Present Value	Actuarial
		of Projected	of Future	Accrued
		Benefits	Normal Costs	Liability
A.	DETERMINATION OF ACTUARIAL	(1)	(2)	(3)=(1)-(2)
	ACCRUED LIABILITY (AAL)			
	1. Active Members			
	a. Retirement Annuities	\$0	\$0	\$0
	b. Disability Benefits	0	0	0
	c. Survivor's Benefit	0	ů 0	Ő
	d. Deferred Retirements	0	ů 0	0 0
	e. Refunds Due to Death or Withdrawal	0	ů 0	0 0
	f. Total	\$0	<u> </u>	<u> </u>
				\
	2. Deferred Retirements	537		537
	With Future Augmentation			001
	U			
	3. Former Members Without	0		0
	Vested Rights			0
	-			
	4. Annuitants in MPRIF	0		0
	5. Recipients Not in MPRIF	2,836		2,836
	6. Total	\$3,373	\$0	\$3,373
B.	DETERMINATION OF UNFUNDED ACT	UARIAL ACCR	UED LIABILITY	(UAAL)
	1. AAL (A6)			\$3,373
	2. Current Assets (Table 1, E6)			198
	3. UAAL (B1-B2)			\$3,175
				<u></u>
C.	DETERMINATION OF SUPPLEMENTAL	CONTRIBUTIO	ON RATE	
	1. Current UAAL to be Amorized by July 1	, 2020		\$3,175
	2. Supplemental Contribution Amount			\$316
NT. 4				
INOt	e: 11 non-segregated member reserves were n	ot counted as asse	ets, the UAAL	
wou	nd be \$3,3/8, resulting in a Supplemental Co	ntribution Amou	nt of 336.	

Changes In Unfunded Actuarial Accrued Liability (UAAL) (dollars in thousands)

YEAR ENDING JUNE 30, 1999

A.	UAAL AT BEGINNING OF YEAR	\$2,869
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	 Normal Cost and Expenses Contribution Interest on A, B1 and B2 	\$70 (67) 244
	4. Total (B1+B2+B3)	\$247
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	\$3,116
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	 Salary Increases Investment Return MPRIF Mortality Mortality of Other Benefit Recipients Other Items 	\$0 30 0 (120) 149
	6. Total	\$59
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	\$3,175
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)	\$3,175

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1999

A.	STATUTORY CONTRIBUTIONS - CHAPTER 352C	 Dollar Amount
	 Employee Contributions Employer Contributions 	\$0 0
	3. Total	 \$0

* Employer contributions are required to cover the portion of the benefit liabilities which are not funded by the member's accumulated contribution at the time of benefit commencement.

B. REQUIRED CONTRIBUTIONS - CHAPTER 356

C.

1.	Normal Cost a. Retirement Benefits b. Disability benefits c. Survivors d. Deferred Retirement Benefits e. Refunds Due to Death or Withdrawal		\$0 0 0 0 0
	f. Total		\$0
2.	Supplemental Contribution Amortization by July 1, 2020 of UAAL		316
3.	Allowance for Expenses		5
4.	Total		\$321
C	(\$321)		

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1999 is \$0.

The deficiency amount shown above is calculated based on reported assets which include a receivable of 203 for member contributions that are held in the State's general fund. If this amount was not considered as an asset of the fund in these calculations, the deficiency would be 341.

Summary of Actuarial Assumptions and Methods

Interest:	Pre-Retirement: 8.5% per annum			
	Post-Retirement: 5.0% per annum			
Salary Increases:	5.0% annually			
Mortality:	Pre-Retirement:			
		Male -	1983 GAM (Males -4)	
		Female -	1983 GAM (Females -2)	
	Post-Retir	ement:		
		Male -	1983 GAM (Males)	
		Female -	1983 GAM (Females)	
	Post-Disability:			
		Male -	N/A	
		Female -	N/A	
Retirement Age:	Age 62 or if over age 62, one year from valuation date.			
Separation:	Rates based on years of service:		vice:	
		Year	Rate	
		1	0%	
		2	0	
		3	0	
		4	50	
		5	0	
		6	0	
		7	0	
		8	50	

Disability:

None
Expenses:	Prior year administration expenses expressed as percentage of prior year payroll.
Return of Contributions:	All employees withdrawing after eight years of service were assumed to leave their contributions on deposit and receive a deferred annuitant benefit.
Family Composition:	85% of Members are assumed to be married. Female is three years younger than male. Each Member may have up to two dependent children depending on the Member's age. Assume first child born at Member's age 28 and second child born at Member's age 31.
Social Security:	N/A
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 5% accounted for by 5% post-retirement assumptions.
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method based on earnings and the date the employee entered the plan is applied to all plan benefits. 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 5.0% per annum.

Elective State Officers Retirement Fund

Summary of Plan Provisions

GENERAL

Eligibility:	Employment as a "Constitutional Officer" as elected prior to July 1, 1997 and who elect to retain coverage under this plan (i.e., do not elect Social Security coverage).
Contributions:	
Member:	9% of salary.
Employer:	No specified statutory contribution rate. State must contribute an amount equal to the full annuity value at benefit commence- ment less accumulated member contributions.
Allowable Service:	Service while in an eligible position.
Salary:	Salary upon which Elective State Officers Retirement Plan contributions have been made.
Average Salary:	Average of the five highest successive years of salary.

RETIREMENT

Normal Retirement Benefit:

Eligibility:	Age 62 and eight years of Allowable Service.
Amount:	2.5% of Average Salary for each year of Allowable Service. For Members who were employed as of June 30, 1997 and are still employed on July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.

Early Retirement Benefit:

Eligibility:	Age 60 and	eight years o	f Allowable Service.
Lugionny.	nge ov and	orgine yound o	1 1 1110 11 4010 001 1100.

Amount:	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.5% for each month the Member is under age 62 at time of retirement.
Form of Payment:	Life annuity
Benefit Increases:	Adjusted by MSRS to provide same increase as MPRIF.

DISABILITY

None

DEATH

Surviving Spouse Benefit:

Eligibility:	Death while active or after retirement or with at least eight years of Allowable Service.
Amount:	Survivor's payment of 50% of the retirement benefit of the Member assuming the Member had attained age 62 and had a minimum of eight years of Allowable Service. Benefit is paid for life. A former Member's benefit is augmented the same as a Deferred Annuity to date of death before determining the portion payable to the spouse.
	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit as of July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.

Surviving Dependent Child Benefit:

Eligibility:	Same as spouse's benefit.
Amount:	Benefit for first child is 25% of the retirement benefit (computed as for surviving spouse) with 12.5% for each additional child. Maximum payable (including spouse) is 100% of the retirement benefit. Benefits cease when a child marries or attains age 18 (22 if a full-time student).

	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit as of July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.
Benefit Increases:	Adjusted by MSRS to provide same increase as MPRIF.

TERMINATION

Refund of Contributions:

Eligibility:	Termination of service.
Amount:	Member's contributions with 5% interest compounded annually if termination occurred before May 16, 1989 and 6% interest compounded annually if termination occurred on or after May 16, 1989. A deferred annuity may be elected in lieu of a refund.
Deferred Benefit:	
Eligibility:	Eight years of Allowable Service.
Amount:	Benefit computed under law in effect at termination and increased by the following annual percentage: 0% before $7/1/79$; 5% from $7/1/79$ to $1/1/81$; and 3% until age 55; and 5% thereafter until the annuity begins. Amount is payable as a normal or early retirement.
	If a Member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.

SIGNIFICANT CHANGES

No significant changes were recognized for this valuation.

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TABLE 14

Elective State Officers Retirement Fund

SCHEDULE OF FUNDING PROGRESS (dollars in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (A)	Actuarial Accrued Liability (AAL) (B)	Unfunded AAL (UAAL) (B - A)	Funded Ratio (A)/(B)	Actual Covered Payroll (Previous FY) (C)	UAAL as % of Covered Payroll (B - A) / (C)
07/01/91	308	2,249	1,941	13.69%	422	459.95%
07/01/92	334	2,380	2,046	14.03%	378	541.27%
07/01/93	322	2,689	2,367	11.97%	500	473.40%
07/01/94	361	2,848	2,487	12.68%	411	605.11%
07/01/95	378	2,948	2,570	12.82%	422	609.00%
07/01/96	412	2,983	2,571	13.81%	456	563.82%
07/01/97	456	3,214	2,758	14.19%	467	590.58%
07/01/98	500	3,369	2,869	14.84%	461	622.34%
07/01/99	198	3,373	3,175	5.87%	291	1091.07%

TABLE 15

Elective State Officers Retirement Fund

SCHEDULE OF EMPLOYER CONTRIBUTIONS (dollars in thousands)

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
1001	24 949/	422	20	100	40	36 70%
1991	33.28%	378	34	92	111	120.65%
1993	36.23%	500	45	136	88	64.71%
1994	38.64%	411	37	122	164	134.43%
1995	42.00%	422	38	139	165	118.71%
1996	43.58%	456	41	158	151	95.57%
1997	43.49%	467	42	161	167	103.73%
1998	51.07%	461	42	193	175	90.67%
1999	51.66%	291	26	124	40	32.26%

* Includes contributions from other sources (if applicable).

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Judges Retirement Fund ACTUARIAL VALUATION REPORT

July 1, 1999

Revised





MILLIMAN & ROBERTSON, INC.

Actuaries & Consultants

Internationally WOODROW MILLIMAN

Suite 400, 15800 Bluemound Road, Brookfield, Wisconsin 53005-6069 Telephone: 262/784-2250 Fax: 262/784-7287

January 7, 2000

Mr. Lawrence A. Martin
Executive Director
Minnesota Legislative Commission on Pensions and Retirement
55 State Office Building
St. Paul, Minnesota 55155-1201

RE: MSRS Valuation Reports – Revised Judges Plan Report

Dear Larry:

Enclosed are two three-hole-punched copies and one loose copy of the corrected July 1, 1999 valuation report for the Judges Retirement Fund. Ed Burek brought to our attention that the 1998 changes in member and employer contribution rates had not been reflected in our first report. This version corrects that oversight.

Appropriate copies have been forwarded to the parties identified below. Each recipient is asked to replace the entire Judges Plan report in the binder(s) previously received. We apologize for the inconvenience.

Please let me know if you have any questions.

Sincerely,

10m Cunt

Thomas K. Custis, F.S.A. Consulting Actuary

TKC/bh

cc: Dave Bergstrom, MSRS (1)
Pamela Wheelock, Commissioner of Finance (2)
Jim Nobles, Legislative Auditor (2)
Legislative Reference Library (6)
Bonnie Wurst (1)



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LOPAR JANIE 2000



Actuaries & Consultants

Internationally WOODROW MILLIMAN

Suite 400, 15800 Bluemound Road, Brookfield, Wisconsin 53005-6069 Telephone: 262/784-2250 Fax: 262/784-7287

January 7, 2000

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

RE: Judges 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, 1999.

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 Minnesota State Retirement System.

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.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.

Thomas K. Custis, F.S.A., M.A.A.A.

Consulting Actuary

William V. Hogan William V. Hogan, F.S.A., M.A.A.A.

Consulting Actuary

TKC/WVH/bh

Albany, Atlanta, Boston, Chicago, Dallas, Denver, Hartford, Houston, Indianapolis, Irvine, Los Angeles, Milwaukee, Minneapolis, New York, Omaha, Philadelphia, Phoenix, Portland, ME, Portland, OR, St. Louis, Salt Lake City, San Diego, San Francisco, Seattle, Tampa, Washington, D.C., Bermuda, Tokyo

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Report Highlights (dollars in thousands)

		07/01/98 Valuation	07/01/99 Valuation
A.	CONTRIBUTIONS (Table 11)1. Statutory Contributions - Chapter 490% of Payroll	28.28%	28.50%
	 Required Contributions - Chapter 356 % of Payroll 	27.32%	26.75%
	3. Sufficiency (Deficiency): (A.1 A.2.)	0.96%	1.75%
B.	FUNDING RATIOS 1. Accrued Benefit Funding Ratio		
	a. Current Assets (Table 1)	\$86,578	\$97,692
	b. Current Benefit Obligations (Table 8)	\$124,728	\$133,375
	c. Funding Ratio: (a/b)	69.41%	73.25%
	2. Accrued Liability Funding Ratio		
	a. Current Assets (Table 1)	\$86,578	\$97,692
	b. Actuarial Accrued Liability (Table 9)	\$130,727	\$139,649
	c. Funding Ratio: (a/b)	66.23%	69.96%
	3. Projected Benefit Funding Ratio (Table 8)		
	a. Current and Expected Future Assets	\$172,986	\$186,761
	b. Current and Expected Future Benefit Obligations	\$169,215	\$179,773
	c. Funding Ratio: (a/b)	102.23%	103.89%
C.	PLAN PARTICIPANTS		
	a. Number (Table 3)	278	282
	b. Projected Annual Earnings	\$25,890	\$27,080
	c. Average Annual Earnings (Projected \$)	\$93,130	\$96,030
	d. Average Age	53.7	53.9
	e. Average Service	10.6	10.6
	2. Others	1.40	1.40
	a. Service Retirements (Table 4)	148	149
	b. Survivors (1able 5)	83	83
	c. Disability Kettrements (Table 0)	07	0
	a. Deterring ted Other Non vested (Table 7)	7	1 I
	f Total	246	250

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:

- 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 73.25%. The corresponding ratio for the prior year was 69.41%
- 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 1999 the ratio is 69.96%, which is an increase from the 1998 value of 66.23%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 103.89% verifies that the current statutory contributions are sufficient.

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 E1 to E6. 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.

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 as follows:

- <u>For Active Members</u> 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

Disclosure of the Current Benefit Obligation amounts used to be required by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 has been superceded by Statement No. 25. Tables 14 and 15 of this report are included to fulfill the requirements of Statement No. 25.

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 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 5.00% 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.

Source 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 expectations. 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:

- Normal costs based on the Entry Age Normal Actuarial Cost Method.
- A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.
- An Allowance for Expenses.

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 28.50% compared to the Required Contribution Rate of 26.75%.

Changes in Actuarial Assumptions

There were no changes in actuarial assumptions since the last valuation.

Changes in Plan Provisions

There were no significant changes in plan provisions since the last valuation.

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Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1999

		Market Value	Cost Value
A.	ASSETS IN TRUST		
	1. Cash, Equivalents, Short-term Securities	\$2,855	\$2,855
	2. Fixed Income	4,946	5,103
	3. Equity	17,573	14,476
	4. Real Estate	824	685
	5. Equity in MPRIF	72,997	72,997
	6. Other	0	0
	Subtotal	\$99,195	\$96,116
B.	ASSETS RECEIVABLE	605	605
C.	LIABILITIES	(55)	(55)
D.	 NET ASSETS HELD IN TRUST FOR PENSION BENEFITS 1. MPRIF Reserves 2. Member Reserves 3. Other Non-MPRIF Reserves 4. Total Assets Available for Benefits 	72,997 12,390 14,358 \$99,745	72,997 12,390 11,279 \$96,666
Е.	DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
	1 Cost Value of Assets Available		\$96,666
	for Benefits (D4)		
	2. Market Value (D4)	\$99,745	
	3. Cost Value (D4)	96,666	
	4. Market Over Cost: (E2-E3)	\$3,079	
	5. One-third of Market Over Cost: (E4)/3	•	1,026
	6. Actuarial Value of Assets (E1+E5)		\$97,692
	(Same as "Current Assets")		
	•		

Statement of Change In Plan Net Assets (dollars in thousands)

YEAR ENDING JUNE 30, 1999

		Market Value	Cost Value
A.	ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$88,275	\$85,730
B.	ADDITIONS		
	1. Member Contributions	\$2,069	\$2,069
	2. Employer Contributions	7,051	7,051
	3. Contributions From Other Sources	0	0
	4. MPRIF Income	10,236	10,236
	5. Net Investment Income		
	a. Interest and Dividends	2,034	2,034
	b. Net Realized Gain (Loss)	0	0
	c. Net Change in Unrealized Gain (Loss)	536	0
	d. Investment Expenses	(29)	(29)
	Net Subtotal	2,541	2,005
	6. Other	10	11
	7. Total Additions	\$21,907	\$21,373
C.	OPERATING EXPENSES		
	1. Service Retirements paid from MPRIF	\$9,996	\$9,996
	2. Service Retirements paid from plan assets	0	0
	2. Disability Benefits	0	0
	3. Survivor Benefits	0	0
	4. Refunds	375	375
	6. Administrative Expenses	38	38
	7. Other	28	28
	8. Total Disbursements	\$10,437	\$10,437
D.	OTHER CHANGES IN RESERVES	0	0
E.	ASSETS AVAILABLE AT END OF PERIOD	\$99,745	\$96,666

ACTIVE MEMBERS AS OF JUNE 30, 1999

_				Ye	ars of Servi	ice			
Age	<u><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	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	1	0	0	0	0	0	0	0	. 1
35-39	1	1	1	0	0	0	0	0	3
40-44	3	9	4	0	0	0	0	0	16
45-49	5	16	21	6	1	0	0	0	49
50-54	5	18	25	29	14	2	0	0	93
55-59	2	10	12	8	18	9	0	0	59
60-64	1	5	2	13	7	11	9	0	48
65+	0	0	4	5	2	0	2	0	13
ALL	18	59	69	61	42	22	11	0	282

AVERAGE ANNUAL EARNINGS

	Years of Service											
Age	<u><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	0	0	0	0	0	0	0	0	0			
25-29	0	0	0	0	0	0	0	0	0			
30-34	93,253	0	0	0	0	0	0	0	93,253			
35-39	91,827	92,544	92,544	0	0	0	0	0	92,305			
40-44	85,285	92,544	78,629	0	0	0	0	0	87,704			
45-49	86,838	93,195	94,137	93,550	92,544	0	0	0	92,980			
50-54	86,208	93,047	87,556	93,121	92,608	95,564	0	0	91,214			
55-59	82,657	93,148	94,465	93,153	93,809	93,215	0	0	93,273			
60-64	1,200	94,960	56,271	93,612	92,544	94,612	92,544	0	90,145			
65+	0	0	94,054	93,469	93,744	0	92,544	0	93,549			
ALL	81,816	93,181	89,785	93,301	93,165	94,127	92,544	0	91,697			

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

								-	
Age	<u><1</u>	1-4	<u>5-9</u>	10-14	<u>15-19</u>	<u>20-24</u>	<u>25-29</u>	<u> 30+</u>	ALL
All	1,472	5,497	6,195	5,691	3,912	2,070	1,017	0	25,858

MILLIMAN & ROBERTSON, INC.

	Years Retired											
Age	<u><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	0	0	0	0	0	0	0	(
50-54	0	0	0	0	0	0	0	(
55-59	0	0	0	0	0	0	0	(
60-64	2	3	1	0	0	0	0					
65-69	4	12	3	0	0	0	0	19				
70-74	4	20	17	6	0	0	0	4				
75-79	0	0	29	12	2	0	0	4:				
80-84	0	0	0	12	4	0	0	1				
85+	0	0	0	0	8	7	3	1				
ALL	10	35	50	30	14	. 7	3	14				

SERVICE RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

	Years Retired										
Age	<1	<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	0	0	0	0	0	0	0	0			
50-54	0	0	0	0	0	0	0	0			
55-59	0	0	0	0	0	0	0	0			
60-64	51,822	67,037	46,370	0	0	0	0	58,521			
65-69	49,047	51,596	35,068	0	0	0	0	48,450			
70-74	36,179	41,359	54,517	42,175	0	0	0	45,782			
75-79	0	0	55,831	49,604	27,200	0	0	52,762			
80-84	0	0	0	52,495	67,717	0	0	56,301			
85+	0	0	0	0	58,596	49,012	50,783	53,567			
ALL	44,455	47,070	53,949	49,275	56,717	49,012	50,783	50,720			

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

1								
Age	<u><1</u>	<u>1-4</u>	<u>5-9</u>	10-14	<u>15-19</u>	20-24	<u>25+</u>	ALL
All	444	1,647	2,697	1,478	794	343	152	7,557

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MILLIMAN & ROBERTSON, INC.

_				Years Sin	ce Death			
Age	<u><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	0	2	0	1	0	0	0	3
50-54	0	0	0	3	0	0	0	3
55-59	0	1	0	0	0	0	0	1
60-64	0	2	0	2	0	0	0	4
65-69	1	2	1	0	0	0	0	4
70-74	0	5	5	2	2	2	2	18 -
75-79	0	2	2	1	2	1	0	8
80-84	0	5	2	2	0	2	2	13.
85+	2	1	5	0	1	5	15	29
ALL	3	20	15	11	5	10	19	83

SURVIVORS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

	Years Since Death										
Age	<u><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	0	29,895	0	34,747	0	0	0	31,512			
50-54	0	0	0	40,713	0	0	0	40,713			
55-59	0	29,639	0	0	0	0	0	29,639			
60-64	0	41,811	0	29,984	0	0	0	35,898			
65-69	8,884	15,883	41,231	0	0	0	0	20,470			
70-74	0	34,621	32,731	24,980	27,371	16,032	24,910	29,075			
75-79	0	36,409	34,737	52,184	38,802	17,798	0	36,235			
80-84	0	41,668	23,258	26,238	0	18,077	40,203	32,607			
85+	52,427	24,314	25,302	0	40,912	21,465	26,352	27,558			
ALL	37,913	34,170	29,826	33,770	34,652	19,334	27,658	30,218			

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS SINCE DEATH

<u>Age</u>	<u><1</u>	1-4	<u>5-9</u>	<u>10-14</u>	<u>15-19</u>	<u>20-24</u>	<u>25+</u>	ALL	
All	113	683	447	371	173	193	525	2,508	3

_				Years D	isabled			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	1	0	1	0	2
75-79	0	0	0	1	1	0	0	2
80-84	0	0	0	2	0	0	0	2
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	4	1	1	0	6

DISABILITY RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

_				Years D	isabled			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	63,466	0	44,242	0	53,854
75-79	0	0	0	51,845	85,999	0	0	68,922
80-84	0	0	0	42,609	0	0	0	42,609
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	50,132	85,999	44,242	0	55,128

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED

-								
<u>Age</u>	<u><1</u>	<u>1-4</u>	<u>5-9</u>	<u>10-14</u>	15-19	20-24	<u>25+</u>	ALL
All	0	0	0	200,528	85,999	44,242	0	330,768

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MILLIMAN & ROBERTSON, INC.

Reconciliation Of Members

			Terminated		
			Deferred	Other	
		Actives	Retirement	Non-Vested	
A.	ON JUNE 30, 1998	278	7	2	
B.	ADDITIONS	18	6	0	
C.	DELETIONS				
	1. Service Retirement	(8)	(1)	0	
	2. Disability	0	0	0	
	3. Death	0	0	0	
	4. Terminated - Deferred	(6)	0	0	
	5. Terminated - Refund	0	0	0	
	6. Terminated - Other Non-Vested	0	0	0	
	7. Returned as Active	0	0	0	
	8. Transferred (to)/from Other Fund	0	0	0	
D.	DATA ADJUSTMENTS	0	(1)	(1)	
	Vested	170			
	Non-Vested	112			
E.	TOTAL ON JUNE 30, 1999	282	11	1	

		Recipients		
		Retirement Annuitants	Disabled	Survivors
A.	ON JUNE 30, 1998	148	6	83
B.	ADDITIONS	9	0	3
C.	DELETIONS	0	0	0
	1. Service Retirement	0 (7)	0	0 (2)
	2. Deam 3. Annuity Expired	(7)	0	(2)
	4. Returned as Active	0	0	0
D.	DATA ADJUSTMENTS	(1)	0	(1)
E.	TOTAL ON JUNE 30, 1999	149	6	83

	Judges Re	tirement Fund		
	Actuarial (dollars	Balance Sheet in thousands)		
	JUL	Y 1, 1999		
A.	CURRENT ASSETS (TABLE 1, E6)			\$97,692
B.	 EXPECTED FUTURE ASSETS 1. Present Value of Expected Future Statutory Supplemental Contribution 2. Present Value of Future Normal Costs 3. Total Expected Future Assets 	ns (See Table 11)	-	\$48,945 <u>40,124</u> \$89,069
C.	TOTAL CURRENT AND EXPECTED F	UTURE ASSETS	-	\$186,761
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	 a. Retirement Annuities b. Disability Benefits c. Surviving Spouse and Child Benefits 		\$62,852 2,634 19,914	\$62,852 2,634 19,914
	2. Deferred Retirements with Future Augr	nentation	928	928
	3. Former Members without Vested Right	S	14	14
	 4. Active Members a. Retirement Annuities b. Disability Benefits c. Survivor's Benefits d. Deferred Retirements e. Refund Liability Due to Death or Withdrawal 	2,437 2,755 2,204 0 0	39,282 0 0 0 355	41,719 2,755 2,204 0 355
	5. Total Current Benefit Obligations	\$7,396	\$125,979	\$133,375
E.	EXPECTED FUTURE BENEFIT OBLIG	ATIONS	-	\$46,398
F.	TOTAL CURRENT AND EXPECTED F	UTURE BENEFIT	OBLIGATIONS	\$179,773
G.	CURRENT UNFUNDED ACTUARIAL	LIABILITY (D5-A))	\$35,683
H.	CURRENT AND FUTURE UNFUNDED	ACTUARIAL LIA	BILITY (F-C)	(\$6,988)

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

(dollars in thousands)

JULY 1, 1999

		Actuarial	Actuarial	
		Present Value	Present Value	Actuarial
		of Projected	of Future	Accrued
		Benefits	Normal Costs	Liability
Α	DETERMINATION OF ACTUARIAL	(1)	(2)	(3)=(1)-(2)
11.	ACCRUED LIABILITY (AAL)			
	1 Active Members			
	a Detirement Annuities	\$83 893	\$35.082	\$48 811
	h. Disability Benefits	4 896	2 534	2 362
	0. Disability Benefit	4,020	2,554	1 830
	c. Survivors Deficit	4,039	2,200	1,059
	a. Deferred Retifements	603	208	205
	e. Refunds Due to Death of withdrawar	<u>003</u>	<u> </u>	£93 \$52,207
	f. lotal	\$93,431	\$40,124	\$55,507
	2. Defensed Batiment anta	0.20		0.20
	2. Deferred Retirements	928		920
	with Future Augmentation			
	2 Former Members Without	14		14
	J. Former Members without	14		14
	vested Rights			
	A Applyitants in MDDIE	72 007		72 007
	4. Almutants in Mr Kir	12,991		12,771
	5 Recipients Not in MPRIF	12 403		12 403
	5. Recipients Not in Mi Ru	12,405		12,405
	6 Total	\$179.773	\$40,124	\$139.649
	0. 100			
в	DETERMINATION OF UNFUNDED ACT	FUARIAL ACCE	RUED LIABILITY	(UAAL)
2.	1. AAL (A6)			\$139,649
	2 Current Assets (Table 1, E6)			97.692
	3 UAAL (B1-B2)			\$41,957
	5. 6/11/2 (D1 D2)			
С	DETERMINATION OF SUPPLEMENTAL	L CONTRIBUTI	ON RATE	
0.	1. Present Value of Future Payrolls Throug	h		\$399,862
	the Amortization Date of July 1, 2020	- -		,
	2. Supplemental Contribution Rate (B3/C1)		10.49%
		,		

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 1999

A.	UAAL AT BEGINNING OF YEAR	\$44,149
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	 Normal Cost and Expenses Contribution Interest on A, B1 and B2 	\$4,177 (9,120)
	4. Total (B1+B2+B3)	(\$1,400)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	\$42,749
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	 Salary Increases Investment Return MPRIF Mortality Mortality of Other Benefit Recipients Other Items 	(\$516) (379) (380) 246 174
	6. Total	(\$855)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	\$41,894
F.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	63
G.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	0
H.	UAAL AT END OF YEAR (E+F+G)	\$41,957

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1999

		Percent of	Dollar
		Payroll	Amount
A.	STATUTORY CONTRIBUTIONS - CHAPTER 490		
	1. Employee Contributions	8.00%	\$2,167
	2. Employer Contributions	20.50%	5,551
	3. Total	28.50%	\$7,718
	_		
B.	REQUIRED CONTRIBUTIONS - CHAPTER 356		
	1. Normal Cost		
	a. Retirement Benefits	14.12%	\$3,823
	b. Disability benefits	0.97%	263
	c. Survivors	0.89%	242
	d. Deferred Retirement Benefits	0.00%	0
	e. Refunds Due to Death or Withdrawal	0.13%	35
	f. Total	16.11%	\$4,363
	2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	10.49%	2,841
	3. Allowance for Expenses	0.15%	41
	4. Total =	26.75%	\$7,245
C.	CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	1.75%	\$473

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1999 is \$27,080.

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:	Pre-Retirement : 8.5% per annum Post-Retirement : 6.0% per annum
Salary Increases:	5% annually
Mortality:	Pre-Retirement: Male - 1983 GAM (Males -4) Female - 1983 GAM (Females -2) Post-Retirement:
	Male -1983 GAM (Males)Female -1983 GAM (Females)
	Post-Disability:Male -Combined Annuity MortalityFemale -Combined Annuity Mortality
Retirement Age:	Age-related table as follows:
	Ages: 62-64 10% 65-67 20 68-70 30 71+ 100
Separation:	None
Disability:	Rates adopted by MSRS based on actual experience, most recently adjusted in 1979, as shown in rate table.
Expenses:	Prior year administration expenses expressed as percentage of prior year payroll.
Return of Contributions:	N/A
Family Composition:	Marital status as indicated by data. Female is three years younger than male.
Social Security:	N/A

Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 6% accounted for by 6% post-retirement assumptions.
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method based on earnings and the date the employee entered the plan is applied to all plan benefits. 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 5.0% per annum.

Summary of Actuarial Assumptions and Methods

	Death		Withdrawal		<u>Disability</u>		Retirement	
Age	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
20	3	2	0	0	0	0	0	0
21	3	2	0	0	0	0	0	0
22	4	2	0	0	0	0	0	0
23	4	2	0	0	0	0	0	0
24	4	2	0	0	0	0	0	0
25	4	2	0	0	0	0	0	0
26	4	2	0	0	0	0	0	0
27	4	3	0	0	0	0	0	0
28	4	3	0	0	0	0	0	0
29	5	3	0	0	0	0	0	0
30	5	3	0	0	2	0	0	0
31	5	3	0	0	2	0	0	0
32	5	3	0.	0	2	0	0	0
33	6	4	0	0	2	0	0	0
34	6	4	0	0	2	0	0	0
35	6	4	0	0	2	1	0	0
36	7	4	0	0	2	1	0	0
37.	7	5	0	0	2	1	0	0
38	8	5	0	0	2	1	0	0
39	9	5	0	0	2	2	0	0
40	9	6	0	0	2	2	0	0
41	10	6	0	0	2	2	0	0
42	10	7	0	0	2	4	0	0
43	11	7	0	0	3	4	0	0
44	12	8	0	0	3	4	0	0
45	14	8	0	0	3	5	0	0
46	15	9	0	0	5	6	0	0
47	17	10	0	0	7	7	0	0
48	19	11	0	0	9	7	0	0
49	22	12	0	0	11	10	0	0

Separation Expressed as Number of Occurrences Per 10,000:

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Summary of Actuarial Assumptions and Methods

	Death		Wit	Withdrawal Disability		<u>ability</u>	<u>Retirement</u>	
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
50	25	14	0	0	14	10	0	0
51	28	15	0	0	16	12	0	0
52	31	16	0	0	20	14	0	0
53	35	18	0	0	24	16	0	0
54	39	19	0	0	28	20	0	0
55	43	21	0	0	34	24	0	0
56	48	23	0	0	40	30	0	0
57	52	25	0	0	46	36	0	0
58	57	28	0	0	56	44	0	0
59	61	31	0	0	66	52	0	0
60	66	34	0	0	76	62	0	0
61	71	38	0	0	90	74	0	0
62	77	42	0	0	110	88	1,000	1,000
63	84	47	0	0	136	104	1,000	1,000
64	92	52	0	0	174	122	1,000	1,000
65	101	58	0	0	0	0	2,000	2,000
66	111	64	0	0	0	0	2,000	2,000
67	124	71	0	0	0	0	2,000	2,000
68	139	78	0	0	0	0	3,000	3,000
69	156	87	0	0	0	0	3,000	3,000
70	176	97	0	0	0	0	3,000	3,000

Separation Expressed as Number of Occurrences Per 10,000:

Summary of Plan Provisions

GENERAL

Eligibility:	A judge or justice of any court who is not covered under the Social Security Act. If the Member was active prior to $1/1/74$, benefits may be computed according to provisions of the prior plan.
Contributions:	
Member:	8.15% of salary. Members who were active prior to 1/1/74 may contribute 4% to a special survivor retirement account.
Employer:	20.5% of salary.
Allowable Service:	Service as a judge. Half credit is received for service not compensated at an annual salary or for service while entitled to practice law. Credit may also be earned for uncredited judicial service if the appropriate employee contributions, with interest, are made.
Salary:	Salary set by law.
Average Salary:	Average of the five highest years of salary of the last 10 years prior to retirement.

RETIREMENT

Normal Retirement Benefit:

Eligibility:	Age 65 and five years of Allowable Service. Age 70.
Amount:	2.7% of Average Salary for each year of Allowable Service prior to 7/1/80 and 3.2% of Average Salary for each year of Allowable Service after 6/30/80. Maximum benefit of 70% of salary for the 12 months preceding retirement.

Early Retirement Benefit:

Eligibility:	Age 62 and five years of Allowable Service.
Amount:	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.5% for each month the Member is under age 65 at time of retirement.
Form of Payment:	Life annuity. Actuarial equivalent options are:
	 - 50% or 100% joint and survivor - 50% or 100% bounce back joint and survivor - 10 or 15 year certain and life
Benefit Increases:	Benefits may be increased each January 1 de- pending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF).

DISABILITY

Disability Benefit:	
Eligibility:	Permanent inability to perform the functions of judge.
Amount:	No benefit is paid by the Fund. Instead salary is continued for one year but not beyond age 70. Employee contributions continue and Allowable Service is earned.
Retirement After Disability:	

Eligibility:	Member is still disabled after salary payments cease after one year or at age 70, if earlier.
Amount:	Larger of 25% of Average Salary or the Normal Retirement Benefit, without reduction.
Benefit Increases:	Same as for retirement.

DEATH

Survivor's	Benefit:
------------	----------

Eligibility:	Active or disabled Member dies before retirement or a former Member eligible for a deferred annuity dies.
Amount:	Larger of 25% of Average Salary or 60% of Normal Retirement Benefit had the Member retired at date of death.
	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.
	Benefit paid to spouse for life. If no spouse, benefit is paid to surviving dependent children until child marries, dies, or attains age 18 (age 22 if full-time student).
Benefit Increases:	Same as for retirement.
Prior Survivors' Benefit:	
Eligibility:	Retired Member dies who did not elect an optional annuity and such Member retired prior to $1/1/74$ or was in office prior to $1/1/74$ and continued contributing 4% of pay to provide this post-retirement death benefit.
Amount:	50% of the retired Member's benefit continues to the surviving spouse if married three years. Benefit begins immediately unless spouse is not yet age 40 and continues to death.
	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.
Benefit Increases:	Adjusted by MSRS to provide same increase as MPRIF

Refund of Contributions:

Eligibility:	Member dies prior to retirement or former Member eligible for a deferred annuity dies and survivors' benefits are not payable.
Amount:	Member's contributions with 5% interest.

TERMINATION

Refund of Contributions:

Eligibility:	Termination of service as a judge.
Amount:	Member's contributions with 5% interest. A deferred annuity may be elected in lieu of a refund.
Deferred Benefit:	
Eligibility:	Five years of Allowable Service.
Amount:	Benefit computed under law in effect at termination. Amount is payable as a normal or early retirement annuity.
	If a Member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.

SIGNIFICANT CHANGES:

No significant changes were recognized for this valuation.

Summary of Plan Provisions

GENERAL

Eligibility:	A judge or justice of any court who is covered under the Social Security Act.
Contributions:	
Member:	8.00% of salary. (Amended 1998)
Employer:	20.5% of salary.
Allowable Service:	Service as a judge. Half credit is received for service not compensated at an annual salary or for service while entitled to practice law. Credit may also be earned for uncredited judicial service if the appropriate employee contributions, with interest, are made.
Salary:	Salary set by law.
Average Salary:	Average of the five highest years of salary of the last 10 years prior to retirement.

RETIREMENT

Normal Retirement Benefit:

Eligibility:	Age 65 and five years of Allowable Service. Age 70.
Amount:	2.7% of Average Salary for each year of Allowable Service prior to 7/1/80 and 3.2% of Average Salary for each year of Allowable Service after 6/30/80. Maximum benefit of 70% of salary for the 12 months preceding retirement.

Early Retirement Benefit:

Eligibility:	Age 62 and five years of Allowable Service.
Amount:	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.5% for each month the Member is under age 65 at time of retirement.

the

Form of Payment:	Life annuity:
	- 50% or 100% joint and survivor
	- 50% or 100% bounce back joint and survivor
	- 10 or 15 year certain and life
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:	Permanent inability to perform the functions of judge.
Amount:	No benefit is paid by the Fund. Instead salary is continued for one year but not beyond age 70. Employee contributions continue and Allowable Service is earned.

Retirement After Disability:

Eligibility:	Member is still disabled after salary payments cease after one year or at age 70, if earlier.
Amount:	Larger of 25% of Average Salary or the Normal Retirement Benefit, without reduction.
Benefit Increases:	Same as for retirement.
DEATH

S	urvi	vor's	Ben	efit:

	Eligibility:	Active or disabled Member dies before retirement or a former Member eligible for a deferred annuity dies.
	Amount:	Larger of 25% of Average Salary or 60% of Normal Retirement Benefit had the Member retired at date of death.
		If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.
		Benefit paid to spouse for life. If no spouse, benefit is paid to surviving dependent children until child marries, dies, or attains age 18 (age 22 if full-time student).
	Benefit Increases:	Same as for retirement.
Refun	d of Contributions:	
	Eligibility:	Member dies prior to retirement or former Member eligible for a deferred annuity dies and survivors' benefits are not payable.
	Amount:	Member's contributions with 5% interest.

TERMINATION

Refund of Contributions:

Eligibility:	Termination of service as a judge.	
Amount:	Member's contributions with 5% interest. may be elected in lieu of a refund.	A deferred annuity

Deferred Benefit:

Eligibility:	Five years of Allowable Service.
Amount:	Benefit computed under law in effect at termination. Amount is payable as a normal or early retirement annuity.
	If a Member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.

SIGNIFICANT CHANGES:

No significant changes were recognized for this valuation.

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TABLE 14

Judges Retirement Fund

SCHEDULE OF FUNDING PROGRESS (dollars in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (A)	Actuarial Accrued Liability (AAL) (B)	Unfunded AAL (UAAL) (B - A)	Funded Ratio (A)/(B)	Actual Covered Payroll (Previous FY) (C)	UAAL as % of Covered Payroll (B - A) / (C)
07/01/91	33,559	78,429	44,870	42.79%	18,410	243.73%
07/01/92	37,768	83,969	46,201	44.98%	22,765	202.95%
07/01/93	44,156	90,509	46,353	48.79%	22,084	209.89%
07/01/94	50,428	98,313	47,885	51.29%	22,264	215.08%
07/01/95	56,813	102,238	45,425	55.57%	22,877	198.56%
07/01/96	64,851	108,150	43,299	59.96%	22,421	193.12%
07/01/97	74,681	117,714	43,033	63.44%	22,909	187.84%
07/01/98	86,578	130,727	44,149	66.23%	24,965	176.84%
07/01/99	97,692	139,649	41,957	69.96%	32,940	127.37%

MILLIMAN & ROBERTSON, INC.

TABLE 15

Judges Retirement Fund

SCHEDULE OF EMPLOYER CONTRIBUTIONS (dollars in thousands)

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
						0.000/
1991	23.59%	18,410	799	3,544	0	0.00%
1992	25.10%	22,765	988	4,726	4,722	99.92%
1993	26.59%	22,084	1,409	4,463	4,845	108.56%
1994	26.29%	22,264	1,416	4,437	4,912	110.71%
1995	28.27%	22,877	1,455	5,012	5,162	102.99%
1996	27.32%	22,421	1,426	4,699	4,972	105.81%
1997	27.01%	22,909	1,457	4,731	6,632	140.18%
1998	27.60%	24,965	1,570	5,320	7,129	134.00%
1999	27.32%	32,940	2,069	6,930	7,051	101.75%

* Includes contributions from other sources (if applicable).

Judges Retirement Fund ACTUARIAL VALUATION REPORT

July 1, 1999

MILLIMAN & ROBERTSON, INC.



Internationally WOODROW MILLIMAN

Suite 400, 15800 Bluemound Road, Brookfield, Wisconsin 53005-6069 Telephone: 414/784-2250 Fax: 414/784-7287

December 3, 1999

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

RE: Judges 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, 1999.

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 Minnesota State Retirement System.

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.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.

Thomas K. Custis, F.S.A., M.A.A.A.

Thomas K. Custis, F.S.A., M.A.A.A. Consulting Actuary

allin V. Hojan

William V. Hogan, F.S.A., M.A.A.A. Consulting Actuary

TKC/WVH/bh

Albany, Atlanta, Boston, Chicago, Dallas, Denver, Hartford, Houston, Indianapolis, Irvine, Los Angeles, Milwaukee, Minneapolis, New York, Omaha, Philadelphia, Phoenix, Portland, ME, Portland, OR, St. Louis, Salt Lake City, San Diego, San Francisco, Seattle, Tampa, Washington, D.C., Bermuda, Tokyo

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Report Highlights (dollars in thousands)

		07/01/98 Valuation	07/01/99 Valuation
A.	CONTRIBUTIONS (Table 11)1. Statutory Contributions - Chapter 490 % of Payroll	28.28%	28.28%
	 Required Contributions - Chapter 356 % of Payroll 	27.32%	26.71%
	3. Sufficiency (Deficiency): (A.1 A.2.)	0.96%	1.57%
B.	FUNDING RATIOS 1. Accrued Benefit Funding Ratio		
	a. Current Assets (Table 1)	\$86,578	\$97,692
	b. Current Benefit Obligations (Table 8)	\$124,728	\$133,300
	c. Funding Ratio: (a/b)	69.41%	73.29%
	2 Accrued Liability Funding Ratio		
	a. Current Assets (Table 1)	\$86.578	\$97.692
	b. Actuarial Accrued Liability (Table 9)	\$130,727	\$139,587
	c. Funding Ratio: (a/b)	66.23%	69.99%
	3. Projected Benefit Funding Ratio (Table 8)		
	a. Current and Expected Future Assets	\$172,986	\$185,919
	b. Current and Expected Future Benefit Obligations	\$169,215	\$179,644
	c. Funding Ratio: (a/b)	102.23%	103.49%
C.	PLAN PARTICIPANTS 1. Active Members		
	a. Number (Table 3)	278	282
	b. Projected Annual Earnings	\$25,890	\$27,080
	c. Average Annual Earnings (Projected \$)	\$93,130 ₍	\$96,030
	d. Average Age	53.7	53.9
	e. Average Service	10.6	10.6
	2. Others	1.40	140
	a. Service Retirements (Table 4)	148	149
	D. SURVIVORS (1 able 3)	63 6	65 6
	d Deferred Retirements (Table 7)	0 7	11
	e Terminated Other Non-vested (Table 7)	2	1
	f. Total	246	250

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:

- 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 73.29%. The corresponding ratio for the prior year was 69.41%
- 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 1999 the ratio is 69.99%, which is an increase from the 1998 value of 66.23%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 103.49% verifies that the current statutory contributions are sufficient.

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 E1 to E6. 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.

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 as follows:

- 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

Disclosure of the Current Benefit Obligation amounts used to be required by Statement No. 5 of the Governmental Accounting Standards Board (GASB). However, Statement No. 5 has been superceded by Statement No. 25. Tables 14 and 15 of this report are included to fulfill the requirements of Statement No. 25.

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 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 5.00% 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.

Source 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 expectations. 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:

- Normal costs based on the Entry Age Normal Actuarial Cost Method.
- A Supplemental Contribution for amortizing any Unfunded Actuarial Accrued Liability.
- An Allowance for Expenses.

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 28.28% compared to the Required Contribution Rate of 26.71%.

Changes in Actuarial Assumptions

There were no changes in actuarial assumptions since the last valuation.

Changes in Plan Provisions

There were no significant changes in plan provisions since the last valuation.

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Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1999

		Market Value	Cost Value	
A.	ASSETS IN TRUST			
	1. Cash, Equivalents, Short-term Securities	\$2,855	\$2,855	
	2. Fixed Income	4,946	5,103	
	3. Equity	17,573	14,476	
	4. Real Estate	824	685	
	5. Equity in MPRIF	72,997	72,997	
	6. Other	0	0	
	Subtotal	\$99,195	\$96,116	
B.	ASSETS RECEIVABLE	605	605	
C.	LIABILITIES	(55)	(55)	
D.	NET ASSETS HELD IN TRUST FOR PENSION BENEFITS 1. MPRIF Reserves 2. Member Beserves	72,997	72,997	
	2. Other Non MDDIE Deserves	14 358	11 279	
	4. Total Assets Available for Benefits	\$99,745	\$96,666	
 E.	DETERMINATION OF ACTUARIAL VALUE OF ASSETS			
	1. Cost Value of Assets Available		\$96,666	
	for Benefits (D4)			
	2. Market Value (D4)	\$99,745		
	3. Cost Value (D4)	96,666		
	4. Market Over Cost: (E2-E3)	\$3,079		

6. Actuarial Value of Assets (E1+E5) (Same as "Current Assets")

5. One-third of Market Over Cost: (E4)/3

1,026

\$97,692

Statement of Change In Plan Net Assets (dollars in thousands)

YEAR ENDING JUNE 30, 1999

		Market Value	Cost Value
A.	ASSETS AVAILABLE AT BEGINNING OF PERIOD	\$88,275	\$85,730
B.	ADDITIONS		
	1. Member Contributions	\$2,069	\$2,069
	2. Employer Contributions	7,051	7,051
	3. Contributions From Other Sources	0	0
	4. MPRIF Income	10,236	10,236
	5. Net Investment Income		
	a. Interest and Dividends	2,034	2,034
	b. Net Realized Gain (Loss)	0	0
	c. Net Change in Unrealized Gain (Loss)	536	0
	d. Investment Expenses	(29)	(29)
	Net Subtotal	2,541	2,005
	6. Other	10	11
	7. Total Additions	\$21,907	\$21,373
C.	OPERATING EXPENSES		
	1. Service Retirements paid from MPRIF	\$9,996	\$9,996
	2. Service Retirements paid from plan assets	0	0
	2. Disability Benefits	0	0
	3. Survivor Benefits	0.	0
	4. Refunds	375	375
	6. Administrative Expenses	38	38
	7. Other	28	28
	8. Total Disbursements	\$10,437	\$10,437
D.	OTHER CHANGES IN RESERVES	0	0
E.	ASSETS AVAILABLE AT END OF PERIOD	\$99,745	\$96,666

ACTIVE MEMBERS AS OF JUNE 30, 1999

				Ye	ars of Servi	ice			
Age	<u><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	0	0	0	0	0	0	0	0	0
25-29	0	. 0	0	0	0	0	0	0	0
30-34	1	. 0	0	0	0	0	0	0	1
35-39	1	1	1	0	0	0	0	0	3
40-44	3	9	4	0	0	0	0	0	16
45-49	5	16	21	6	1	0	0	0	49
50-54	5	18	25	29	14	2	0	0	- 93
55-59	2	10	12	8	18	9	0	0	59
60-64	1	5	2	13	7	11	9	0	48
65+	0	0	4	5	2	0	2	0	13
ALL	18	59	69	61	42	22	11	0	282

AVERAGE ANNUAL EARNINGS

				Ye	ars of Servi	ice			
Age	<u><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	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0
30-34	93,253	0	0	0	0	0	0	0	93,253
35-39	91,827	92,544	92,544	0	0	0	0	0	92,305
40-44	85,285	92,544	78,629	0	0	0	0	0	87,704
45-49	86,838	93,195	94,137	93,550	92,544	0	0	0	92,980
50-54	86,208	93,047	87,556	93,121	92,608	95,564	0	0	91,214
55-59	82,657	93,148	94,465	93,153	93,809	93,215	0	0	93,273
60-64	1,200	94,960	56,271	93,612	92,544	94,612	92,544	0	90,145
65+	0	0	94,054	93,469	93,744	0	92,544	0	93,549
ALL	81,816	93,181	89,785	93,301	93,165	94,127	92,544	0	91,697

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

Age	<u><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
All	1,472	5,497	6,195	5,691	3,912	2,070	1,017	0	25,858

MILLIMAN & ROBERTSON, INC.

				Years F	Retired			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	2	3	1	0	0	0	0	6
65-69	4	12	3	0	0	0	0	19
70-74	4	20	17	6	0	0	0	. 47
75-79	0	0	29	12	2	0	0	43
80-84	0	0	0	12	4	0	0	16
85+	0	0	0	0	8	7	3	18
ALL	10	35	50	30	14	7	3	149

SERVICE RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

				Years I	Retired			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	51,822	67,037	46,370	0	0	0	0	58,521
65-69	49,047	51,596	35,068	0	0	0	0	48,450
70-74	36,179	41,359	54,517	42,175	0	0	0	45,782
75-79	0	0	55,831	49,604	27,200	0	0	52,762
80-84	0	0	0	52,495	67,717	0	0	56,301
85+	0	0	0	0	58,596	49,012	50,783	53,567
ALL	44,455	47,070	53,949	49,275	56,717	49,012	50,783	50,720

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

Age	<u> <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	444	1,647	2,697	1,478	794	343	152	7,557

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SURVIVORS AS OF JUNE 30, 1999

				Years Sin	ce Death			
Age	<u><1</u>	<u>1-4</u>	<u>5-9</u>	10-14	<u>15-19</u>	20-24	<u>25+</u>	ALL
<50	0	2	0	1	0	0	0	3
50-54	0	0	0	3	0	0	0	3
55-59	0	1	0	0	0	0	0	1
60-64	0	2	0	2	0	0	0	4
65-69	1	2	1	0	0	0	0	4
70-74	0	5	5	2	2	2	2	18
75-79	0	2	2	1	2	1	0	8
80-84	0	5	2	2	0	2	2	13
85+	2	1	5	0	1	5	15	29
ALL	3	20	15	11	5	10	19	83

AVERAGE ANNUAL BENEFIT

	Years Since Death								
Age	<u><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	0	29,895	0	34,747	0	0	0	31,512	
50-54	0	0	0	40,713	0	0	0	40,713	
55-59	0	29,639	0	0	0	0	0	29,639	
60-64	0	41,811	0	29,984	0	0	0	35,898	
65-69	8,884	15,883	41,231	0	0	0	0	20,470	
70-74	0	34,621	32,731	24,980	27,371	16,032	24,910	29,075	
75-79	0	36,409	34,737	52,184	38,802	17,798	0	36,235	
80-84	0	41,668	23,258	26,238	0	18,077	40,203	32,607	
85+	52,427	24,314	25,302	0	40,912	21,465	26,352	27,558	
ALL	37,913	34,170	29,826	33,770	34,652	19,334	27,658	30,218	

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS SINCE DEATH

								1 (Mar. 1997)
Age	<1	<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	113	683	447	371	173	193	525	2,508

				Years D	isabled			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	. 0
70-74	0	0	0	1	0	1	0	2
75-79	0	0	0	1	1	0	0	2
80-84	0	0	0	2	0	0	0	2
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	4	1	1	0	6

DISABILITY RETIREMENTS AS OF JUNE 30, 1999

AVERAGE ANNUAL BENEFIT

				Years D	lisabled			
Age	<u><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	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0
65-69	0	0	0	0	0	0	0	0
70-74	0	0	0	63,466	0	44,242	0	53,854
75-79	0	0	0	51,845	85,999	0	0	68,922
80-84	0	0	0	42,609	0	0	0	42,609
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	50,132	85,999	44,242	0	55,128

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED

Age	<u><1</u>	1-4	<u>5-9</u>	<u>10-14</u>	15-19	20-24	<u>25+</u>	ALL
All	0	0	0	200,528	85,999	44,242	0	330,768

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Reconciliation Of Members

			Terminated				
			Deferred	Other			
		Actives	Retirement	Non-Vested			
A.	ON JUNE 30, 1998	278	7	2			
B.	ADDITIONS	18	6	0			
C.	DELETIONS						
	1. Service Retirement	(8)	(1)	0			
	2. Disability	0	0	0			
	3. Death	0	0	0			
	4. Terminated - Deferred	(6)	0	0			
	5. Terminated - Refund	0	0	0			
	6. Terminated - Other Non-Vested	0	0	0			
	7. Returned as Active	0	0	0			
	8. Transferred (to)/from Other Fund	0	0	0			
D.	DATA ADJUSTMENTS	0	(1)	(1)			
	Vested	170					
	Non-Vested	112					
E.	TOTAL ON JUNE 30, 1999	282	11	1			

		Recipients			
		Retirement Annuitants	Disabled	Survivors	
A.	ON JUNE 30, 1998	148	6	83	
B.	ADDITIONS	9	0	3	
C.	DELETIONS	0	0	0	
	2. Death	. (7)	0	(2)	
	3. Annuity Expired	0 0	0) 0	
	4. Returned as Active	0	0	0	
D.	DATA ADJUSTMENTS	(1)	0	(1)	
E.	TOTAL ON JUNE 30, 1999	149	6	83	

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 1999

A.	CURRENT ASSETS (TABLE 1, E6)			\$97,692	
B.	EXPECTED FUTURE ASSETS 1. Present Value of Expected Future Statutory Supplemental Contributio	ns (See Table 11)		\$48,170	14. see
	2. Present Value of Future Normal Costs			40,057	40, 74 3 3 5 5 5
	5. Total Expected Future Assess				
C.	TOTAL CURRENT AND EXPECTED F	UTURE ASSETS		\$185,919	
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total	
	a Retirement Annuities		\$62,852	\$62,852	
	b Disability Benefits		2,634	2,634	
	c. Surviving Spouse		19,914	19,914	
	and Child Benefits				
	2. Deferred Retirements with Future Aug	mentation	928	928	
	3. Former Members without Vested Righ	ts	14	14	
	4. Active Members				
	a. Retirement Annuities	2,437	39,282	41,719	
	b. Disability Benefits	2,755	0	2,755	
	c. Survivor's Benefits	2,204	0	2,204	
	d. Deferred Retirements	0	0	200	
	e. Refund Liability Due	0	280	280	
	to Death or Withdrawal	····			
	5. Total Current Benefit Obligations	\$7,396	\$125,904	\$133,300	1995年6
E.	EXPECTED FUTURE BENEFIT OBLI	GATIONS		\$46,344	u a la c
F.	TOTAL CURRENT AND EXPECTED	FUTURE BENEFIT (OBLIGATIONS	\$179,644	t de la compañía de la
G	. CURRENT UNFUNDED ACTUARIAL	, LIABILITY (D5-A)	I	\$35,608	35,1.5
Н	. CURRENT AND FUTURE UNFUNDE	D ACTUARIAL LIA	BILITY (F-C)	(\$6,275)	(b) (°€¢)

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

(dollars in thousands)

JULY 1, 1999

		Actuarial	Actuarial		
		Present Value	Present Value	Actuarial	
		of Projected	of Future	Accrued	
		Benefits	Normal Costs	Liability	
Α.	DETERMINATION OF ACTUARIAL	(1)	(2)	(3)=(1)-(2)	
	ACCRUED LIABILITY (AAL)				
	1. Active Members				
	a. Retirement Annuities	\$83,893	\$35,082	\$48,811	
	b. Disability Benefits	4,896	2,534	2,362	
	c Survivor's Benefit	4,039	2,200	1,839	
	d Deferred Retirements	0	, 0	0	
	e Refunds Due to Death or Withdrawal	474 (25)	2 2 2 241	233	295
	f Total	\$93,302 03	\$40,057	\$53,245	1. 1. J. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
		(J)	115. CH		الم المحمد و المعالمين
	2 Deferred Retirements	928	nogram	928	
	With Future Augmentation				
	3. Former Members Without	14		14	
	Vested Rights				
	4. Annuitants in MPRIF	72,997		72,997	
		,			
	5. Recipients Not in MPRIF	12,403		12,403	
	• • • • • • • • • • • • • • • • • • •	172,772	Lto gul		
	6. Total	\$179,644	\$40,057	\$139,587	1. 197 1. 199 2
B.	DETERMINATION OF UNFUNDED AC	TUARIAL ACCR	UED LIABILITY	(UAAL)	
	1. AAL (A6)			\$139,587	124,600
	2. Current Assets (Table 1, E6)			97,692	
	3. UAAL (B1-B2)			\$41,895	- 202
	、 <i>,</i> , ,				-
C.	DETERMINATION OF SUPPLEMENTA	L CONTRIBUTI	ON RATE		
	1. Present Value of Future Payrolls Throug	gh		\$399,862	
	the Amortization Date of July 1, 2020				
	2. Supplemental Contribution Rate (B3/C1	.)		10.48%	

Changes In Unfunded Actuarial Accrued Liability (UAAL) (dollars in thousands)

YEAR ENDING JUNE 30, 1999

A.	UAAL AT BEGINNING OF YEAR	\$44,149	
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING		
	 Normal Cost and Expenses Contribution Interest on A, B1 and B2 	\$4,177 (9,120) 3,543	
	4. Total (B1+B2+B3)	(\$1,400)	
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	\$42,749	
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED		
	 Salary Increases Investment Return MPRIF Mortality Mortality of Other Benefit Recipients Other Items 	(\$516) (379) (380) 246 175	, č .
	6. Total	(\$854)	
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	\$41,895	
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)	\$41,895	$\mathcal{V}(\mathcal{A})$

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Judges Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1999

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		Percent of Payroll	Dollar Amount	
Α.	STATUTORY CONTRIBUTIONS - CHAPTER 490			
	 Employee Contributions Employer Contributions 	6.28% 22.00%	\$1,700 5,958	
	3. Total	28.28%	\$7,658	~ ~ <
		78.85		· , · · (,
B.	REQUIRED CONTRIBUTIONS - CHAPTER 356			
	1. Normal Cost			
	a. Retirement Benefits	14.12%	\$3,823	
	b. Disability benefits	0.97%	263	
	c. Survivors	0.89%	242	
	d. Deferred Retirement Benefits	0.00%	0	
	e. Refunds Due to Death or Withdrawal	0.10%	27	55
	f. Total	16.08%	\$4,355	
	2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	10.48%	2,838	
	3. Allowance for Expenses	0.15%	41	• .
	4. Total	26.71%	\$7,234	
C.	CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	1.57%	\$424	

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1999 is \$27,080.

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:	Pre-Retirement: Post-Retirement	8.5% per annum : 6.0% per annum
Salary Increases:	5% annually	
Mortality:	Pre-Retirement : Male -	1983 GAM (Males -4)
	Female -	1983 GAM (Females -2)
	Post-Retirement	:
	Male -	1983 GAM (Males)
	Female -	1983 GAM (Females)
	Post-Disability:	
	Male -	Combined Annuity Mortality
	Female -	Combined Annuity Mortality
<i>Retirement Age</i> :	Age-related table	as follows:
	Ages: 62-6	54 10%
	68-7	70 30
	71-	+ 100
Separation:	None	
Disability:	Rates adopted by recently adjusted	MSRS based on actual experience, most in 1979, as shown in rate table.
Expenses:	Prior year admini prior year payroll	stration expenses expressed as percentage of .
Return of Contributions:	N/A	
Family Composition:	Marital status as i younger than mal	indicated by data. Female is three years e.
Social Security:	N/A	

Benefit Increases After Retirement:

Actuarial Cost Method:

Payment of earnings on retired reserves in excess of 6% accounted for by 6% post-retirement assumptions.

Entry Age Normal Actuarial Cost Method based on earnings and the date the employee entered the plan is applied to all plan benefits. Under this method, Actuarial Gains (Losses) reduce (increase) the Unfunded Actuarial Accrued Liability.

Asset Valuation Method:

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 5.0% per annum.

Summary of Actuarial Assumptions and Methods

	Death		<u>Withdrawal</u>		Disability		<u>Retirement</u>	
Age	Male	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
20	3	2	0	0	0	0	0	0
21	3	2	0	0	0	0	0	0
22	4	2	0	0	0	· 0	0	0
23	4	2	0	0	0	0	0	0
24	4	2	0	0	0	0	0	0
25	4	2	0	0	0	0	0	0
26	4	2	0	0	0	0	0	0
27	4	3	0	0	0	0	0	0
28	4	3	0	0	0	0	0	0
29	5	3	0	0	0	0	0	0
30	5	. 3	0	0	2	0	0	0
31	5	3	0	0	2	0	0	0
32	5	3	0	0	2	0	0	0
33	6	4	0	0	2	0	0	0
34	6	4	0	0	2	0	0	0
35	6	4	0	0	2	1	0	0
36	7	4	0	0	2	1	0	0
37	7	5	0	0	2	1	0	0
38	8	5	0	0	2	1	0	0
39	9	5	0	0	2	2	0	0
40	9	6	0	0	2	2	0	0
41	10	6	0	0	2	2	0	0
42	10	7	0	0	2	4	0	0
43	11	7	0	0	3	4	0	0
44	12	8	0	0	3	4	0	0
45	14	8	0	0	3	5	0	0
46	15	9	0	0	5	6	0	0
47	17	10	0	0	7	7	0	0
48	19	11	0	0	9	7	0	0
49	22	12	0	0	11	10	0	0

Separation Expressed as Number of Occurrences Per 10,000:

Summary of Actuarial Assumptions and Methods

	Death		<u>Withdrawal</u>		<u>Disability</u>		<u>Retirement</u>	
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
50	25	14	0	0	14	10	0	0
51	28	15	0	0	16	12	0	0
52	31	16	0	0	20	14	0	0
53	35	18	0	0	24	16	0	0
54	39	19	0	0	28	20	0	0
55	43	21	0	0	34	24	0	0
56	48	23	0	0	40	30	0	0
57	52	25	0	0	46	36	0	0
58	57	28	0	0	56	44	0	0
59	61	31	0	0	66	52	0	0
60	66	. 34	0	0	76	62	0	0
61	71	38	0	0	90	74	0	0
62	77	42	0	0	110	88	1,000	1,000
63	84	47	0	0	136	104	1,000	1,000
64	92	52	0	0	174	122	1,000	1,000
65	101	58	0	0	0	0	2,000	2,000
66	111	64	0	0	0	0	2,000	2,000
67	124	71	0	. 0	0	0	2,000	2,000
68	139	78	0	0	0	0	3,000	3,000
69	156	87	0	0	0	0	3,000	3,000
70	176	97	0	0	0	0	3,000	3,000

Separation Expressed as Number of Occurrences Per 10,000:

Summary of Plan Provisions

GENERAL

Eligibility:	A judge or justice of any court who is not covered under the Social Security Act. If the Member was active prior to $1/1/74$, benefits may be computed according to provisions of the prior plan.
Contributions:	
Member:	8.15% of salary. Members who were active prior to 1/1/74 may contribute 4% to a special survivor retirement account.
Employer:	22% of salary.
Allowable Service:	Service as a judge. Half credit is received for service not compensated at an annual salary or for service while entitled to practice law. Credit may also be earned for uncredited judicial service if the appropriate employee contributions, with interest, are made.
Salary:	Salary set by law.
Average Salary:	Average of the five highest years of salary of the last 10 years prior to retirement.

RETIREMENT

Normal Retirement Benefit:

Eligibility:	Age 65 and five years of Allowable Service. Age 70.
Amount:	2.7% of Average Salary for each year of Allowable Service prior to 7/1/80 and 3.2% of Average Salary for each year of Allowable Service after 6/30/80. Maximum benefit of 70% of salary for the 12 months preceding retirement.

Early Retirement Benefit:

Eligibility:	Age 62 and five years of Allowable Service.
Amount:	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.5% for each month the Member is under age 65 at time of retirement.
Form of Payment:	Life annuity. Actuarial equivalent options are:
	- 50% or 100% joint and survivor
	- 50% or 100% bounce back joint and survivor
	- 10 or 15 year certain and life
Benefit Increases:	Benefits may be increased each January 1 de-
-	pending on the investment performance of the Minnesota Post
	Retirement Investment Fund (MPRIF).

DISABILITY .

Disability Benefit:	
Eligibility:	Permanent inability to perform the functions of judge.
Amount:	No benefit is paid by the Fund. Instead salary is continued for one year but not beyond age 70. Employee contributions continue and Allowable Service is earned.
Retirement After Disability:	
Eligibility:	Member is still disabled after salary payments cease after one year or at age 70, if earlier.
Amount:	Larger of 25% of Average Salary or the Normal Retirement Benefit, without reduction.
Benefit Increases:	Same as for retirement.

DEATH

Survivor's	Benefit:
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Eligibility:	Active or disabled Member dies before retirement or a former Member eligible for a deferred annuity dies.			
Amount:	Larger of 25% of Average Salary or 60% of Normal Retirement Benefit had the Member retired at date of death.			
	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.			
	Benefit paid to spouse for life. If no spouse, benefit is paid to surviving dependent children until child marries, dies, or attains age 18 (age 22 if full-time student).			
Benefit Increases:	Same as for retirement.			
Prior Survivors' Benefit:				
Eligibility:	Retired Member dies who did not elect an optional annuity and such Member retired prior to $1/1/74$ or was in office prior to $1/1/74$ and continued contributing 4% of pay to provide this post-retirement death benefit.			
Amount:	50% of the retired Member's benefit continues to the surviving spouse if married three years. Benefit begins immediately unless spouse is not yet age 40 and continues to death.			
	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.			
Benefit Increases:	Adjusted by MSRS to provide same increase as MPRIF.			

Refund of Contributions:

Eligibility:	Member dies prior to retirement or former Member eligible for a deferred annuity dies and survivors' benefits are not payable.
Amount:	Member's contributions with 5% interest.

TERMINATION

Refund of Contributions:

Eligibility:	Termination of service as a judge.				
Amount:	Member's contributions with 5% interest. A deferred annuity may be elected in lieu of a refund.				
Deferred Benefit:					
Eligibility:	Five years of Allowable Service.				
Amount:	Benefit computed under law in effect at termination. Amount is payable as a normal or early retirement annuity.				
	If a Member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.				

SIGNIFICANT CHANGES:

No significant changes were recognized for this valuation.

Judges Retirement Fund Summary of Plan Provisions

GENERAL A judge or justice of any court who is covered under the Social Eligibility: Security Act. Contributions: Member: 6.27% of salary. (Amended 1992) 22% of salary. Employer: Allowable Service: Service as a judge. Half credit is received for service not compensated at an annual salary or for service while entitled to practice law. Credit may also be earned for uncredited judicial service if the appropriate employee contributions, with interest, are made. Salary: Salary set by law. Average of the five highest years of salary of the last 10 years Average Salary: prior to retirement.

RETIREMENT

Normal Retirement Benefit:

Eligibility:	Age 65 and five years of Allowable Service. Age 70.
Amount:	2.7% of Average Salary for each year of Allowable Service prior to 7/1/80 and 3.2% of Average Salary for each year of Allowable Service after 6/30/80. Maximum benefit of 70% of salary for the 12 months preceding retirement.

Early Retirement Benefit:

Eligibility:	Age 62 and five years of Allowable Service.
Amount:	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.5% for each month the Member is under age 65 at time of retirement.

Form of Payment:	Life annuity:			
	 - 50% or 100% joint and survivor - 50% or 100% bounce back joint and survivor - 10 or 15 year certain and life 			
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:	Permanent inability to perform the functions of judge.
Amount:	No benefit is paid by the Fund. Instead salary is continued for one year but not beyond age 70. Employee contributions
*	continue and Allowable Service is earned.

Retirement After Disability:

Eligibility:	Member is still disabled after salary payments cease after one year or at age 70, if earlier.			
Amount:	Larger of 25% of Average Salary or the Normal Retirement Benefit, without reduction.			
Benefit Increases:	Same as for retirement.			

DEATH

Survivor's Benefit:	
Eligibility:	Active or disabled Member dies before retirement or a former Member eligible for a deferred annuity dies.
Amount:	Larger of 25% of Average Salary or 60% of Normal Retirement Benefit had the Member retired at date of death.
	If a Member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.
	Benefit paid to spouse for life. If no spouse, benefit is paid to surviving dependent children until child marries, dies, or attains age 18 (age 22 if full-time student).
Benefit Increases:	Same as for retirement.
Refund of Contributions:	
Eligibility:	Member dies prior to retirement or former Member eligible for a deferred annuity dies and survivors' benefits are not payable.
Amount:	Member's contributions with 5% interest.

TERMINATION

Refund of Contributions:

Eligibility:	Termination of service as a judge.	
Amount:	Member's contributions with 5% interest. may be elected in lieu of a refund.	A deferred annuity

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TABLE 13 COORDINATED (Continued)

Deferred Benefit:

Eligibility: Five years of Allowable Service.

Benefit computed under law in effect at termination. Amount is payable as a normal or early retirement annuity.

If a Member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5% to 6%.

SIGNIFICANT CHANGES:

Amount:

No significant changes were recognized for this valuation.

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SCHEDULE OF FUNDING PROGRESS (dollars in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (A)	Actuarial Accrued Liability (AAL) (B)	Unfunded AAL (UAAL) (B - A)	Funded Ratio (A)/(B)	Actual Covered Payroll (Previous FY) (C)	UAAL as % of Covered Payroll (B - A) / (C)
07/01/91	33,559	78,429	44,870	42.79%	18,410	243.73%
07/01/92	37,768	83,969	46,201	44.98%	22,765	202.95%
07/01/93	44,156	90,509	46,353	48.79%	22,084	209.89%
07/01/94	50,428	98,313	47,885	51.29%	22,264	215.08%
07/01/95	56,813	102,238	45,425	55.57%	22,877	198.56%
07/01/96	64,851	108,150	43,299	59.96%	22,421	193.12%
07/01/97	74,681	117,714	43,033	63.44%	22,909	187.84%
07/01/98	86.578	130,727	44,149	66.23%	24,965	176.84%
07/01/99	97,692	139,587	41,895	69.99%	32,940	127.19%
L	* *	132,000				12772

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TABLE 14
TABLE 15

Judges Retirement Fund

SCHEDULE OF EMPLOYER CONTRIBUTIONS (dollars in thousands)

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
1001	22.500/	19 /10	700	2 5 4 4	0	0.00%
1991	23.39%	18,410	/99	5,544	0	0.00%
1992	25.10%	22,765	988	4,726	4,722	99.92%
1993	26.59%	22,084	1,409	4,463	4,845	108.56%
1994	26.29%	22,264	1,416	4,437	4,912	110.71%
1995	28.27%	22,877	1,455	5,012	5,162	102.99%
1996	27.32%	22,421	1,426	4,699	4,972	105.81%
1997	27.01%	22,909	1,457	4,731	6,632	140.18%
1998	27.60%	24,965	1,570	5,320	7,129	134.00%
1999	27.32%	32,940	2,069	6,930	7,051	101.75%

* Includes contributions from other sources (if applicable).

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