State Employees Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 1997

FILE COPY

MILLIMAN & ROBERTSON, INC.

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December 3, 1997

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, 1997.

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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Thomas K. Custis, F.S.A., M.A.A.A.
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State Employees Retirement Fund

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State Employees Retirement Fund

Report Highlights

(dollars in thousands)

	07/01/96 Valuation	07/01/97 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 352 % of Payroll	8.27%	8.00%
2. Required Contributions - Chapter 356 % of Payroll	7.21%	7.61%
3. Sufficiency (Deficiency): (A.1. - A.2.)	1.06%	0.39%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$3,975,832	$4,664,519
b. Current Benefit Obligations (Table 8)	$3,612,360	$4,079,340
c. Funding Ratio: (a/b)	110.06%	114.34%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$3,975,832	$4,664,519
b. Actuarial Accrued Liability (Table 9)	$4,087,273	$4,519,542
c. Funding Ratio: (a/b)	97.27%	103.21%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$5,274,235	$5,745,812
b. Current and Expected Future Benefit Obligations	$4,992,669	$5,502,019
c. Funding Ratio: (a/b)	105.64%	104.43%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	49,816	46,289
b. Projected Annual Earnings	$1,643,049	$1,612,662
c. Average Annual Earnings (Actual $)	$32,982	$34,839
d. Average Age	43.0	43.6
e. Average Service	11.4	11.7
2. Others		
a. Service Retirements (Table 4)	14,441	14,718
b. Survivors (Table 5)	1,451	1,574
c. Disability Retirements (Table 6)	857	905
d. Deferred Retirements (Table 7)	6,118	9,775
e. Terminated Other Non-vested (Table 7)	5,744	6,447
f. Total	28,611	33,419

State Employees 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 114.34%. The corresponding ratio for the prior year was 110.06%.

- 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 1997 the ratio is 103.21%, which is an increase from the 1996 value of 97.27%.

- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 104.43% 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 have been added to fulfill the new requirements of Statement No. 25. For this transition year only, disclosure in accordance with Statement No. 5 is shown below as of JULY 1, 1997:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	$1,895,639,000
Current Employees	
Accumulated employee contributions including allocated investment income	$888,385,000
Employer-financed vested	1,154,233,000
Employer-financed nonvested	141,083,000
Total Pension Benefit Obligation	$4,079,340,000
Net Assets Available for Benefits at Cost	$4,564,401,000
Total Benefit Obligation less Assets	($485,061,000)
Funded Ratio	111.89%

Actuarial Cost Method (Table 9)

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

A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) illustrates the two techniques for allocating liabilities of active Members to past and future. As noted in the prior section, the balance sheet allocates benefits and the corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll. Both approaches, however, calculate the value of all future benefits the same way (see line F of Table 8 and line A6, column 1, of Table 9).

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

Sources of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

- 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 7.61%.

Changes in Actuarial Assumptions

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

Changes in Plan Provisions

This valuation reflects the new plan provisions which became effective July 1, 1997. Substantive provisions of that legislation included:

1. Decrease in contribution rates for both Member and Employer.
2. Increase in the benefit rate factor by 0.20%.
3. Normal Retirement Age capped at 66.
4. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings with corresponding benefit increases for Members who do not receive the new benefit rates in (2.)

State Employees Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1997

	Market Value	Cost Value
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-term Securities	$27,850	$27,850
2. Fixed Income	732,839	726,833
3. Equity	2,412,395	2,112,106
4. Real Estate	112,232	118,173
5. Equity in MPRIF	1,583,803	1,583,803
6. Other	155	155
Subtotal	$4,869,274	$4,568,920
B. ASSETS RECEIVABLE	7,823	7,823
C. LIABILITIES	(12,342)	(12,342)
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	1,583,803	1,583,803
2. Member Reserves	621,933	621,933
3. Other Non-MPRIF Reserves	2,659,019	2,358,665
4. Total Assets Available for Benefits	$4,864,755	$4,564,401

E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS

1. Cost Value of Assets Available for Benefits (D4)		$4,564,401
2. Market Value (D4)	$4,864,755	
3. Cost Value (D4)	4,564,401	
4. Market Over Cost: (E2-E3)	$300,354	
5. One-third of Market Over Cost: (E4)/3		100,118
6. Actuarial Value of Assets (E1+E5) (Same as "Current Assets")		$4,664,519

State Employees Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

	Market Value	Cost Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$4,135,413	$3,896,040
B. ADDITIONS		
1. Member Contributions	$63,848	$63,848
2. Employer Contributions	66,568	66,568
3. Contributions From Other Sources	0	0
4. MPRIF Income	182,613	182,613
5. Net Investment Income		
a. Interest and Dividends	293,122	293,122
b. Net Realized Gain (Loss)	236,811	236,811
c. Net Change in Unrealized Gain (Loss)	60,980	0
d. Investment Expenses	(4,398)	(4,398)
Net Subtotal	586,515	525,535
6. Other	2,455	2,455
7. Total Additions	$901,999	$841,018
C. OPERATING EXPENSES		
1. Service Retirements paid from MPRIF	$150,676	$150,676
2. Service Retirements paid from plan assets	0	0
2. Disability Benefits	0	0
3. Survivor Benefits	0	0
4. Refunds	14,649	14,649
6. Administrative Expenses	2,172	2,172
7. Other	5,160	5,160
8. Total Disbursements	$172,657	$172,657
D. OTHER CHANGES IN RESERVES	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	$4,864,755	$4,564,401

STATE EMPLOYEES RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1997

Years of Service

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	976	280	3	0	0	0	0	0	1,259
25-29	1,368	1,540	255	21	0	0	0	0	3,184
30-34	923	1,695	1,478	498	34	0	0	0	4,628
35-39	869	1,504	1,868	1,575	921	36	0	0	6,773
40-44	750	1,295	1,963	1,569	1,810	966	60	0	8,413
45-49	537	1,164	1,642	1,298	1,591	1,815	756	31	8,834
50-54	340	602	1,042	881	1,017	944	1,093	475	6,394
55-59	163	373	594	516	597	609	553	743	4,148
60-64	75	177	267	285	329	316	241	358	2,048
65+	33	100	99	94	103	63	43	73	608
ALL	6,034	8,730	9,211	6,737	6,402	4,749	2,746	1,680	46,289

AVERAGE ANNUAL EARNINGS

Years of Service

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	17,493	18,123	25,036	0	0	0	0	0	17,651
25-29	20,130	24,458	28,294	22,578	0	0	0	0	22,893
30-34	23,263	27,328	31,162	31,177	28,103	0	0	0	28,162
35-39	23,112	29,009	32,975	34,521	32,701	33,647	0	0	31,155
40-44	25,351	28,301	33,961	35,951	36,815	35,476	34,489	0	33,485
45-49	26,566	29,897	35,232	35,871	38,757	40,570	38,678	37,016	36,129
50-54	22,556	30,280	34,798	35,634	38,485	41,940	43,851	43,165	37,647
55-59	23,185	29,042	33,531	34,582	36,012	40,099	41,462	45,636	37,399
60-64	18,870	24,530	33,160	35,146	35,760	37,452	40,364	45,973	36,335
65+	10,039	13,569	29,217	27,884	33,230	37,268	36,469	42,687	29,041
ALL	21,982	27,365	33,371	34,914	36,738	39,442	41,320	44,722	32,950

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

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
All	132	238	307	235	235	187	113	75	1,525

STATE EMPLOYEES RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1997

	YEARS RETIRED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	9	5	1	0	0	0	0	15
55-59	214	309	6	0	0	0	0	529
60-64	372	913	537	1	0	0	0	1,823
65-69	216	1,358	1,316	317	0	0	0	3,207
70-74	33	340	1,664	1,172	41	0	0	3,250
75-79	5	61	269	1,490	747	10	0	2,582
80-84	2	7	16	242	1,269	339	7	1,882
85+	0	0	0	10	59	944	417	1,430
ALL	851	2,993	3,809	3,232	2,116	1,293	424	14,718

AVERAGE ANNUAL BENEFIT

	YEARS RETIRED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	9,523	9,249	8,221	0	0	0	0	9,345
55-59	8,701	8,851	9,245	0	0	0	0	8,795
60-64	9,112	10,166	12,510	8,884	0	0	0	10,641
65-69	9,178	9,630	11,518	14,612	0	0	0	10,867
70-74	8,634	10,732	9,391	12,210	9,774	0	0	10,545
75-79	5,681	9,263	9,601	9,022	11,207	6,915	0	9,706
80-84	6,290	10,916	8,563	7,980	8,346	8,169	5,908	8,267
85+	0	0	0	8,147	8,471	7,183	5,654	6,797
ALL	8,984	9,833	10,576	10,646	9,387	7,439	5,658	9,760

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	7,645	29,430	40,283	34,407	19,862	9,618	2,398	143,647

TABLE 5

STATE EMPLOYEES RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1997

YEARS DEATH

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	21	53	10	6	0	1	0	91
50-54	15	26	14	6	1	0	0	62
55-59	18	55	27	6	0	0	1	107
60-64	23	54	44	18	2	0	0	141
65-69	26	67	87	31	12	0	2	225
70-74	24	81	80	53	41	8	2	289
75-79	22	83	83	34	58	13	4	297
80-84	8	48	55	9	36	41	9	206
85+	11	16	23	2	8	42	54	156
ALL	168	483	423	165	158	105	72	1,574

AVERAGE ANNUAL BENEFIT

YEARS DEATH

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	9,605	4,664	6,343	4,391	0	580	0	5,926
50-54	7,233	8,374	5,301	6,546	4,402	0	0	7,163
55-59	9,330	7,958	9,035	8,462	0	0	4,788	8,459
60-64	9,931	8,981	8,648	6,469	6,926	0	0	8,682
65-69	11,475	8,248	9,879	7,156	7,661	0	4,510	9,037
70-74	10,319	10,332	9,003	9,802	9,376	5,580	2,398	9,544
75-79	9,702	9,102	8,313	9,015	8,028	5,820	7,193	8,537
80-84	7,119	7,138	7,388	8,966	9,119	7,636	4,580	7,617
85+	9,123	8,469	5,515	4,782	4,599	8,473	4,766	6,553
ALL	9,663	8,304	8,428	8,309	8,388	7,522	4,805	8,279

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS DEATH

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	1,623	4,010	3,565	1,370	1,325	789	345	13,031

STATE EMPLOYEES RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1997

YEARS DISABLED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	36	63	29	4	0	0	0	132
50-54	21	27	32	5	3	0	0	88
55-59	25	68	29	8	1	2	0	133
60-64	17	55	46	9	6	1	0	134
65-69	3	29	62	19	10	1	0	124
70-74	0	0	21	39	29	16	4	109
75-79	0	0	0	14	65	16	4	99
80-84	0	0	0	0	13	38	7	58
85+	0	0	0	0	1	9	18	28
ALL	102	242	219	98	128	83	33	905

AVERAGE ANNUAL BENEFIT

YEARS DISABLED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	6,059	6,330	5,228	4,891	0	0	0	5,970
50-54	7,538	7,509	7,381	5,443	7,217	0	0	7,342
55-59	10,298	8,446	7,339	6,268	6,582	4,589	0	8,350
60-64	7,638	7,963	8,831	6,923	5,629	2,259	0	8,003
65-69	8,708	6,863	6,927	6,463	7,920	3,444	0	6,936
70-74	0	0	6,310	5,744	8,437	5,237	5,691	6,493
75-79	0	0	0	6,251	7,613	4,895	4,263	6,846
80-84	0	0	0	0	5,053	6,523	4,929	6,001
85+	0	0	0	0	4,723	4,931	4,819	4,852
ALL	7,744	7,491	7,164	6,057	7,431	5,654	4,881	7,013

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS DISABLED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	789	1,812	1,568	593	951	469	161	6,346

State Employees Retirement Fund

Reconciliation Of Members

		Terminated	
	Actives	Deferred Retirement	Other Non-Vested
A. ON JUNE 30, 1996	49,816	6,118	5,744
B. ADDITIONS	4,534	4,147	2,041
C. DELETIONS			
1. Service Retirement	(681)	(179)	(3)
2. Disability	(83)	(19)	0
3. Death	(65)	(2)	(1)
4. Terminated - Deferred	(3,941)	52	(52)
5. Terminated - Refund	(2,112)	(192)	(521)
6. Terminated - Other Non-Vested	(1,748)	(2)	0
7. Returned as Active	311	(152)	(159)
8. Transferred to Other Fund	(12)	0	(600)
D. DATA ADJUSTMENTS	270	4	(2)
Vested	36,372		
Non-Vested	9,917		
E. TOTAL ON JUNE 30, 1997	46,289	9,775	6,447

	Recipients		
	Retirement Annuitants	Disabled	Survivors
A. ON JUNE 30, 1996	14,441	857	1,451
B. ADDITIONS	820	114	176
C. DELETIONS			
1. Service Retirement	0	0	0
2. Death	(551)	(62)	(43)
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	0
D. DATA ADJUSTMENTS	8	(4)	(10)
E. TOTAL ON JUNE 30, 1997	14,718	905	1,574

State Employees Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 1997

		Non-Vested	Vested	Total
A.	CURRENT ASSETS (TABLE 1, E6)			$4,664,519
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			$98,816
	2. Present Value of Future Normal Costs			982,477
	3. Total Expected Future Assets			$1,081,293
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$5,745,812
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	1. Benefit Recipients			
	a. Retirement Annuities		$1,403,175	$1,403,175
	b. Disability Benefits		58,632	58,632
	c. Surviving Spouse and Child Benefits		125,171	125,171
	2. Deferred Retirements with Future Augmentation		304,641	304,641
	3. Former Members without Vested Rights		4,020	4,020
	4. Active Members			
	a. Retirement Annuities	11,431	1,758,370	1,769,801
	b. Disability Benefits	74,038	0	74,038
	c. Survivor's Benefits	50,494	0	50,494
	d. Deferred Retirements	5,120	258,504	263,624
	e. Refund Liability Due to Death or Withdrawal	0	25,744	25,744
	5. Total Current Benefit Obligations	$141,083	$3,938,257	$4,079,340
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			$1,422,679
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$5,502,019
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			($585,179)
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			($243,793)

State Employees Retirement Fund

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

(dollars in thousands)

JULY 1, 1997

	Actuarial Present Value of Projected Benefits (1)	Actuarial Present Value of Future Normal Costs (2)	Actuarial Accrued Liability (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	$2,957,225	$590,559	$2,366,666
b. Disability Benefits	129,373	40,302	89,071
c. Survivor's Benefit	83,126	25,829	57,297
d. Deferred Retirements	391,638	167,088	224,550
e. Refunds Due to Death or Withdrawal	45,019	158,699	(113,680)
f. Total	$3,606,381	$982,477	$2,623,904
2. Deferred Retirements With Future Augmentation	304,641		304,641
3. Former Members Without Vested Rights	4,020		4,020
4. Annuitants in MPRIF	1,583,803		1,583,803
5. Recipients Not in MPRIF	3,174		3,174
6. Total	$5,502,019	$982,477	$4,519,542

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$4,519,542
2. Current Assets (Table 1, E6)	4,664,519
3. UAAL (B1-B2)	($144,977)
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020	$25,337,434
2. Supplemental Contribution Rate (B3/C1)	0.00%

State Employees Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

A.	UAAL AT BEGINNING OF YEAR	$111,441
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	1. Normal Cost and Expenses	$111,452
	2. Contribution	(130,415)
	3. Interest on A, B1 and B2	8,667
	4. Total (B1+B2+B3)	($10,296)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	$101,145
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	1. Salary Increases	($12,704)
	2. Investment Return	(329,149)
	3. MPRIF Mortality	8,283
	4. Mortality of Other Benefit Recipients	(158)
	5. Other Items	(38,944)
	6. Total	($372,672)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	($271,527)
F.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	126,550
G.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	0
H.	UAAL AT END OF YEAR (E+F+G)	($144,977)

State Employees Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1997

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 352		
1. Employee Contributions	4.00%	$64,506
2. Employer Contributions	4.00%	64,506
3. Total	8.00%	$129,012
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	4.46%	$71,902
b. Disability benefits	0.29%	4,688
c. Survivors	0.19%	3,002
d. Deferred Retirement Benefits	1.21%	19,585
e. Refunds Due to Death or Withdrawal	1.33%	21,412
f. Total	7.48%	$120,589
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	0.00%	0
3. Allowance for Expenses	0.13%	2,096
4. Total	7.61%	$122,685
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	0.39%	$6,327

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1997 is $1,612,662.

State Employees Retirement Fund

Summary of Actuarial Assumptions and Methods

Interest:	**Pre-Retirement**: 8.5% per annum **Post-Retirement**: 6.0% per annum; 5.0% in prior valuation
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 Group Annuity Mortality Table for males setback four years. Female - 1983 Group Annuity Mortality Table for females set back two years. **Post-Retirement**: Male - 1983 Group Annuity Mortality Table for males. Female - 1983 Group Annuity Mortality Table for females. **Post-Disability**: Male - Combined Annuity Mortality Table Female - Combined Annuity Mortality Table
Retirement Age:	Graded rates beginning at age 58 as shown in rate table. Members who have attained the highest assumed retirement age will retire in one year. In addition, 25% of Members are assumed to retire each year that they are eligible for the Rule of 90.
Separation:	Graded rates based on actual experience developed by the June 30, 1971 experience analysis. Rates are shown in rate table.
Disability:	Rates adopted by MSRS as shown in rate table.
Expenses:	Prior year administration expenses expressed as a 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*:**	85% of Members are assumed to be married. 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.
***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 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.

State Employees Retirement Fund

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Pre-retirement Death		Withdrawal		Disability		Retirement		
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**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

State Employees Retirement Fund

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Pre-retirement Death		Withdrawal		Disability		Retirement		
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**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

State Employees Retirement Fund

Summary of Plan Provisions

GENERAL

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

First hired after June 30, 1989:
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

1.2% 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;

OR

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).

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.

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%.

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.

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

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*:**

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

***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.

***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 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%.

TABLE 13
(Continued)

SIGNIFICANT CHANGES

1. Required Member and Employer Contributions reduced to 4.0% of salary for each.

2. Benefit factors were increased by adding 0.2% to each factor.

3. Normal Retirement Age was changed to be no later than age 66.

4. Post-retirement benefit increases now paid when M.P.R.I.F. earnings exceed 6% instead of 5%. An actuarial adjustment is made for those who did not receive the higher benefit factors in (2) above.

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)
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%

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%

* Includes contributions from other sources (if applicable).

TABLE 16

State Employees Retirement Fund

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:

1.	Number of Active Members	5
2.	Projected Annual Earnings	$144,377
3.	Normal Cost	
	a. Dollar Amount	$ 15,523
	b. Percent of Payroll	10.75%

State Employees Retirement Fund

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.	Number of Active Members		4
2.	Projected Annual Earnings		$254,091
3.	Normal Cost		
	a.	Dollar Amount	$ 28,123
	b.	Percent of Payroll	11.07%

State Patrol Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 1997

MILLIMAN & ROBERTSON, INC.

MILLIMAN & ROBERTSON, INC.
Actuaries & Consultants

Internationally WOODROW MILLIMAN

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December 3, 1997

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, 1997.

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
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

State Patrol Retirement Fund

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State Patrol Retirement Fund

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(Continued)

Report Highlights
(dollars in thousands)

	07/01/96 Valuation	07/01/97 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 352B % of Payroll	23.80%	21.00%
2. Required Contributions - Chapter 356 % of Payroll	21.33%	15.67%
3. Sufficiency (Deficiency): (A.1. - A.2.)	2.47%	5.33%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$323,868	$375,650
b. Current Benefit Obligations (Table 8)	$292,348	$321,807
c. Funding Ratio: (a/b)	110.78%	116.73%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$323,868	$375,650
b. Actuarial Accrued Liability (Table 9)	$303,941	$332,427
c. Funding Ratio: (a/b)	106.56%	113.00%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$431,196	$459,199
b. Current and Expected Future Benefit Obligations	$392,611	$423,151
c. Funding Ratio: (a/b)	109.83%	108.52%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	777	795
b. Projected Annual Earnings	$40,399	$43,084
c. Average Annual Earnings (Actual $)	$51,994	$54,193
d. Average Age	42.8	42.8
e. Average Service	15.6	15.5
2. Others		
a. Service Retirements (Table 4)	416	422
b. Survivors (Table 5)	126	128
c. Disability Retirements (Table 6)	18	20
d. Deferred Retirements (Table 7)	22	21
e. Terminated Other Non-vested (Table 7)	6	7
f. Total	588	598

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 116.73%. The corresponding ratio for the prior year was 110.78%.

- 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 1997 the ratio is 113.00%, which is an increase from the 1996 value of 106.56%.

- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 108.52% 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 have been added to fulfill the new requirements of Statement No. 25. For this transition year only, disclosure in accordance with Statement No. 5 is shown below as of JULY 1, 1997:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	$156,220,000
Current Employees	
Accumulated employee contributions including allocated investment income	$59,811,000
Employer-financed vested	89,201,000
Employer-financed nonvested	16,575,000
Total Pension Benefit Obligation	$321,807,000
Net Assets Available for Benefits at Cost	$368,551,000
Total Benefit Obligation less Assets	($46,744,000)
Funded Ratio	114.53%

Actuarial Cost Method (Table 9)

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

A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) illustrates the two techniques for allocating liabilities of active Members to past and future. As noted in the prior section, the balance sheet allocates benefits and the corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll. Both approaches, however, calculate the value of all future benefits the same way (see line F of Table 8 and line A6, column 1, of Table 9).

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

Sources of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

- 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 15.67%.

Changes in Actuarial Assumptions

Assumptions were changed this year as summarized below:

	ASSUMPTION CHANGED FROM	TO
Salary Increase:	Level 6.5%	Graded from 7.25% to 5.25%
Payroll Growth:	6.5%	5.0%
Annuitant Mortality:	M:1971 GAM M F:1971 GAM M (-8)	M:1983 GAM M(+2) F:1983 GAM F(+2)
Disabled Mortality:	Same as annuitant	Combined Annuity Mortality Table
Active Mortality:	M:1971 GAM M F:1971 GAM M(-8)	M:1983 GAM M(-1) F:1983 GAM F
Retirement Age:	100% at age 58 or older	Age-related table
Turnover:	3% at age 20 to 0% at age 55	2.2% at age 20 to 0% at age 50

Changes in Plan Provisions

This valuation reflects the new plan provisions which became effective July 1, 1997. Substantive provisions of that legislation included:

1. Decrease in contribution rates for both Member and Employer.
2. Increase in the benefit rate factor by 0.35%.
3. Early retirement benefit reduced by 2/10% for each month below age 55.
4. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings with corresponding benefit increases for Members who do not receive the new benefit rates in (2.)

State Patrol Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1997

	Market Value	Cost Value
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-term Securities	$2,560	$2,560
2. Fixed Income	52,124	51,697
3. Equity	171,586	150,463
4. Real Estate	7,983	8,235
5. Equity in MPRIF	152,027	152,027
6. Other	0	0
Subtotal	$386,280	$364,982
B. ASSETS RECEIVABLE	4,186	4,186
C. LIABILITIES	(617)	(617)
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	152,027	152,027
2. Member Reserves	35,356	35,356
3. Other Non-MPRIF Reserves	202,466	181,168
4. Total Assets Available for Benefits	$389,849	$368,551

E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS

1. Cost Value of Assets Available for Benefits (D4)		$368,551
2. Market Value (D4)	$389,849	
3. Cost Value (D4)	368,551	
4. Market Over Cost: (E2-E3)	$21,298	
5. One-third of Market Over Cost: (E4)/3		7,099
6. Actuarial Value of Assets (E1+E5) (Same as "Current Assets")		$375,650

State Patrol Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

		Market Value	Cost Value
A.	ASSETS AVAILABLE AT BEGINNING OF PERIOD	$334,938	$318,335
B.	ADDITIONS		
	1. Member Contributions	$3,746	$3,746
	2. Employer Contributions	6,151	6,151
	3. Contributions From Other Sources	0	0
	4. MPRIF Income	18,104	18,104
	5. Net Investment Income		
	a. Interest and Dividends	20,921	20,921
	b. Net Realized Gain (Loss)	16,484	16,484
	c. Net Change in Unrealized Gain (Loss)	4,698	0
	d. Investment Expenses	(313)	(313)
	Net Subtotal	41,790	37,092
	6. Other	0	0
	7. Total Additions	$69,791	$65,096
C.	OPERATING EXPENSES		
	1. Service Retirements paid from MPRIF	$14,642	$14,642
	2. Service Retirements paid from plan assets	0	0
	2. Disability Benefits	0	0
	3. Survivor Benefits	0	0
	4. Refunds	30	30
	6. Administrative Expenses	62	62
	7. Other	146	146
	8. Total Disbursements	$14,880	$14,880
D.	OTHER CHANGES IN RESERVES	0	0
E.	ASSETS AVAILABLE AT END OF PERIOD	$389,849	$368,551

STATE PATROL RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1997

Age	Years of Service ≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	4	0	0	0	0	0	0	0	4
25-29	17	20	10	0	0	0	0	0	47
30-34	15	21	54	14	0	0	0	0	104
35-39	1	20	36	71	13	0	0	0	141
40-44	3	2	25	47	68	6	0	0	151
45-49	0	2	15	15	37	54	13	0	136
50-54	0	0	7	6	14	24	93	7	151
55-59	1	0	1	0	4	5	25	12	48
60-64	0	0	1	0	1	0	3	4	9
65+	0	0	0	0	0	0	0	4	4
ALL	41	65	149	153	137	89	134	27	795

AVERAGE ANNUAL EARNINGS

Age	Years of Service ≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	29,087	0	0	0	0	0	0	0	29,087
25-29	29,617	40,118	46,967	0	0	0	0	0	37,777
30-34	26,982	39,946	50,575	52,718	0	0	0	0	45,314
35-39	32,335	39,282	49,301	52,698	59,541	0	0	0	50,414
40-44	26,933	44,585	50,473	52,410	53,612	53,288	0	0	52,056
45-49	0	47,649	51,653	52,490	54,776	56,097	53,256	0	54,454
50-54	0	0	53,678	51,901	55,073	56,946	54,494	57,419	54,932
55-59	31,585	0	50,797	0	55,927	56,085	55,789	53,979	54,771
60-64	0	0	52,780	0	51,991	0	60,569	57,146	57,229
65+	0	0	0	0	0	0	0	52,657	52,657
ALL	28,519	40,174	50,279	52,560	54,694	56,136	54,752	55,144	51,105

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

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
All	1,169	2,611	7,491	8,041	7,493	4,996	7,336	1,488	40,628

STATE PATROL RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1997

YEARS RETIRED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	1	0	0	0	0	0	0	1
55-59	13	23	1	0	0	0	0	37
60-64	1	36	36	0	0	0	0	73
65-69	0	4	48	24	0	0	0	76
70-74	2	1	15	66	26	0	0	110
75-79	0	0	5	15	41	9	0	70
80-84	0	0	0	3	17	16	4	40
85+	0	0	0	0	0	1	14	15
ALL	17	64	105	108	84	26	18	422

AVERAGE ANNUAL BENEFIT

YEARS RETIRED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	25,510	0	0	0	0	0	0	25,510
55-59	36,900	31,387	35,804	0	0	0	0	33,443
60-64	45,993	33,124	34,742	0	0	0	0	34,098
65-69	0	40,855	37,786	28,096	0	0	0	34,888
70-74	28,609	28,328	33,088	33,376	31,348	0	0	32,725
75-79	0	0	27,327	35,159	32,496	24,210	0	31,632
80-84	0	0	0	23,130	28,319	23,090	25,791	25,585
85+	0	0	0	0	0	23,572	21,199	21,357
ALL	35,790	32,908	35,554	32,166	31,295	23,496	22,219	32,136

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	608	2,106	3,733	3,473	2,628	610	399	13,561

STATE PATROL RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1997

	YEARS DEATH							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	4	0	0	0	0	1	0	5
50-54	2	1	0	0	0	0	0	3
55-59	0	3	1	0	0	0	0	4
60-64	0	0	5	0	0	0	0	5
65-69	0	3	1	1	3	3	1	12
70-74	2	4	6	1	7	2	2	24
75-79	0	2	5	1	3	4	1	16
80-84	1	5	8	0	1	3	10	28
85+	0	2	4	0	0	2	23	31
ALL	9	20	30	3	14	15	37	128

AVERAGE ANNUAL BENEFIT

	YEARS DEATH							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	9,692	0	0	0	0	6,469	0	9,047
50-54	24,353	35,630	0	0	0	0	0	28,112
55-59	0	13,993	16,574	0	0	0	0	14,638
60-64	0	0	10,127	0	0	0	0	10,127
65-69	0	17,539	11,738	28,286	26,070	12,237	11,104	18,222
70-74	17,914	27,128	14,608	29,809	30,335	19,974	14,002	22,587
75-79	0	14,245	17,463	23,098	25,489	18,757	11,734	18,883
80-84	17,320	9,725	13,806	0	12,394	11,406	15,516	13,506
85+	0	16,427	14,928	0	0	13,803	14,244	14,445
ALL	15,625	17,435	14,136	27,064	27,101	14,665	14,422	16,622

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS DEATH

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	140	348	424	81	379	219	533	2,127

STATE PATROL RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1997

	YEARS DISABLED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	1	1	1	0	0	0	0	3
50-54	0	1	0	0	0	0	0	1
55-59	1	2	2	1	1	0	0	7
60-64	0	0	2	0	0	0	0	2
65-69	0	0	0	1	1	1	0	3
70-74	0	0	0	0	2	1	0	3
75-79	0	0	0	0	0	1	0	1
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	2	4	5	2	4	3	0	20

AVERAGE ANNUAL BENEFIT

	YEARS DISABLED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	22,067	24,394	21,860	0	0	0	0	22,774
50-54	0	31,579	0	0	0	0	0	31,579
55-59	33,755	32,237	17,018	23,395	22,336	0	0	25,428
60-64	0	0	32,315	0	0	0	0	32,315
65-69	0	0	0	36,489	24,562	19,148	0	26,733
70-74	0	0	0	0	27,842	26,323	0	27,336
75-79	0	0	0	0	0	12,712	0	12,712
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	27,911	30,112	24,105	29,942	25,646	19,394	0	25,872

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	55,822	120,448	120,525	59,884	102,584	58,182	0	517,440

State Patrol Retirement Fund

Reconciliation Of Members

	Actives	Terminated: Deferred Retirement	Terminated: Other Non-Vested
A. ON JUNE 30, 1996	777	22	6
B. ADDITIONS	41	1	2
C. DELETIONS			
1. Service Retirement	(17)	0	0
2. Disability	0	0	0
3. Death	(1)	0	0
4. Terminated - Deferred	(1)	0	0
5. Terminated - Refund	(2)	0	0
6. Terminated - Other Non-Vested	(2)	0	0
7. Returned as Active	2	(2)	0
8. Transferred to Other Fund	0	0	(1)
D. DATA ADJUSTMENTS	(2)	0	0
Vested	717		
Non-Vested	78		
E. TOTAL ON JUNE 30, 1997	795	21	7

	Recipients: Retirement Annuitants	Recipients: Disabled	Recipients: Survivors
A. ON JUNE 30, 1996	416	18	126
B. ADDITIONS	17	2	9
C. DELETIONS			
1. Service Retirement	0	0	0
2. Death	(11)	0	(7)
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	0
D. DATA ADJUSTMENTS	0	0	0
E. TOTAL ON JUNE 30, 1997	422	20	128

State Patrol Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 1997

A.	CURRENT ASSETS (TABLE 1, E6)			$375,650
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			($7,175)
	2. Present Value of Future Normal Costs			90,724
	3. Total Expected Future Assets			$83,549
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$459,199
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	1. Benefit Recipients			
	a. Retirement Annuities		$129,376	$129,376
	b. Disability Benefits		5,841	5,841
	c. Surviving Spouse and Child Benefits		17,712	17,712
	2. Deferred Retirements with Future Augmentation		3,096	3,096
	3. Former Members without Vested Rights		195	195
	4. Active Members			
	a. Retirement Annuities	609	146,732	147,341
	b. Disability Benefits	10,024	0	10,024
	c. Survivor's Benefits	5,903	0	5,903
	d. Deferred Retirements	39	2,221	2,260
	e. Refund Liability Due to Death or Withdrawal	0	59	59
	5. Total Current Benefit Obligations	$16,575	$305,232	$321,807
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			$101,344
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$423,151
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			($53,843)
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			($36,048)

State Patrol Retirement Fund

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

(dollars in thousands)

JULY 1, 1997

	Actuarial Present Value of Projected Benefits (1)	Actuarial Present Value of Future Normal Costs (2)	Actuarial Accrued Liability (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	$237,018	$73,084	$163,934
b. Disability Benefits	16,449	8,751	7,698
c. Survivor's Benefit	9,628	5,514	4,114
d. Deferred Retirements	3,734	2,746	988
e. Refunds Due to Death or Withdrawal	102	629	(527)
f. Total	$266,931	$90,724	$176,207
2. Deferred Retirements With Future Augmentation	3,096		3,096
3. Former Members Without Vested Rights	195		195
4. Annuitants in MPRIF	152,027		152,027
5. Recipients Not in MPRIF	902		902
6. Total	$423,151	$90,724	$332,427

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$332,427
2. Current Assets (Table 1, E6)	375,650
3. UAAL (B1-B2)	($43,223)
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020	$676,911
2. Supplemental Contribution Rate (B3/C1)	-6.39%

State Patrol Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

A. UAAL AT BEGINNING OF YEAR	($19,927)
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	$8,615
2. Contribution	(9,897)
3. Interest on A, B1 and B2	(1,748)
4. Total (B1+B2+B3)	($3,030)
C. EXPECTED UAAL AT END OF YEAR (A+B4)	($22,957)
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	($1,179)
2. Investment Return	(23,062)
3. MPRIF Mortality	981
4. Mortality of Other Benefit Recipients	(3)
5. Other Items	288
6. Total	($22,975)
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	($45,932)
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	9,088
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	(6,379)
H. UAAL AT END OF YEAR (E+F+G)	($43,223)

State Patrol Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1997

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 352B		
1. Employee Contributions	8.40%	$3,619
2. Employer Contributions	12.60%	5,429
3. Total	21.00%	$9,048
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	17.62%	$7,593
b. Disability benefits	2.14%	922
c. Survivors	1.37%	591
d. Deferred Retirement Benefits	0.64%	276
e. Refunds Due to Death or Withdrawal	0.14%	61
f. Total	21.91%	$9,443
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	-6.39%	(2,753)
3. Allowance for Expenses	0.15%	65
4. Total	15.67%	$6,755
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	5.33%	$2,293

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1997 is $43,084.

State Patrol Retirement Fund

Summary of Actuarial Assumptions and Methods

Interest:	**Pre-Retirement:** 8.5% per annum **Post-Retirement:** 6.0% per annum; 5.0% in prior valuation
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. Flat 6.5% in prior valuation.
Mortality:	**Pre-Retirement:** Male - 1983 GAM (Males -1) Female - 1983 GAM (Females) **Post-Retirement:** Male - 1983 GAM (Males +2) Female - 1983 GAM (Females +2) **Post-Disability:** Male - Combined Annuity Mortality Female - Combined Annuity Mortality These assumptions represent a change from the prior year's assumption.
Retirement Age:	Age-related table as follows:

Ages:	
50-53	2%
54	20
55	60
56-61	20
62-64	50
65+	100

These assumptions represent a change from the prior year's assumption.

Separation: Graded rates starting at .022 at age 20 and decreasing to .003 at age 49. Adopted 1997. Slightly higher rates were used in the prior valuation.

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 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, 6.5% in the prior valuation.

State Patrol Retirement Fund

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Death		Withdrawal		Disability		Retirement		Salary
Age	Male	Female	Male	Female	Male	Female	Male	Female	Increases
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
26	5	3	160	160	6	6	0	0	7
27	5	3	150	150	7	7	0	0	7
28	5	3	140	140	7	7	0	0	7
29	5	3	130	130	8	8	0	0	7
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
35	8	5	70	70	11	11	0	0	7
36	9	5	60	60	12	12	0	0	6.9019
37	9	5	60	60	13	13	0	0	6.8074
38	10	6	60	60	15	15	0	0	6.7125
39	10	6	60	60	16	16	0	0	6.6054
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	0	0	5.6940
47	25	12	60	60	36	36	0	0	5.6375
48	28	14	60	60	41	41	0	0	5.5822
49	31	15	30	30	46	46	0	0	5.5405

State Patrol Retirement Fund

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Death		Withdrawal		Disability		Retirement		Salary
Age	Male	Female	Male	Female	Male	Female	Male	Female	Increases
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	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

State Patrol Retirement Fund

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 Service.
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.

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 retirement 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 occupational 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

1. Member and Employer Contribution rates reduced from 8.92% and 14.88%, respectively, to 8.40% and 12.60%, respectively.
2. Benefit factor increased from 2.65% to 3.0%.
3. Early retirement reduction prior to age 55 is changed from actuarial equivalent to 2/10% per month.
4. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings with corresponding benefit increases for Members who do not receive the new benefit rates in (2).

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%

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%

* Includes contributions from other sources (if applicable).

Correctional Employees Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 1997

MILLIMAN & ROBERTSON, INC.

MILLIMAN & ROBERTSON, INC.
Actuaries & Consultants

Internationally WOODROW MILLIMAN

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December 3, 1997

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, 1997.

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

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

Correctional Employees Retirement Fund

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Correctional Employees Retirement Fund

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(Continued)

Correctional Employees Retirement Fund

Report Highlights

(dollars in thousands)

	07/01/96 Valuation	07/01/97 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 352 % of Payroll	11.17%	13.20%
2. Required Contributions - Chapter 356 % of Payroll	11.21%	12.49%
3. Sufficiency (Deficiency): (A.1. - A.2.)	-0.04%	0.71%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$193,833	$241,916
b. Current Benefit Obligations (Table 8)	$149,557	$190,792
c. Funding Ratio: (a/b)	129.60%	126.80%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$193,833	$241,916
b. Actuarial Accrued Liability (Table 9)	$170,959	$212,638
c. Funding Ratio: (a/b)	113.38%	113.77%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$262,424	$322,415
b. Current and Expected Future Benefit Obligations	$239,550	$312,185
c. Funding Ratio: (a/b)	109.55%	103.28%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	2,264	2,600
b. Projected Annual Earnings	$78,030	$91,847
c. Average Annual Earnings (Actual $)	$34,466	$35,326
d. Average Age	38.4	39.4
e. Average Service	7.3	7.3
2. Others		
a. Service Retirements (Table 4)	413	444
b. Survivors (Table 5)	27	36
c. Disability Retirements (Table 6)	33	39
d. Deferred Retirements (Table 7)	324	282
e. Terminated Other Non-vested (Table 7)	84	90
f. Total	881	891

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 126.80%. The corresponding ratio for the prior year was 129.60%.

- ° 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 1997 the ratio is 113.77%, which is an increase from the 1996 value of 113.38%.

- ° The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 103.28% 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 have been added to fulfill the new requirements of Statement No. 25. For this transition year only, disclosure in accordance with Statement No. 5 is shown below as of JULY 1, 1997:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	$74,562,000
Current Employees	
Accumulated employee contributions including allocated investment income	$44,192,000
Employer-financed vested	58,127,000
Employer-financed nonvested	13,911,000
Total Pension Benefit Obligation	$190,792,000
Net Assets Available for Benefits at Cost	$236,425,000
Total Benefit Obligation less Assets	($45,633,000)
Funded Ratio	123.92%

Actuarial Cost Method (Table 9)

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

A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) illustrates the two techniques for allocating liabilities of active Members to past and future. As noted in the prior section, the balance sheet allocates benefits and the corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll. Both approaches, however, calculate the value of all future benefits the same way (see line F of Table 8 and line A6, column 1, of Table 9).

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

The payments will increase 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.

Sources of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

- ° 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 13.20% compared to the Required Contribution Rate of 12.49%.

Changes in Actuarial Assumptions

Assumptions were changed this year as summarized below:

	ASSUMPTION CHANGED FROM	TO
Salary Increase:	Level 6.5%	Graded from 7.25% to 5.25%
Payroll Growth:	6.5%	5.0%
Annuitant Mortality:	M:1971 GAM M F:1971 GAM M (-8)	M:1983 GAM M(+2) F:1983 GAM F(+2)
Acitve Mortality:	M:1971 GAM M F:1971 GAM F(-8)	M:1983 GAM M(-1) F:1983 GAM F
Retirement Age:	100% at age 58 or older	Age-related table
Turnover	Graded rates from 24%M, 37%F at 20 to .4%M, .9%F at 59	Graded rates from 24%M, 16%F at 20 to .4%M, .9%F at 59

Changes in Plan Provisions

This valuation reflects the new plan provisions which became effective July 1, 1997. Substantive provisions of that legislation included:

1. Increase in contribution rates for both Member and Employer.
2. Decrease in the initial benefit rate factor by 0.10% but with continuation of this benefit for life.
3. Addition of Level Social Security Option to age 62 or Social Security Retirement Age.
4. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings with corresponding benefit increases for Members who do not receive the new benefit rates in (2.)

Correctional Employees Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1997

		Market Value	Cost Value
A.	ASSETS IN TRUST		
	1. Cash, Equivalents, Short-term Securities	$7,736	$7,736
	2. Fixed Income	39,862	39,536
	3. Equity	131,221	114,975
	4. Real Estate	6,105	6,203
	5. Equity in MPRIF	63,680	63,680
	6. Other	0	0
	Subtotal	$248,604	$232,130
B.	ASSETS RECEIVABLE	5,098	5,098
C.	LIABILITIES	(803)	(803)
D.	NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
	1. MPRIF Reserves	63,680	63,680
	2. Member Reserves	30,347	30,347
	3. Other Non-MPRIF Reserves	158,872	142,398
	4. Total Assets Available for Benefits	$252,899	$236,425

E.	DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
	1. Cost Value of Assets Available for Benefits (D4)		$236,425
	2. Market Value (D4)	$252,899	
	3. Cost Value (D4)	236,425	
	4. Market Over Cost: (E2-E3)	$16,474	
	5. One-third of Market Over Cost: (E4)/3		5,491
	6. Actuarial Value of Assets (E1+E5) (Same as "Current Assets")		$241,916

TABLE 2

Correctional Employees Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

		Market Value	Cost Value
A.	ASSETS AVAILABLE AT BEGINNING OF PERIOD	$202,582	$189,459
B.	ADDITIONS		
	1. Member Contributions	$5,508	$5,508
	2. Employer Contributions	9,129	9,129
	3. Contributions From Other Sources	0	0
	4. MPRIF Income	6,950	6,950
	5. Net Investment Income		
	a. Interest and Dividends	16,017	16,017
	b. Net Realized Gain (Loss)	12,801	12,801
	c. Net Change in Unrealized Gain (Loss)	3,350	0
	d. Investment Expenses	(239)	(239)
	Net Subtotal	31,929	28,579
	6. Other	3,715	3,715
	7. Total Additions	$57,231	$53,880
C.	OPERATING EXPENSES		
	1. Service Retirements paid from MPRIF	$6,267	$6,267
	2. Service Retirements paid from plan assets	0	0
	2. Disability Benefits	0	0
	3. Survivor Benefits	0	0
	4. Refunds	367	367
	6. Administrative Expenses	140	140
	7. Other	140	140
	8. Total Disbursements	$6,914	$6,914
D.	OTHER CHANGES IN RESERVES	0	0
E.	ASSETS AVAILABLE AT END OF PERIOD	$252,899	$236,425

CORRECTIONAL EMPLOYEES RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1997

Years of Service

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	29	29	1	0	0	0	0	0	59
25-29	74	268	33	0	0	0	0	0	375
30-34	39	222	139	32	0	0	0	0	432
35-39	60	161	156	97	24	0	0	0	498
40-44	44	111	80	76	79	21	0	0	411
45-49	65	89	74	57	69	66	8	0	428
50-54	43	56	33	33	43	54	23	3	288
55-59	14	15	14	7	10	7	1	3	71
60-64	7	3	5	4	11	5	1	0	36
65+	1	1	0	0	0	0	0	0	2
ALL	376	955	535	306	236	153	33	6	2,600

AVERAGE ANNUAL EARNINGS

Years of Service

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
<25	18,672	27,779	32,846	0	0	0	0	0	23,389
25-29	24,048	29,879	33,961	0	0	0	0	0	29,088
30-34	22,640	29,826	33,580	36,472	0	0	0	0	30,877
35-39	26,951	30,884	34,285	37,041	39,386	0	0	0	33,085
40-44	28,622	30,761	34,185	37,411	39,588	41,873	0	0	34,693
45-49	32,876	31,313	34,329	37,525	38,715	41,627	43,379	0	35,909
50-54	34,942	33,488	33,440	37,942	39,668	42,925	44,831	39,541	37,871
55-59	34,193	30,106	38,140	42,436	39,925	44,785	34,701	37,065	36,901
60-64	31,937	31,699	36,346	43,101	42,499	39,558	36,696	0	38,188
65+	53,831	40,042	0	0	0	0	0	0	46,937
ALL	27,862	30,440	34,138	37,463	39,477	42,196	43,926	38,303	33,356

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

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
All	10,476	29,070	18,263	11,463	9,316	6,455	1,449	229	86,725

TABLE 4

CORRECTIONAL EMPLOYEES RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1997

	YEARS RETIRED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	2	0	0	0	0	0	0	2
55-59	22	24	1	0	0	0	0	47
60-64	12	34	41	0	0	0	0	87
65-69	6	10	36	30	0	0	0	82
70-74	0	4	15	29	28	0	0	76
75-79	0	0	0	14	23	26	0	63
80-84	0	0	0	0	12	39	0	51
85+	0	0	0	0	0	36	0	36
ALL	42	72	93	73	63	101	0	444

AVERAGE ANNUAL BENEFIT

	YEARS RETIRED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	4,847	0	0	0	0	0	0	4,847
55-59	17,322	20,849	11,078	0	0	0	0	18,990
60-64	13,715	20,467	20,770	0	0	0	0	19,679
65-69	16,286	11,239	14,218	12,608	0	0	0	13,417
70-74	0	12,026	9,140	14,269	15,705	0	0	13,668
75-79	0	0	0	13,904	13,166	10,720	0	12,321
80-84	0	0	0	0	11,084	8,654	0	9,226
85+	0	0	0	0	0	7,317	0	7,317
ALL	15,549	18,844	16,254	13,516	13,898	8,709	0	14,107

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	653	1,356	1,511	986	875	879	0	6,263

CORRECTIONAL EMPLOYEES RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1997

	YEARS DEATH							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	3	2	1	0	0	0	0	6
50-54	1	2	0	0	0	0	0	3
55-59	2	2	0	2	0	0	0	6
60-64	1	3	2	1	0	0	0	7
65-69	1	0	1	1	1	0	0	4
70-74	0	1	0	0	0	0	0	1
75-79	1	1	1	0	0	2	0	5
80-84	0	1	0	0	0	1	1	3
85+	0	0	1	0	0	0	0	1
ALL	9	12	6	4	1	3	1	36

AVERAGE ANNUAL BENEFIT

	YEARS DEATH							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	7,054	1,739	8,528	0	0	0	0	5,528
50-54	12,315	13,274	0	0	0	0	0	12,954
55-59	9,951	8,841	0	8,557	0	0	0	9,116
60-64	5,197	8,008	6,472	23,045	0	0	0	9,316
65-69	4,269	0	6,804	3,382	9,075	0	0	5,883
70-74	0	14,379	0	0	0	0	0	14,379
75-79	8,278	877	4,462	0	0	7,373	0	5,673
80-84	0	1,909	0	0	0	5,642	2,046	3,199
85+	0	0	437	0	0	0	0	437
ALL	7,903	7,408	5,529	10,885	9,075	6,796	2,046	7,451

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DEATH

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	71,127	88,896	33,174	43,540	9,075	20,388	2,046	268,236

CORRECTIONAL EMPLOYEES RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1997

YEARS DISABLED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	5	10	2	0	0	0	0	17
50-54	3	4	5	0	0	0	0	12
55-59	0	2	1	0	0	0	0	3
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	1	0	0	1
75-79	0	0	0	0	1	1	0	2
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	8	16	10	1	3	1	0	39

AVERAGE ANNUAL BENEFIT

YEARS DISABLED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	18,078	15,636	16,333	0	0	0	0	16,436
50-54	9,217	17,364	14,798	0	0	0	0	14,258
55-59	0	21,209	17,186	0	0	0	0	19,868
60-64	0	0	17,718	21,272	0	0	0	18,903
65-69	0	0	0	0	10,731	0	0	10,731
70-74	0	0	0	0	20,530	0	0	20,530
75-79	0	0	0	0	3,160	4,587	0	3,874
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	14,755	16,765	15,928	21,272	11,474	4,587	0	15,534

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	118,040	268,240	159,280	21,272	34,422	4,587	0	605,826

Correctional Employees Retirement Fund

Reconciliation Of Members

	Actives	Terminated: Deferred Retirement	Terminated: Other Non-Vested
A. ON JUNE 30, 1996	2,264	324	84
B. ADDITIONS	401	50	28
C. DELETIONS			
1. Service Retirement	(23)	(5)	0
2. Disability	(7)	(1)	0
3. Death	0	0	0
4. Terminated - Deferred	(46)	0	(3)
5. Terminated - Refund	(50)	(6)	(7)
6. Terminated - Other Non-Vested	(25)	0	0
7. Returned as Active	88	(81)	(7)
8. Transferred to Other Fund	0	0	(5)
D. DATA ADJUSTMENTS	(2)	1	0
Vested	1,570		
Non-Vested	1,030		
E. TOTAL ON JUNE 30, 1997	2,600	282	90

	Recipients: Retirement Annuitants	Recipients: Disabled	Recipients: Survivors
A. ON JUNE 30, 1996	413	33	27
B. ADDITIONS	42	10	10
C. DELETIONS			
1. Service Retirement	0	0	0
2. Death	(7)	(4)	(1)
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	0
D. DATA ADJUSTMENTS	(4)	0	0
E. TOTAL ON JUNE 30, 1997	444	39	36

Correctional Employees Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 1997

	Non-Vested	Vested	Total
A. CURRENT ASSETS (TABLE 1, E6)			$241,916
B. EXPECTED FUTURE ASSETS			
1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			($19,048)
2. Present Value of Future Normal Costs			99,547
3. Total Expected Future Assets			$80,499
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$322,415
D. CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
1. Benefit Recipients			
a. Retirement Annuities		$53,224	$53,224
b. Disability Benefits		7,355	7,355
c. Surviving Spouse and Child Benefits		3,101	3,101
2. Deferred Retirements with Future Augmentation		10,708	10,708
3. Former Members without Vested Rights		174	174
4. Active Members			
a. Retirement Annuities	3,542	88,808	92,350
b. Disability Benefits	7,048	0	7,048
c. Survivor's Benefits	2,359	0	2,359
d. Deferred Retirements	962	11,308	12,270
e. Refund Liability Due to Death or Withdrawal	0	2,203	2,203
5. Total Current Benefit Obligations	$13,911	$176,881	$190,792
E. EXPECTED FUTURE BENEFIT OBLIGATIONS			$121,393
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$312,185
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			($51,124)
H. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			($10,230)

Correctional Employees Retirement Fund

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

(dollars in thousands)

JULY 1, 1997

	Actuarial Present Value of Projected Benefits (1)	Actuarial Present Value of Future Normal Costs (2)	Actuarial Accrued Liability (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	$191,191	$68,643	$122,548
b. Disability Benefits	14,233	7,657	6,576
c. Survivor's Benefit	4,539	1,989	2,550
d. Deferred Retirements	23,409	13,303	10,106
e. Refunds Due to Death or Withdrawal	4,251	7,955	(3,704)
f. Total	$237,623	$99,547	$138,076
2. Deferred Retirements With Future Augmentation	10,708		10,708
3. Former Members Without Vested Rights	174		174
4. Annuitants in MPRIF	63,680		63,680
5. Recipients Not in MPRIF	0		0
6. Total	$312,185	$99,547	$212,638

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$212,638
2. Current Assets (Table 1, E6)	241,916
3. UAAL (B1-B2)	($29,278)
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020	$1,443,062
2. Supplemental Contribution Rate (B3/C1)	-2.03%

Correctional Employees Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

A.	UAAL AT BEGINNING OF YEAR	($22,874)
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	1. Normal Cost and Expenses	$8,740
	2. Contribution	(14,636)
	3. Interest on A, B1 and B2	(2,195)
	4. Total (B1+B2+B3)	($8,091)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	($30,965)
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	1. Salary Increases	($2,250)
	2. Investment Return	(17,366)
	3. MPRIF Mortality	582
	4. Mortality of Other Benefit Recipients	0
	5. Other Items	4,696
	6. Total	($14,338)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	($45,303)
F.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	11,602
G.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	4,423
H.	UAAL AT END OF YEAR (E+F+G)	($29,278)

Correctional Employees Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1997

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 352		
1. Employee Contributions	5.50%	$5,052
2. Employer Contributions	7.70%	7,072
3. Total	13.20%	$12,124
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	10.12%	$9,296
b. Disability benefits	1.11%	1,019
c. Survivors	0.27%	244
d. Deferred Retirement Benefits	1.79%	1,641
e. Refunds Due to Death or Withdrawal	1.05%	962
f. Total	14.34%	$13,162
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	-2.03%	(1,864)
3. Allowance for Expenses	0.18%	165
4. Total	12.49%	$11,463
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	0.71%	$661

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1997 is $91,847.

Correctional Employees Retirement Fund

Summary of Actuarial Assumptions and Methods

Interest:	**Pre-Retirement**: 8.5% per annum **Post-Retirement**: 6.0% per annum, 5.0% in prior valuation
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. Flat 6.5% in prior valuation.
Mortality:	**Pre-Retirement**: Male - 1983 GAM (Males -1) Female - 1983 GAM (Females) **Post-Retirement**: Male - 1983 GAM (Males +2) Female - 1983 GAM (Females +2) **Post-Disability**: Male - Combined Annuity Mortality Table Female - Combined Annuity Mortality Table
Retirement Age:	Age-related table as follows:

Ages:		
	50-53	2%
	54	20
	55	60
	56-61	20
	62-64	50
	65+	100

These assumptions represent a change from the prior year's assumption.

Separation:	Graded rates based on actual experience developed by the June 30, 1997 experience analysis. Rates are shown in rate table.

These assumptions represent a change from the prior year's assumption.

***Disability*:**	Rates as shown in rate table. These assumptions represent a change from the prior year's assumption.
***Administrative and Investment 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 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*:**	Based on the present law and 6.5% 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 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 with normal costs expressed as a level percentage of earnings. 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% per annum, 6.5% in the prior valuation.

TABLE 12
(Continued)

Correctional Employees Retirement Fund

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Death		Withdrawal		Disability		Retirement		Salary
Age	Male	Female	Male	Female	Male	Female	Male	Female	Increases
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

Correctional Employees Retirement Fund

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Death		Withdrawal		Disability		Retirement		Salary
Age	Male	Female	Male	Female	Male	Female	Male	Female	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

Correctional Employees Retirement Fund

Summary of Plan Provisions

GENERAL

Eligibility:	State employees in covered correctional service.
Contributions:	
Member:	5.50% of salary.
Employer:	7.70% 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.

***Retirement 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

1. Member and Employer contribution rates increased to 5.50% and 7.70% of salary.

2. Benefit factor reduced by .10% but with continuation of this benefit for life.

3. Addition of Level Social Security option to either age 62 or Social Security Retirement Age.

4. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings with corresponding benefit increases for Members who do not receive the new benefit rates in (2).

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%

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
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%

* Includes contributions from other sources (if applicable).

Legislators Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 1997

MILLIMAN & ROBERTSON, INC.

MILLIMAN & ROBERTSON, INC.
Actuaries & Consultants

Internationally WOODROW MILLIMAN

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December 3, 1997

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, 1995.

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

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

Legislators Retirement Fund

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(Continued)

Legislators Retirement Fund

Report Highlights

(dollars in thousands)

	07/01/96 Valuation	07/01/97 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 3A % of Payroll	9.00%	9.00%
2. Required Contributions - Chapter 356 % of Payroll	43.96%	48.03%
3. Sufficiency (Deficiency): (A.1. - A.2.)	-34.96%	-39.03%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$22,532	$25,678
b. Current Benefit Obligations (Table 8)	$51,404	$57,218
c. Funding Ratio: (a/b)	43.83%	44.88%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$22,532	$25,678
b. Actuarial Accrued Liability (Table 9)	$54,225	$60,055
c. Funding Ratio: (a/b)	41.55%	42.76%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$32,862	$35,245
b. Current and Expected Future Benefit Obligations	$64,555	$69,622
c. Funding Ratio: (a/b)	50.91%	50.62%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	201	201
b. Projected Annual Earnings	$7,423	$7,626
c. Average Annual Earnings (Actual $)	$36,930	$37,940
d. Average Age	50.2	49.8
e. Average Service	9.1	8.4
2. Others		
a. Service Retirements (Table 4)	163	181
b. Survivors (Table 5)	65	66
c. Disability Retirements (Table 6)	0	0
d. Deferred Retirements (Table 7)	127	128
e. Terminated Other Non-vested (Table 7)	7	10
f. Total	362	385

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 44.88%. The corresponding ratio for the prior year was 43.83%.

- ° 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 1997 the ratio is 42.76%, which is an increase from the 1996 value of 41.55%.

- ° The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 50.62% 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 have been added to fulfill the new requirements of Statement No. 25. For this transition year only, disclosure in accordance with Statement No. 5 is shown below as of JULY 1, 1997:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	$42,955,000
Current Employees	
Accumulated employee contributions including allocated investment income	$6,936,000
Employer-financed vested	5,456,000
Employer-financed nonvested	1,871,000
Total Pension Benefit Obligation	$57,218,000
Net Assets Available for Benefits at Cost	$25,678,000
Total Benefit Obligation less Assets	$31,540,000
Funded Ratio	44.88%

Actuarial Cost Method (Table 9)

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

A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) illustrates the two techniques for allocating liabilities of active Members to past and future. As noted in the prior section, the balance sheet allocates benefits and the corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll. Both approaches, however, calculate the value of all future benefits the same way (see line F of Table 8 and line A6, column 1, of Table 9).

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

The payments will increase 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.

Sources of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

- 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 Rate is 9.00% compared to the Required Contribution Rate of 48.03%.

Changes in Actuarial Assumptions

Assumptions were changed this year as summarized below

	ASSUMPTION CHANGED FROM	TO
Salary Increase:	Level 6.5%	Level 5.0%
Payroll Growth:	6.5%	5.0%
Annuitant Mortality:	M: 1971 GAM M F: 1971 GAM M (-8)	M: 1983 GAM M F: 1983 GAM F
Active Mortality:	M:1971 GAM M F:1971 GAM M(-8)	M:1983GAM M (-4) F:1983 GAM F(-2)

Changes in Plan Provisions

This valuation reflects the new plan provisions which became effective July 1, 1997. Substantive provisions of that legislation included:

1. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings, with a corresponding increase in the benefit level made at the time of retirement.

Legislators Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1997

	Market Value	Cost Value
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-term Securities	$0	$0
2. Fixed Income	0	0
3. Equity	0	0
4. Real Estate	0	0
5. Equity in MPRIF	21,208	21,208
6. Other	6,452	6,452
Subtotal	$27,660	$27,660
B. ASSETS RECEIVABLE	0	0
C. LIABILITIES	(1,982)	(1,982)
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	21,208	21,208
2. Member Reserves	6,378	6,378
3. Other Non-MPRIF Reserves	(1,908)	(1,908)
4. Total Assets Available for Benefits	$25,678	$25,678

E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS

1. Cost Value of Assets Available for Benefits (D4)		$25,678
2. Market Value (D4)	$25,678	
3. Cost Value (D4)	25,678	
4. Market Over Cost: (E2-E3)	$0	
5. One-third of Market Over Cost: (E4)/3		0
6. Actuarial Value of Assets (E1+E5) (Same as "Current Assets")		$25,678

Legislators Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

	Market Value	Cost Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$22,531	$22,531
B. ADDITIONS		
1. Member Contributions	$699	$699
2. Employer Contributions	3,176	3,176
3. Contributions From Other Sources	0	0
4. MPRIF Income	2,081	2,081
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	$5,955	$5,955
C. OPERATING EXPENSES		
1. Service Retirements paid from MPRIF	$2,639	$2,639
2. Service Retirements paid from plan assets	0	0
2. Disability Benefits	0	0
3. Survivor Benefits	0	0
4. Refunds	119	119
6. Administrative Expenses	30	30
7. Other	20	20
8. Total Disbursements	$2,808	$2,808
D. OTHER CHANGES IN RESERVES	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	$25,678	$25,678

TABLE 3

LEGISLATORS RETIREMENT PLAN

ACTIVE MEMBERS AS OF JUNE 30, 1997

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
	Years of Service								
<25	2	0	0	0	0	0	0	0	2
25-29	2	0	0	0	0	0	0	0	2
30-34	1	8	0	0	0	0	0	0	9
35-39	4	7	4	1	0	0	0	0	16
40-44	4	14	4	4	0	0	0	0	26
45-49	5	18	9	9	3	3	0	0	47
50-54	5	7	7	5	3	5	1	0	33
55-59	3	8	5	9	3	3	1	0	32
60-64	1	6	3	4	0	4	0	0	18
65+	1	3	1	4	2	3	2	0	16
ALL	28	71	33	36	11	18	4	0	201

AVERAGE ANNUAL EARNINGS

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
	Years of Service								
<25	34,458	0	0	0	0	0	0	0	34,458
25-29	34,458	0	0	0	0	0	0	0	34,458
30-34	34,458	43,090	0	0	0	0	0	0	42,131
35-39	34,458	42,818	43,854	42,146	0	0	0	0	40,945
40-44	34,458	40,893	44,328	41,183	0	0	0	0	40,476
45-49	34,458	40,807	41,726	41,128	42,041	41,907	0	0	40,518
50-54	34,458	42,637	42,701	43,469	43,170	42,671	41,739	0	41,564
55-59	34,458	40,542	43,429	41,823	44,359	43,250	41,907	0	41,437
60-64	34,458	43,659	41,907	42,914	0	43,792	0	0	42,720
65+	34,458	43,194	45,698	42,178	41,907	41,940	41,907	0	41,994
ALL	34,458	41,772	42,901	41,976	42,957	42,767	41,865	0	41,130

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

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
All	964	2,965	1,415	1,511	472	769	167	0	8,267

LEGISTATORS RETIREMENT PLAN

SERVICE RETIREMENTS AS OF JUNE 30, 1997

	YEARS RETIRED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	1	0	0	0	0	0	1
60-64	8	18	0	0	0	0	0	26
65-69	9	20	25	0	0	0	0	54
70-74	3	9	3	29	0	0	0	44
75-79	0	0	3	7	20	0	0	30
80-84	0	0	1	1	5	7	0	14
85+	0	0	0	0	0	7	5	12
ALL	20	48	32	37	25	14	5	181

AVERAGE ANNUAL BENEFIT

	YEARS RETIRED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	15,137	0	0	0	0	0	15,137
60-64	10,012	15,669	0	0	0	0	0	13,928
65-69	12,747	16,359	12,663	0	0	0	0	14,046
70-74	14,193	13,605	8,780	12,751	0	0	0	12,753
75-79	0	0	16,474	14,475	15,735	0	0	15,515
80-84	0	0	7,510	23,652	28,834	10,355	0	17,701
85+	0	0	0	0	0	9,894	13,642	11,456
ALL	11,870	15,558	12,495	13,372	18,355	10,125	13,642	14,075

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	237	746	399	494	458	141	68	2,547

LEGISTATORS RETIREMENT PLAN

SURVIVORS AS OF JUNE 30, 1997

	YEARS DEATH							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	1	0	0	0	0	0	0	1
50-54	0	0	0	0	0	0	0	0
55-59	0	1	2	1	2	0	0	6
60-64	1	0	1	0	0	0	0	2
65-69	1	5	2	1	0	1	1	11
70-74	1	2	4	0	1	1	0	9
75-79	0	3	3	1	0	2	0	9
80-84	0	4	8	0	1	2	3	18
85+	0	2	2	0	0	1	5	10
ALL	4	17	22	3	4	7	9	66

AVERAGE ANNUAL BENEFIT

	YEARS DEATH							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	16,048	0	0	0	0	0	0	16,048
50-54	0	0	0	0	0	0	0	0
55-59	0	5,845	10,091	29,204	11,821	0	0	13,146
60-64	1,176	0	6,925	0	0	0	0	4,051
65-69	28,225	4,480	6,656	3,841	0	7,317	44,474	10,870
70-74	26,991	9,804	3,360	0	2,212	7,277	0	7,725
75-79	0	6,841	6,777	4,321	0	2,866	0	5,656
80-84	0	7,243	7,222	0	11,253	8,039	5,404	7,238
85+	0	5,396	6,504	0	0	7,063	4,984	5,578
ALL	18,110	6,361	6,590	12,455	9,277	6,210	9,512	8,017

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DEATH

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	72,440	108,137	144,980	37,365	37,108	43,470	85,608	529,122

TABLE 6

LEGISTATORS RETIREMENT PLAN

DISABILITY RETIREMENTS AS OF JUNE 30, 1997

	YEARS DISABLED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	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

AVERAGE ANNUAL BENEFIT

	YEARS DISABLED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	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	5-9	10-14	15-19	20-24	25+	ALL
All	0	0	0	0	0	0	0	0

Legislators Retirement Fund

Reconciliation Of Members

		Terminated	
	Actives	Deferred Retirement	Other Non-Vested
A. ON JUNE 30, 1996	201	127	7
B. ADDITIONS	27	12	5
C. DELETIONS			
1. Service Retirement	(9)	(11)	0
2. Disability	0	0	0
3. Death	0	(1)	(1)
4. Terminated - Deferred	(12)	0	0
5. Terminated - Refund	(4)	1	0
6. Terminated - Other Non-Vested	(5)	0	0
7. Returned as Active	3	(2)	(1)
8. Transferred to Other Fund	0	0	0
D. DATA ADJUSTMENTS	0	2	0
Vested	102		
Non-Vested	99		
E. TOTAL ON JUNE 30, 1997	201	128	10

	Recipients		
	Retirement Annuitants	Disabled	Survivors
A. ON JUNE 30, 1996	163	0	65
B. ADDITIONS	20	0	5
C. DELETIONS			
1. Service Retirement	0	0	0
2. Death	(4)	0	(2)
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	0
D. DATA ADJUSTMENTS	2	0	(2)
E. TOTAL ON JUNE 30, 1997	181	0	66

Legislators Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 1997

A.	CURRENT ASSETS (TABLE 1, E6)			$25,678
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			$0
	2. Present Value of Future Normal Costs			9,567
	3. Total Expected Future Assets			$9,567
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$35,245
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	1. Benefit Recipients			
	a. Retirement Annuities		$24,481	$24,481
	b. Disability Benefits		0	0
	c. Surviving Spouse and Child Benefits		4,942	4,942
	2. Deferred Retirements with Future Augmentation		13,436	13,436
	3. Former Members without Vested Rights		96	96
	4. Active Members			
	a. Retirement Annuities	1,367	10,841	12,208
	b. Disability Benefits	0	0	0
	c. Survivor's Benefits	194	0	194
	d. Deferred Retirements	310	1,424	1,734
	e. Refund Liability Due to Death or Withdrawal	0	127	127
	5. Total Current Benefit Obligations	$1,871	$55,347	$57,218
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			$12,404
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$69,622
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			$31,540
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			$34,377

Legislators Retirement Fund

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

(dollars in thousands)

JULY 1, 1997

	Actuarial Present Value of Projected Benefits (1)	Actuarial Present Value of Future Normal Costs (2)	Actuarial Accrued Liability (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	$22,609	$6,834	$15,775
b. Disability Benefits	0	0	0
c. Survivor's Benefit	364	196	168
d. Deferred Retirements	3,399	1,766	1,633
e. Refunds Due to Death or Withdrawal	295	771	(476)
f. Total	$26,667	$9,567	$17,100
2. Deferred Retirements With Future Augmentation	13,436		13,436
3. Former Members Without Vested Rights	96		96
4. Annuitants in MPRIF	21,208		21,208
5. Recipients Not in MPRIF	8,215		8,215
6. Total	$69,622	$9,567	$60,055

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$60,055
2. Current Assets (Table 1, E6)	25,678
3. UAAL (B1-B2)	$34,377
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020	$119,816
2. Supplemental Contribution Rate (B3/C1)	28.69%

Note: If non-segregated member reserves were not counted as assets, the UAAL would be $40,829, resulting in a Supplemental Contribution Rate of 34.08%.

Legislators Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

A. UAAL AT BEGINNING OF YEAR	$31,693
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	$1,569
2. Contribution	(3,875)
3. Interest on A, B1 and B2	2,596
4. Total (B1+B2+B3)	$290
C. EXPECTED UAAL AT END OF YEAR (A+B4)	$31,983
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	($486)
2. Investment Return	468
3. MPRIF Mortality	(1,342)
4. Mortality of Other Benefit Recipients	488
5. Other Items	3,051
6. Total	$2,179
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	$34,162
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	0
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	215
H. UAAL AT END OF YEAR (E+F+G)	$34,377

Legislators Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1997

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 3A		
1. Employee Contributions	9.00%	$686
2. Employer Contributions	0.00%	0
3. Total	9.00%	$686

* 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.

	Percent of Payroll	Dollar Amount
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	14.36%	$1,095
b. Disability benefits	0.00%	0
c. Survivors	0.37%	28
d. Deferred Retirement Benefits	2.82%	215
e. Refunds Due to Death or Withdrawal	1.38%	105
f. Total	18.93%	$1,443
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	28.69%	2,188
3. Allowance for Expenses	0.41%	31
4. Total	48.03%	$3,662
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	-39.03%	($2,976)

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1997 is $7,626.

The deficiency amount shown above is calculated based on reported assets which include a receivable of 6,452 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 44.42%.

Legislators Retirement Fund

Summary of Actuarial Assumptions and Methods

GENERAL

Interest: **Pre-Retirement**: 8.5% per annum
Post-Retirement: 5.0% per annum

Salary Increases: 5.0% annually, 6.5% in prior valuation

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 - 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.

Year	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.
***Special Consideration*:**	Participants with less than one year of service are assumed to receive the statutory salary ($29,657) plus $4,800 in per diem payments for regular and special sessions. This is based on $48 per day times an average session of 100 days.
***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, 6.5% in the prior valuation.

Legislators Retirement Fund

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 and Before 7/1/97	- 2.5%
After 6/30/97	- 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

1. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings with a corresponding increase in the benefit level made at the time of retirement.

Legislators 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	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%

TABLE 15

Legislators 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	32.62%	7,078	637	1,672	1,889	112.98%
1992	27.67%	6,556	590	1,224	601	49.10%
1993	30.49%	7,322	659	1,573	2,284	145.20%
1994	31.12%	6,589	593	1,457	1,618	111.05%
1995	38.34%	7,056	635	2,070	2,938	141.93%
1996	41.54%	6,267	564	2,039	1,511	74.10%
1997	43.96%	7,767	699	2,715	3,176	116.98%

* Includes contributions from other sources (if applicable).

Elective State Officers Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 1997

MILLIMAN & ROBERTSON, INC.

MILLIMAN & ROBERTSON, INC.
Actuaries & Consultants

Internationally WOODROW MILLIMAN

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December 3, 1997

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, 1997.

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

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

Elective State Officers Retirement Fund

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Elective State Officers Retirement Fund

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(Continued)

Elective State Officers Retirement Fund

Report Highlights

(dollars in thousands)

	07/01/96 Valuation	07/01/97 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 352C % of Payroll	9.00%	9.00%
2. Required Contributions - Chapter 356 % of Payroll	43.49%	51.07%
3. Sufficiency (Deficiency): (A.1. - A.2.)	-34.49%	-42.07%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$412	$456
b. Current Benefit Obligations (Table 8)	$2,843	$3,071
c. Funding Ratio: (a/b)	14.49%	14.85%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$412	$456
b. Actuarial Accrued Liability (Table 9)	$2,983	$3,214
c. Funding Ratio: (a/b)	13.81%	14.19%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$633	$639
b. Current and Expected Future Benefit Obligations	$3,204	$3,397
c. Funding Ratio: (a/b)	19.76%	18.81%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	6	6
b. Projected Annual Earnings	$475	$483
c. Average Annual Earnings (Actual $)	$79,167	$80,469
d. Average Age	53.0	54.0
e. Average Service	11.3	12.3
2. Others		
a. Service Retirements (Table 4)	5	5
b. Survivors (Table 5)	7	6
c. Disability Retirements (Table 6)	0	0
d. Deferred Retirements (Table 7)	4	4
e. Terminated Other Non-vested (Table 7)	0	0
f. Total	16	15

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 14.85%. The corresponding ratio for the prior year was 14.49%.
- ° 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 1997 the ratio is 14.19%, which is an increase from the 1996 value of 13.81%.
- ° The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 18.81% 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 have been added to fulfill the new requirements of Statement No. 25. For this transition year only, disclosure in accordance with Statement No. 5 is shown below as of JULY 1, 1997:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	$1,632,000
Current Employees	
Accumulated employee contributions including allocated investment income	$645,000
Employer-financed vested	765,000
Employer-financed nonvested	29,000
Total Pension Benefit Obligation	$3,071,000
Net Assets Available for Benefits at Cost	$456,000
Total Benefit Obligation less Assets	$2,615,000
Funded Ratio	14.85%

Actuarial Cost Method (Table 9)

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

A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) illustrates the two techniques for allocating liabilities of active Members to past and future. As noted in the prior section, the balance sheet allocates benefits and the corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll. Both approaches, however, calculate the value of all future benefits the same way (see line F of Table 8 and line A6, column 1, of Table 9).

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

The payments will increase 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.

Sources of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

- 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 Rate is 9.00% compared to the Required Contribution Rate of 51.07%.

Changes in Actuarial Assumptions

Assumptions were changed this year as summarized below:

	ASSUMPTION CHANGED FROM	TO
Salary Increase:	Level 6.5%	Level 5.0%
Payroll Growth:	6.5%	5.0%
Annuitant Mortality:	M: 1971 GAM M F: 1971 GAM M (-8)	M: 1983 GAM M F: 1983 GAM F
Active Mortality:	M:1971 GAM M F:1971 GAM M(-8)	M:1983GAM M (-4) F:1983 GAM F(-2)

Changes in Plan Provisions

This valuation reflects the new plan provisions which became effective July 1, 1997. Substantive provisions of that legislation included:

1. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings, with a corresponding increase in the benefit level made at the time of retirement.

Elective State Officers Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1997

	Market Value	Cost Value
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-term Securities	$0	$0
2. Fixed Income	0	0
3. Equity	0	0
4. Real Estate	0	0
5. Equity in MPRIF	0	0
6. Other	459	459
Subtotal	$459	$459
B. ASSETS RECEIVABLE	2	2
C. LIABILITIES	(5)	(5)
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	0	0
2. Member Reserves	455	455
3. Other Non-MPRIF Reserves	1	1
4. Total Assets Available for Benefits	$456	$456

E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS

1. Cost Value of Assets Available for Benefits (D4)		$456
2. Market Value (D4)	$456	
3. Cost Value (D4)	456	
4. Market Over Cost: (E2-E3)	$0	
5. One-third of Market Over Cost: (E4)/3		0
6. Actuarial Value of Assets (E1+E5) (Same as "Current Assets")		$456

Elective State Officers Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

	Market Value	Cost Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$413	$413
B. ADDITIONS		
1. Member Contributions	$42	$42
2. Employer Contributions	167	167
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)	(1)	0
d. Investment Expenses	0	0
Net Subtotal	(1)	0
6. Other	0	0
7. Total Additions	$208	$208
C. OPERATING EXPENSES		
1. Service Retirements paid from MPRIF	$0	$0
2. Service Retirements paid from plan assets	160	160
2. Disability Benefits	0	0
3. Survivor Benefits	0	0
4. Refunds	0	0
6. Administrative Expenses	5	5
7. Other	0	0
8. Total Disbursements	$165	$165
D. OTHER CHANGES IN RESERVES	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	$456	$456

ELECTIVE STATE OFFICERS RETIREMENT PLAN

ACTIVE MEMBERS AS OF JUNE 30, 1997

Years of Service

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	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	1	0	0	0	0	0	0	1
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	1	0	0	0	0	0	0	1
55-59	0	0	0	2	0	0	0	0	2
60-64	0	0	0	0	1	1	0	0	2
65+	0	0	0	0	0	0	0	0	0
ALL	0	2	0	2	1	1	0	0	6

AVERAGE ANNUAL EARNINGS

Years of Service

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	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	68,453	0	0	0	0	0	0	68,453
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	62,733	0	0	0	0	0	0	62,733
55-59	0	0	0	75,920	0	0	0	0	75,920
60-64	0	0	0	0	114,068	62,733	0	0	88,401
65+	0	0	0	0	0	0	0	0	0
ALL	0	65,593	0	75,920	114,068	62,733	0	0	76,638

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

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
All	0	131,186	0	151,840	114,068	62,733	0	0	459,828

ELECTIVE STATE OFFICERS RETIREMENT PLAN

SERVICE RETIREMENTS AS OF JUNE 30, 1997

YEARS RETIRED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	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	1	0	0	0	0	0	1
65-69	0	1	2	0	0	0	0	3
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	1	0	1
ALL	0	2	2	0	0	1	0	5

AVERAGE ANNUAL BENEFIT

YEARS RETIRED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	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	4,845	0	0	0	0	0	4,845
65-69	0	2,186	21,273	0	0	0	0	14,911
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	21,449	0	21,449
ALL	0	3,516	21,273	0	0	21,449	0	14,205

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS RETIRED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	0	7,032	42,546	0	0	21,449	0	71,025

ELECTIVE STATE OFFICERS RETIREMENT PLAN

SURVIVORS AS OF JUNE 30, 1997

	YEARS DEATH							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	1	0	0	0	0	0	1
60-64	0	0	0	0	0	0	0	0
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	1	1	0	0	2	0	4
85+	0	0	0	0	0	0	0	0
ALL	0	3	1	0	0	2	0	6

AVERAGE ANNUAL BENEFIT

	YEARS DEATH							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	4,845	0	0	0	0	0	4,845
60-64	0	0	0	0	0	0	0	0
65-69	0	27,924	0	0	0	0	0	27,924
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	0	0
80-84	0	13,081	24,153	0	0	13,371	0	15,994
85+	0	0	0	0	0	0	0	0
ALL	0	15,283	24,153	0	0	13,371	0	16,124

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DEATH

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	0	45,849	24,153	0	0	26,742	0	96,744

ELECTIVE STATE OFFICERS RETIREMENT PLAN

DISABILITY RETIREMENTS AS OF JUNE 30, 1997

	YEARS DISABLED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	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

AVERAGE ANNUAL BENEFIT

	YEARS DISABLED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	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	5-9	10-14	15-19	20-24	25+	ALL
All	0	0	0	0	0	0	0	0

Elective State Officers Retirement Fund

Reconciliation Of Members

	Actives	Terminated: Deferred Retirement	Terminated: Other Non-Vested
A. ON JUNE 30, 1996	6	4	0
B. ADDITIONS	0	0	0
C. DELETIONS			
1. Service Retirement	0	0	0
2. Disability	0	0	0
3. Death	0	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 Other Fund	0	0	0
D. DATA ADJUSTMENTS	0	0	0
Vested	4		
Non-Vested	2		
E. TOTAL ON JUNE 30, 1997	6	4	0

	Recipients: Retirement Annuitants	Recipients: Disabled	Recipients: Survivors
A. ON JUNE 30, 1996	5	0	7
B. ADDITIONS	0	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, 1997	5	0	6

Elective State Officers Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 1997

		Non-Vested	Vested	Total
A.	CURRENT ASSETS (TABLE 1, E6)			$456
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			$0
	2. Present Value of Future Normal Costs			183
	3. Total Expected Future Assets			$183
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$639
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	1. Benefit Recipients			
	a. Retirement Annuities		$570	$570
	b. Disability Benefits		0	0
	c. Surviving Spouse and Child Benefits		798	798
	2. Deferred Retirements with Future Augmentation		264	264
	3. Former Members without Vested Rights		0	0
	4. Active Members			
	a. Retirement Annuities	9	1,194	1,203
	b. Disability Benefits	0	0	0
	c. Survivor's Benefits	8	0	8
	d. Deferred Retirements	12	195	207
	e. Refund Liability Due to Death or Withdrawal	0	21	21
	5. Total Current Benefit Obligations	$29	$3,042	$3,071
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			$326
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$3,397
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			$2,615
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			$2,758

Elective State Officers Retirement Fund

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

(dollars in thousands)

JULY 1, 1997

	Actuarial Present Value of Projected Benefits (1)	Actuarial Present Value of Future Normal Costs (2)	Actuarial Accrued Liability (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	$1,436	$50	$1,386
b. Disability Benefits	0	0	0
c. Survivor's Benefit	10	3	7
d. Deferred Retirements	277	84	193
e. Refunds Due to Death or Withdrawal	42	46	(4)
f. Total	$1,765	$183	$1,582
2. Deferred Retirements With Future Augmentation	264		264
3. Former Members Without Vested Rights	0		0
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	1,368		1,368
6. Total	$3,397	$183	$3,214

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$3,214
2. Current Assets (Table 1, E6)	456
3. UAAL (B1-B2)	$2,758
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020	$7,586
2. Supplemental Contribution Rate (B3/C1)	36.36%

Note: If non-segregated member reserves were not counted as assets, the UAAL would be $3,217, resulting in a Supplemental Contribution Rate of 42.41%.

Elective State Officers Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

A.	UAAL AT BEGINNING OF YEAR	$2,571
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	1. Normal Cost and Expenses	$69
	2. Contribution	(209)
	3. Interest on A, B1 and B2	213
	4. Total (B1+B2+B3)	$73
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	$2,644
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	1. Salary Increases	($98)
	2. Investment Return	37
	3. MPRIF Mortality	0
	4. Mortality of Other Benefit Recipients	371
	5. Other Items	(310)
	6. Total	$0
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	$2,644
F.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	0
G.	CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	114
H.	UAAL AT END OF YEAR (E+F+G)	$2,758

Elective State Officers Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1997

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 352C		
1. Employee Contributions	9.00%	$43
2. Employer Contributions	0.00%	0
3. Total	9.00%	$43

* 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.

	Percent of Payroll	Dollar Amount
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	3.73%	$18
b. Disability benefits	0.00%	0
c. Survivors	0.21%	1
d. Deferred Retirement Benefits	6.42%	31
e. Refunds Due to Death or Withdrawal	3.31%	16
f. Total	13.67%	$66
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	36.36%	176
3. Allowance for Expenses	1.04%	5
4. Total	51.07%	$247
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	-42.07%	($204)

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1997 is $483.

The deficiency amount shown above is calculated based on reported assets which include a receivable of 459 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 48.12%.

Elective State Officers Retirement Fund

Summary of Actuarial Assumptions and Methods

Interest: **Pre-Retirement**: 8.5% per annum

Post-Retirement: 5.0% per annum

Salary Increases: 5.0% annually, 6.5% in prior valuation

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 -	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:

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, 6.5% in prior valuation.

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 commencement 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 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 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

1. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings with a corresponding increase in the benefit level made at the time of retirement.

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%

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
1991	34.84%	422	38	109	40	36.70%
1992	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%

* Includes contributions from other sources (if applicable).

Judges Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 1997

MILLIMAN & ROBERTSON, INC.

MILLIMAN & ROBERTSON, INC.
Actuaries & Consultants

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December 3, 1997

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, 1997.

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

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

Judges Retirement Fund

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Judges Retirement Fund

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(Continued)

Report Highlights
(dollars in thousands)

	07/01/96 Valuation	07/01/97 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 490 % of Payroll	28.36%	28.29%
2. Required Contributions - Chapter 356 % of Payroll	27.01%	27.60%
3. Sufficiency (Deficiency): (A.1. - A.2.)	1.35%	0.69%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$64,851	$74,680
b. Current Benefit Obligations (Table 8)	$104,517	$112,362
c. Funding Ratio: (a/b)	62.05%	66.46%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$64,851	$74,680
b. Actuarial Accrued Liability (Table 9)	$108,150	$117,714
c. Funding Ratio: (a/b)	59.96%	63.44%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$158,805	$157,082
b. Current and Expected Future Benefit Obligations	$152,679	$154,421
c. Funding Ratio: (a/b)	104.01%	101.72%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	280	279
b. Projected Annual Earnings	$24,206	$24,420
c. Average Annual Earnings (Actual $)	$86,450	$87,526
d. Average Age	53.6	53.6
e. Average Service	10.9	10.5
2. Others		
a. Service Retirements (Table 4)	133	142
b. Survivors (Table 5)	75	79
c. Disability Retirements (Table 6)	7	6
d. Deferred Retirements (Table 7)	5	7
e. Terminated Other Non-vested (Table 7)	0	1
f. Total	220	235

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 66.46%. The corresponding ratio for the prior year was 62.05%.

- 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 1997 the ratio is 63.44%, which is an increase from the 1996 value of 59.96%.

- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 101.72% 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 have been added to fulfill the new requirements of Statement No. 25. For this transition year only, disclosure in accordance with Statement No. 5 is shown below as of JULY 1, 1997:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	$70,860,000
Current Employees	
Accumulated employee contributions including allocated investment income	$18,548,000
Employer-financed vested	16,716,000
Employer-financed nonvested	6,238,000
Total Pension Benefit Obligation	$112,362,000
Net Assets Available for Benefits at Cost	$74,123,000
Total Benefit Obligation less Assets	$38,239,000
Funded Ratio	65.97%

Actuarial Cost Method (Table 9)

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

A comparison of this actuarial method (Table 9) to the actuarial balance sheet (Table 8) illustrates the two techniques for allocating liabilities of active Members to past and future. As noted in the prior section, the balance sheet allocates benefits and the corresponding liabilities, on the basis of service. The method used in Table 9 allocates liabilities so that the cost each year will be a constant percentage of payroll. Both approaches, however, calculate the value of all future benefits the same way (see line F of Table 8 and line A6, column 1, of Table 9).

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

The payments will increase 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.

Sources of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

- 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 28.29% compared to the Required Contribution Rate of 27.60%.

Changes in Actuarial Assumptions

Assumptions were changed this year as summarized below:

	ASSUMPTION CHANGED FROM	TO
Salary Increase:	Level 6.5%	Level 5.0%
Payroll Growth:	6.5%	5.0%
Annuitant Mortality:	M: 1971 GAM M F: 1971 GAM M (-8)	M: 1983 GAM M F: 1983 GAM F
Disabled Mortality:	Same as annuitant	Combined Annuity Mortality Table
Active Mortality:	M:1971 GAM M F:1971 GAM M(-8)	M:1983 GAM M(-4) F:1983 GAM F(-2)
Retirement Age:	100% at age 68	Age-related table

Changes in Plan Provisions

This valuation reflects the new plan provisions which became effective July 1, 1997. Substantive provisions of that legislation included:

1. Increase in the benefit rate factor by 0.20%.
2. Increase in the maximum benefit to 70% of salary for the 12 months preceding retirement.
3. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings with corresponding benefit increases for Members who do not receive the new benefit rates in (1.)

Judges Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 1997

		Market Value	Cost Value
A.	ASSETS IN TRUST		
	1. Cash, Equivalents, Short-term Securities	$1,229	$1,229
	2. Fixed Income	4,323	4,291
	3. Equity	14,231	12,565
	4. Real Estate	662	690
	5. Equity in MPRIF	58,072	58,072
	6. Other	0	0
	Subtotal	$78,517	$76,847
B.	ASSETS RECEIVABLE	154	154
C.	LIABILITIES	(2,878)	(2,878)
D.	NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
	1. MPRIF Reserves	58,072	58,072
	2. Member Reserves	10,070	10,070
	3. Other Non-MPRIF Reserves	7,651	5,981
	4. Total Assets Available for Benefits	$75,793	$74,123

E.	DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
	1. Cost Value of Assets Available for Benefits (D4)		$74,123
	2. Market Value (D4)	$75,793	
	3. Cost Value (D4)	74,123	
	4. Market Over Cost: (E2-E3)	$1,670	
	5. One-third of Market Over Cost: (E4)/3		557
	6. Actuarial Value of Assets (E1+E5) (Same as "Current Assets")		$74,680

Judges Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

	Market Value	Cost Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$65,523	$64,514
B. ADDITIONS		
1. Member Contributions	$1,457	$1,457
2. Employer Contributions	6,632	6,632
3. Contributions From Other Sources	0	0
4. MPRIF Income	6,246	6,246
5. Net Investment Income		
a. Interest and Dividends	1,839	1,839
b. Net Realized Gain (Loss)	1,084	1,084
c. Net Change in Unrealized Gain (Loss)	660	0
d. Investment Expenses	(26)	(26)
Net Subtotal	3,557	2,897
6. Other	10	10
7. Total Additions	$17,902	$17,241
C. OPERATING EXPENSES		
1. Service Retirements paid from MPRIF	$7,560	$7,560
2. Service Retirements paid from plan assets	0	0
2. Disability Benefits	0	0
3. Survivor Benefits	0	0
4. Refunds	0	0
6. Administrative Expenses	33	33
7. Other	39	39
8. Total Disbursements	$7,632	$7,632
D. OTHER CHANGES IN RESERVES	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	$75,793	$74,123

JUDGES RETIREMENT FUND

ACTIVE MEMBERS AS OF JUNE 30, 1997

	Years of Service								
Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	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	1	5	0	0	0	0	0	0	6
40-44	1	12	6	0	0	0	0	0	19
45-49	5	18	23	9	3	0	0	0	58
50-54	3	11	25	27	6	2	0	0	74
55-59	6	6	13	16	10	9	3	0	63
60-64	1	3	3	6	3	12	4	1	33
65+	0	0	8	6	5	3	3	1	26
ALL	17	55	78	64	27	26	10	2	279

AVERAGE ANNUAL EARNINGS

	Years of Service								
Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	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	71,809	83,495	0	0	0	0	0	0	81,547
40-44	82,857	83,699	84,403	0	0	0	0	0	83,877
45-49	90,282	83,727	78,954	83,955	79,352	0	0	0	82,208
50-54	89,693	85,524	84,098	83,666	84,403	83,495	0	0	84,388
55-59	84,233	84,403	87,992	84,278	83,914	85,028	83,495	0	85,064
60-64	1,200	87,128	83,495	84,190	83,528	84,856	63,321	83,495	79,510
65+	0	0	86,718	84,495	87,205	83,495	85,311	83,495	85,641
ALL	81,280	84,319	83,499	83,987	84,082	84,654	75,970	83,495	83,531

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

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
All	1,381	4,637	6,512	5,375	2,270	2,201	759	166	23,305

TABLE 4

JUDGES RETIREMENT FUND

SERVICE RETIREMENTS AS OF JUNE 30, 1997

	YEARS RETIRED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	1	0	0	0	0	0	1
60-64	1	2	0	0	0	0	0	3
65-69	8	16	2	0	0	0	0	26
70-74	4	17	22	3	0	0	0	46
75-79	0	1	16	10	1	0	0	28
80-84	0	0	0	15	8	1	0	24
85+	0	0	0	1	8	4	1	14
ALL	13	37	40	29	17	5	1	142

AVERAGE ANNUAL BENEFIT

	YEARS RETIRED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	0	38,353	0	0	0	0	0	38,353
60-64	51,079	36,604	0	0	0	0	0	41,429
65-69	46,645	40,618	45,981	0	0	0	0	42,885
70-74	34,211	45,584	42,314	30,929	0	0	0	42,075
75-79	0	78,210	40,661	37,843	34,041	0	0	40,759
80-84	0	0	0	45,410	49,652	38,266	0	46,526
85+	0	0	0	71,509	40,307	39,523	47,841	42,850
ALL	43,160	43,638	41,836	42,203	44,336	39,272	47,841	42,753

TOTAL ANNUAL BENEFIT (IN THOUSANDS) BY YEARS RETIRED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	561	1,614	1,673	1,223	753	196	47	6,070

JUDGES RETIREMENT FUND

SURVIVORS AS OF JUNE 30, 1997

	YEARS DEATH							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	1	0	2	0	0	0	3
50-54	0	0	1	1	0	0	0	2
55-59	2	0	1	0	0	0	0	3
60-64	0	0	0	1	0	0	0	1
65-69	2	5	2	0	0	0	0	9
70-74	1	4	3	3	1	4	1	17
75-79	0	2	3	1	0	1	1	8
80-84	1	4	1	0	2	3	1	12
85+	0	1	4	0	1	8	10	24
ALL	6	17	15	8	4	16	13	79

AVERAGE ANNUAL BENEFIT

	YEARS DEATH							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
<50	0	27,213	0	29,841	0	0	0	28,965
50-54	0	0	25,710	44,370	0	0	0	35,040
55-59	27,604	0	25,503	0	0	0	0	26,904
60-64	0	0	0	24,096	0	0	0	24,096
65-69	20,596	24,879	18,630	0	0	0	0	22,539
70-74	43,987	23,155	32,283	29,167	28,030	14,334	25,109	25,378
75-79	0	35,007	27,494	37,094	0	8,085	49,111	30,848
80-84	33,508	21,286	24,470	0	30,273	21,240	24,486	24,323
85+	0	16,047	20,810	0	10,575	24,594	18,091	20,314
ALL	28,983	24,437	25,034	31,593	24,788	20,368	21,509	24,332

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DEATH

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	173	415	375	252	99	325	279	1,922

JUDGES RETIREMENT FUND

DISABILITY RETIREMENTS AS OF JUNE 30, 1997

	YEARS DISABLED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	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	1	1	0	1	0	3
75-79	0	0	0	1	0	0	0	1
80-84	0	0	0	2	0	0	0	2
85+	0	0	0	0	0	0	0	0
ALL	0	0	1	4	0	1	0	6

AVERAGE ANNUAL BENEFIT

	YEARS DISABLED							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	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	42,881	52,493	0	36,592	0	43,989
75-79	0	0	0	71,130	0	0	0	71,130
80-84	0	0	0	35,242	0	0	0	35,242
85+	0	0	0	0	0	0	0	0
ALL	0	0	42,881	48,527	0	36,592	0	45,597

TOTAL ANNUAL BENEFIT (ACTUAL DOLLARS) BY YEARS DISABLED

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	ALL
All	0	0	42,881	194,108	0	36,592	0	273,582

Judges Retirement Fund

Reconciliation Of Members

	Actives	Terminated: Deferred Retirement	Terminated: Other Non-Vested
A. ON JUNE 30, 1996	280	5	0
B. ADDITIONS	19	2	1
C. DELETIONS			
1. Service Retirement	(13)	0	0
2. Disability	0	0	0
3. Death	(2)	0	0
4. Terminated - Deferred	(2)	0	0
5. Terminated - Refund	0	0	0
6. Terminated - Other Non-Vested	(1)	0	0
7. Returned as Active	0	0	0
8. Transferred to Other Fund	0	0	0
D. DATA ADJUSTMENTS	(2)	0	0
Vested	206		
Non-Vested	73		
E. TOTAL ON JUNE 30, 1997	279	7	1

	Recipients: Retirement Annuitants	Recipients: Disabled	Recipients: Survivors
A. ON JUNE 30, 1996	133	7	75
B. ADDITIONS	13	0	6
C. DELETIONS			
1. Service Retirement	0	0	0
2. Death	(5)	(1)	(2)
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	0
D. DATA ADJUSTMENTS	1	0	0
E. TOTAL ON JUNE 30, 1997	142	6	79

Judges Retirement Fund

Actuarial Balance Sheet
(dollars in thousands)

JULY 1, 1997

		Non-Vested	Vested	Total
A.	CURRENT ASSETS (TABLE 1, E6)			$74,680
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			$45,695
	2. Present Value of Future Normal Costs			36,707
	3. Total Expected Future Assets			$82,402
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$157,082
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	1. Benefit Recipients			
	a. Retirement Annuities		$51,691	$51,691
	b. Disability Benefits		2,327	2,327
	c. Surviving Spouse and Child Benefits		15,890	15,890
	2. Deferred Retirements with Future Augmentation		939	939
	3. Former Members without Vested Rights		13	13
	4. Active Members			
	a. Retirement Annuities	1,778	35,031	36,809
	b. Disability Benefits	2,450	0	2,450
	c. Survivor's Benefits	2,010	0	2,010
	d. Deferred Retirements	0	0	0
	e. Refund Liability Due to Death or Withdrawal	0	233	233
	5. Total Current Benefit Obligations	$6,238	$106,124	$112,362
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			$42,059
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$154,421
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			$37,682
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			($2,661)

Judges Retirement Fund

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

(dollars in thousands)

JULY 1, 1997

	Actuarial Present Value of Projected Benefits (1)	Actuarial Present Value of Future Normal Costs (2)	Actuarial Accrued Liability (3)=(1)-(2)
A. DETERMINATION OF ACTUARIAL ACCRUED LIABILITY (AAL)			
1. Active Members			
a. Retirement Annuities	$74,828	$31,965	$42,863
b. Disability Benefits	4,543	2,422	2,121
c. Survivor's Benefit	3,793	2,116	1,677
d. Deferred Retirements	0	0	0
e. Refunds Due to Death or Withdrawal	397	204	193
f. Total	$83,561	$36,707	$46,854
2. Deferred Retirements With Future Augmentation	939		939
3. Former Members Without Vested Rights	13		13
4. Annuitants in MPRIF	58,072		58,072
5. Recipients Not in MPRIF	11,836		11,836
6. Total	$154,421	$36,707	$117,714

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$117,714
2. Current Assets (Table 1, E6)	74,680
3. UAAL (B1-B2)	$43,034
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020	$383,672
2. Supplemental Contribution Rate (B3/C1)	11.22%

Judges Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 1997

A. UAAL AT BEGINNING OF YEAR	$43,299
B. CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
1. Normal Cost and Expenses	$4,219
2. Contribution	(8,089)
3. Interest on A, B1 and B2	3,516
4. Total (B1+B2+B3)	($354)
C. EXPECTED UAAL AT END OF YEAR (A+B4)	$42,945
D. INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
1. Salary Increases	($3,678)
2. Investment Return	(1,807)
3. MPRIF Mortality	(1,785)
4. Mortality of Other Benefit Recipients	325
5. Other Items	3,435
6. Total	($3,510)
E. UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	$39,435
F. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO PLAN AMENDMENTS	1,144
G. CHANGE IN ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	2,455
H. UAAL AT END OF YEAR (E+F+G)	$43,034

Judges Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 1997

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 490		
1. Employee Contributions	6.29%	$1,536
2. Employer Contributions	22.00%	5,372
3. Total	28.29%	$6,908
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	14.21%	$3,471
b. Disability benefits	1.00%	243
c. Survivors	0.92%	225
d. Deferred Retirement Benefits	0.00%	0
e. Refunds Due to Death or Withdrawal	0.11%	26
f. Total	16.24%	$3,965
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	11.22%	2,740
3. Allowance for Expenses	0.14%	34
4. Total	27.60%	$6,739
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	0.69%	$169

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 1997 is $24,420.

Judges Retirement Fund

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:	**Pre-Retirement**: 8.5% per annum **Post-Retirement**: 6.0% per annum, 5.0% in prior valuation
Salary Increases:	5% annually, 6.5% in prior valuation
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
Retirement Age:	Age-related table as follows: Ages: 62-64 10% 65-67 20 68-70 30 71+ 100 These assumptions represent a change from the prior year's assumption.
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, 6.5% in prior valuation.

Judges Retirement Fund

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Death		Withdrawal		Disability		Retirement	
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
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

Judges Retirement Fund

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Death		Withdrawal		Disability		Retirement	
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
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

Judges Retirement Fund

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 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.

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:

1. Increase in the benefit rate factor by 0.20%.
2. Increase in the maximum benefit to 70% of salary for the 12 months preceding retirement.
3. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings with corresponding benefit increases for Members who do not receive the new benefit rates in (1).

Judges Retirement Fund

Summary of Plan Provisions

GENERAL

Eligibility:	A judge or justice of any court who is covered under the Social Security Act.
Contributions:	
Member:	6.27% of salary. (Amended 1992)
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:

- 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. 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:

1. Increase in the benefit rate factor by 0.20%.

2. Increase in the maximum benefit to 70% of salary for the 12 months preceding retirement.

3. Post-retirement benefit increases now paid in excess of 6% rather than 5% of earnings with corresponding benefit increases for Members who do not receive the new benefit rates in (1).

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%

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
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%

* Includes contributions from other sources (if applicable).