Annual Valuation Report

for

MSRS Minnesota State Retirement System

A MILLIMAN GLOBAL FIRM

Milliman USA
Consultants and Actuaries

July 1, 2001

State Employees Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 2001

MILLIMAN USA

A MILLIMAN GLOBAL FIRM

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December 7, 2001

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, 2001.

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.

We, Thomas K. Custis and William V. Hogan, are actuaries for Milliman USA. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Milliman USA

Thomas K. Custis

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

William V. Hogan

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Consulting Actuary

TKC/WVH/bh

State Employees Retirement Fund

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State Employees Retirement Fund

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Report Highlights
(dollars in thousands)

	07/01/2000 Valuation	07/01/2001 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 352 % of Payroll	8.00%	8.00%
2. Required Contributions - Chapter 356 % of Payroll	7.12%	6.79%
3. Sufficiency (Deficiency): (A.1. - A.2.)	0.88%	1.21%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$6,744,165	$7,366,673
b. Current Benefit Obligations (Table 8)	$5,658,602	$6,116,079
c. Funding Ratio: (a/b)	119.18%	120.45%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$6,744,165	$7,366,673
b. Actuarial Accrued Liability (Table 9)	$6,105,703	$6,573,193
c. Funding Ratio: (a/b)	110.46%	112.07%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$7,970,626	$8,615,702
b. Current and Expected Future Benefit Obligations	$7,660,383	$8,173,098
c. Funding Ratio: (a/b)	104.05%	105.42%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	47,920	49,229
b. Projected Annual Earnings	$1,900,124	$1,967,814
c. Average Annual Earnings (Projected $)	$39,652	$39,973
d. Average Age	44.3	44.4
e. Average Service	11.7	11.5
2. Others		
a. Service Retirements (Table 4)	16,276	16,766
b. Survivors (Table 5)	1,955	2,085
c. Disability Retirements (Table 6)	1,070	1,127
d. Deferred Retirements (Table 7)	11,125	11,452
e. Terminated Other Non-vested (Table 7)	7,772	8,111
f. Total	38,198	39,541

Commentary

Purpose

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

Report Highlights

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

- The Accrued Benefit Funding Ratio is a measure of current funding status and, when viewed over a period of years, presents a view of the funding progress. It is based upon benefits which have been earned by service to the valuation date. This year's ratio is 120.45%. The corresponding ratio for the prior year was 119.18%.
- 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 2001 the ratio is 112.07%, which is an increase from the 2000 value of 110.46%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 105.42% shows that the current statutory contributions are adequate.

Asset Information (Tables 1 and 2)

Effective with the July 1, 2000 valuation of the fund, Minnesota Statutes require that the asset value used for actuarial purposes spread differences between actual return (measured on a market-value basis) and expected return on non-MPRIF assets over five years, in a manner similar to that already being used within the MPRIF. The previous method required under Minnesota Statutes recognized one third of the unrealized gains and losses. An Asset Valuation Method requirement exists because market values (which include all unrealized gains and losses) are typically volatile and can produce erratic changes in the contribution requirements from year to year. The intent of the change to the current method is to employ a more effective asset smoothing technique which is market-value based and which eliminates artificial bias related to manager style. The effective date of this requirement is July 1, 2000 with full transition to be accomplished as of July 1, 2003.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines E.1 to E.4. Actuarial Value of Assets is determined as:

> Market Value of Assets at June 30, 2001, *less*
>
> 80% of the current year Unrecognized Asset Return at July 1, 2001 (the difference between actual net return on Market Value of Assets between 06/30/2000 and 06/30/2001 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 2000 Actuarial Valuation); *less*
>
> 60% of the current year Unrecognized Asset Return at July 1, 2000 (the difference between actual net return on Market Value of Assets between 06/30/99 and 06/30/2000 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 1999 Actuarial Valuation); *less*
>
> 30% of the Unrecognized Asset Return at July 1, 1999 (the difference between Market Value of Assets on 06/30/99 and the Actuarial Value of Assets used in the July 1, 1999 Actuarial Valuation).

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

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

Actuarial Balance Sheet (Table 8)

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

The Current Benefit Obligation used to measure current funding levels is calculated as follows:

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

GASB Disclosure

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

Actuarial Cost Method (Table 9)

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

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

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

Source of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

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

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 8.00% compared to the Required Contribution Rate of 6.77%.

Changes in Actuarial Assumptions and Methods

All actuarial assumptions and methods listed in Table 12 are the same as those used in the prior valuation.

Changes in Plan Provisions

Effective with this July 1, 2001 valuation, the following plan provisions has been amended:

- Effective January 1, 2002, the additional lump sum benefits that are paid to pre-1973 retirees will be paid as monthly installments to the retirees.

All other plan provisions are the same as those used in the prior actuarial valuation of the Fund.

State Employees Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 2001

	Market Value	Cost Value
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-term Securities	$56,862	$56,862
2. Fixed Income	1,013,609	1,023,456
3. Equity	2,962,620	3,190,587
4. Real Estate	158,701	133,862
5. Equity in MPRIF	2,771,952	2,771,952
6. Other	5,743	5,743
Subtotal	$6,969,487	$7,182,462
B. ASSETS RECEIVABLE	10,491	10,491
C. LIABILITIES	(9,213)	(9,213)
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	2,771,952	2,771,952
2. Member Reserves	762,784	762,784
3. Other Non-MPRIF Reserves	3,436,029	3,649,004
4. Total Assets Available for Benefits	$6,970,765	$7,183,740

E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Market Value of Assets Available for Benefits (D4)		$6,970,765
2. Unrecognized Asset Returns (UAR)		
a. June 30, 2001	($721,038)	
b. June 30, 2000	87,707	
c. June 30, 1999	427,661	
3. UAR Adjustment: .80 * (E2.a) + .60 * (E2.b) + .30 * (E2.c)		(395,908)
4. Actuarial Value of Assets (E1 - E3) (Same as "Current Assets")		7,366,673

State Employees Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

	Non-MPRIF Assets	MPRIF Reserve	Market Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$4,608,578	$2,462,349	$7,070,927
B. ADDITIONS			
1. Member Contributions	$74,364	$0	$74,364
2. Employer Contributions	73,362	0	73,362
3. Contributions From Other Sources	0	0	0
4. MPRIF Income	0	372,094	372,094
5. Net Investment Income			
a. Interest and Dividends	296,060	0	296,060
b. Net Realized Gain (Loss)	0	0	0
c. Net Change in Unrealized Gain (Loss)	(629,924)	0	(629,924)
d. Investment Expenses	(6,283)	0	(6,283)
e. **Net Subtotal**	(340,147)	0	(340,147)
6. Other	7,408	0	7,408
7. Total Additions	($185,013)	$372,094	$187,081
C. OPERATING EXPENSES			
1. Service Retirements	$597	$269,961	$270,558
2. Disability Benefits	0	0	0
3. Survivor Benefits	0	0	0
4. Refunds	9,750	0	9,750
5. Administrative Expenses	3,738	0	3,738
6. Other	3,197	0	3,197
7. Total Disbursements	$17,282	$269,961	$287,243
D. OTHER CHANGES IN RESERVES			
1. Annuities Awarded	(211,146)	211,146	0
2. Mortality Gain/Loss	3,676	(3,676)	0
3. Change in MPRIF Assumptions	0	0	0
4. Total Other Changes	(207,470)	207,470	0
E. ASSETS AVAILABLE AT END OF PERIOD	$4,198,813	$2,771,952	$6,970,765

F. DETERMINATION OF CURRENT YEAR UNRECOGNIZED ASSET RETURN

1. Average Balance	
(a) Non-MPRIF Assets Available at Beginning of Period	4,608,578
(b) Non-MPRIF Assets Available at End of Period*	4,195,137
(c) Average Balance { [F1.a + F1.b - B5.e - B6] / 2 }	4,568,227
2. Expected Return: .085 * F1.c	388,299
3. Actual Return	(332,739)
4. Current Year Unrecognized Asset Return: F3 - F2	(721,038)

** Before adjustment for MPRIF mortality gain/loss and new MPRIF assumptions*

State Employees Retirement Fund

Active Members as of June 30, 2001

Age	Years of Service ≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	All
<25	1,222	692	5	0	0	0	0	0	1,919
25-29	1,166	1,976	222	2	0	0	0	0	3,366
30-34	844	2,132	1,065	245	14	0	0	0	4,300
35-39	725	1,851	1,226	1,235	523	65	0	0	5,625
40-44	749	1,764	1,274	1,596	1,312	977	60	0	7,732
45-49	622	1,607	1,211	1,593	1,357	1,621	1,045	62	9,118
50-54	436	1,209	995	1,361	1,104	1,427	1,514	818	8,864
55-59	255	611	537	747	625	789	747	994	5,305
60-64	113	252	279	360	323	331	283	437	2,378
65+	57	100	101	106	72	55	55	76	622
ALL	6,189	12,194	6,915	7,245	5,330	5,265	3,704	2,387	49,229

Average Annual Earnings

Age	Years of Service ≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	All
<25	15,965	24,567	21,429	0	0	0	0	0	19,081
25-29	20,509	28,561	32,805	37,180	0	0	0	0	26,057
30-34	23,249	31,007	36,824	38,779	33,389	0	0	0	31,376
35-39	23,308	33,041	38,491	42,158	39,910	36,056	0	0	35,650
40-44	22,945	33,774	39,439	42,942	43,895	41,774	39,000	0	38,320
45-49	24,235	33,179	40,051	43,105	44,686	44,861	44,419	42,194	40,355
50-54	26,324	34,928	40,094	43,916	44,063	46,792	49,478	47,843	43,190
55-59	22,704	32,797	40,222	43,486	42,970	46,027	50,546	52,142	43,859
60-64	18,071	29,933	39,960	41,449	41,051	42,030	46,106	50,635	41,212
65+	14,989	17,728	32,414	45,046	39,324	40,194	44,048	47,970	35,026
ALL	21,387	31,588	38,823	42,898	43,370	44,651	47,758	50,002	37,768

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	385	268	310	231	235	176	119	1,859

State Employees Retirement Fund

Service Retirements as of June 30, 2001

	Years Retired							
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	7	14	0	0	0	0	0	21
55-59	351	596	12	1	0	0	0	960
60-64	515	1,258	614	8	0	0	0	2,395
65-69	213	1,400	1,440	456	0	0	0	3,509
70-74	33	258	1,633	1,146	217	0	0	3,287
75-79	13	49	340	1,486	925	23	0	2,836
80-84	2	15	60	201	1,242	485	8	2,013
85+	0	0	0	4	161	871	708	1,744
ALL	1,135	3,590	4,099	3,302	2,545	1,379	716	16,766

Average Annual Benefit

	Years Retired							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	16,270	0	0	0	0	0	0	16,270
50-54	3,897	9,608	0	0	0	0	0	7,704
55-59	13,274	11,656	15,657	12,100	0	0	0	12,298
60-64	13,738	13,756	13,497	14,179	0	0	0	13,687
65-69	10,683	13,465	15,120	20,483	0	0	0	14,887
70-74	9,932	10,794	14,404	16,713	21,581	0	0	15,355
75-79	11,847	9,922	14,952	14,115	17,561	15,362	0	15,267
80-84	5,219	6,694	15,550	14,385	14,050	15,374	11,672	14,374
85+	0	0	0	9,529	11,707	11,390	10,346	10,991
ALL	12,815	12,983	14,586	15,907	15,820	12,857	10,361	14,248

Total Annual Benefit (in thousands) by Years Retired

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	14,545	46,608	59,788	52,524	40,261	17,729	7,418	238,881

State Employees Retirement Fund

Survivors as of June 30, 2001

Years Since Death

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	25	56	40	5	2	0	0	128
50-54	12	36	21	4	3	1	0	77
55-59	21	53	38	13	3	0	0	128
60-64	24	69	73	22	9	0	2	199
65-69	29	78	78	44	13	1	0	243
70-74	32	106	94	76	25	9	3	345
75-79	35	99	93	58	64	33	8	390
80-84	21	78	99	49	23	37	17	324
85+	7	33	56	39	8	30	78	251
ALL	206	608	592	310	150	111	108	2,085

Average Annual Benefit

Years Since Death

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	8,467	6,735	6,188	8,781	6,357	0	0	6,976
50-54	8,761	11,440	8,874	4,459	5,747	854	0	9,601
55-59	11,695	12,463	10,002	9,934	10,859	0	0	11,312
60-64	12,974	12,745	12,143	17,701	8,496	0	11,555	12,896
65-69	16,649	14,401	12,899	11,736	10,767	5,894	0	13,475
70-74	16,624	15,802	13,516	14,034	11,866	13,316	6,238	14,433
75-79	15,318	15,725	14,619	10,545	15,204	14,424	7,233	14,285
80-84	13,448	14,471	13,590	13,590	12,145	11,585	8,706	13,205
85+	10,550	11,056	9,517	10,783	16,619	11,922	9,514	10,458
ALL	13,500	13,450	12,187	12,456	13,073	12,513	9,165	12,650

Total Annual Benefit (in thousands) by Years Since Death

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	2,781	8,177	7,214	3,861	1,960	1,388	989	26,375

State Employees Retirement Fund

Disability Retirements as of June 30, 2001

	Years Disabled							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	29	73	49	10	0	0	0	161
50-54	33	63	34	14	3	0	0	147
55-59	29	76	50	16	5	2	0	178
60-64	25	83	87	21	5	1	3	225
65-69	0	27	66	29	7	3	0	132
70-74	0	0	30	44	19	6	2	101
75-79	0	0	0	13	28	35	8	84
80-84	0	0	0	0	7	37	15	59
85+	0	0	0	0	0	17	23	40
ALL	116	322	316	147	74	101	51	1,127

Average Annual Benefit

	Years Disabled							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	7,914	7,687	8,005	4,543	0	0	0	7,629
50-54	10,799	11,083	9,954	11,365	6,638	0	0	10,694
55-59	9,491	11,324	11,941	10,849	9,573	8,320	0	11,073
60-64	9,885	11,521	11,843	10,464	9,805	9,088	5,609	11,237
65-69	0	12,656	11,398	11,823	8,250	8,039	0	11,505
70-74	0	0	9,723	10,511	10,288	10,827	7,453	10,193
75-79	0	0	0	8,092	9,127	10,816	7,891	9,553
80-84	0	0	0	0	9,012	10,905	8,197	9,992
85+	0	0	0	0	0	8,115	7,956	8,024
ALL	9,554	10,615	10,766	10,261	9,306	10,246	7,859	10,258

Total Annual Benefit (in thousands) by Years Disabled

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	1,108	3,418	3,402	1,508	688	1,034	400	11,560

State Employees Retirement Fund

Reconciliation Of Members

		Actives	Terminated: Deferred Retirement	Terminated: Other Non-Vested
A.	ON JUNE 30, 2000	47,920	11,125	7,772
B.	ADDITIONS	6,223	1,026	2,238
C.	DELETIONS			
	1. Service Retirement	(792)	(286)	(3)
	2. Disability	(106)	(21)	(2)
	3. Death	(78)	(17)	(5)
	4. Terminated - Deferred	(1,026)	0	(4)
	5. Terminated - Refund	(1,407)	(208)	(686)
	6. Terminated - Other Non-Vested	(1,857)	(24)	0
	7. Returned as Active	425	(216)	(209)
	8. Transferred to Other Fund	(12)	0	(952)
D.	DATA ADJUSTMENTS	(61)	73	(38)
	Vested	35,371		
	Non-Vested	13,858		
E.	TOTAL ON JUNE 30, 2001	49,229	11,452	8,111

		Recipients: Retirement Annuitants	Recipients: Disabled	Recipients: Survivors
A.	ON JUNE 30, 2000	16,276	1,070	1,955
B.	ADDITIONS	1,081	129	202
C.	DELETIONS			
	1. Service Retirement	0	0	0
	2. Death	(607)	(56)	(80)
	3. Annuity Expired	0	0	0
	4. Returned as Active	0	0	0
D.	DATA ADJUSTMENTS	16	(16)	8
E.	TOTAL ON JUNE 30, 2001	16,766	1,127	2,085

State Employees Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 2001

		Non-Vested	Vested	Total
A.	CURRENT ASSETS (TABLE 1, E6)			$7,366,673
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			($350,876)
	2. Present Value of Future Normal Costs			1,599,905
	3. Total Expected Future Assets			$1,249,029
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$8,615,702
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	1. Benefit Recipients			
	a. Retirement Annuities		$2,402,622	$2,402,622
	b. Disability Benefits		122,297	122,297
	c. Surviving Spouse and Child Benefits		249,288	249,288
	2. Deferred Retirements with Future Augmentation		447,755	447,755
	3. Former Members without Vested Rights		7,086	7,086
	4. Active Members			
	a. Retirement Annuities	24,585	2,452,344	2,476,929
	b. Disability Benefits	123,077	0	123,077
	c. Survivor's Benefits	69,234	0	69,234
	d. Deferred Retirements	5,571	197,812	203,383
	e. Refund Liability Due to Death or Withdrawal	0	14,408	14,408
	5. Total Current Benefit Obligations	$222,467	$5,893,612	$6,116,079
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			$2,057,019
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$8,173,098
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			($1,250,594)
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			($442,604)

State Employees Retirement Fund

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

(dollars in thousands)

JULY 1, 2001

	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	$4,242,485	$1,170,301	$3,072,184
b. Disability Benefits	214,843	88,840	126,003
c. Survivor's Benefit	119,017	46,705	72,312
d. Deferred Retirements	332,486	190,729	141,757
e. Refunds Due to Death or Withdrawal	30,566	103,330	(72,764)
f. Total	$4,939,397	$1,599,905	$3,339,492
2. Deferred Retirements With Future Augmentation	447,755		447,755
3. Former Members Without Vested Rights	7,086		7,086
4. Annuitants in MPRIF	2,771,952		2,771,952
5. Recipients Not in MPRIF	2,255		2,255
6. Contingent Liability for Unclassified Plan	4,653		4,653
7. Total	$8,173,098	$1,599,905	$6,573,193

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$6,573,193
2. Current Assets (Table 1, E6)	7,366,673
3. UAAL (B1-B2)	($793,480)
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2031	$36,549,596
2. Supplemental Contribution Rate (B3/C1)	-2.17%

State Employees Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

A.	UAAL AT BEGINNING OF YEAR	($638,462)
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	1. Normal Cost and Expenses	$169,581
	2. Contribution	(147,726)
	3. Interest on A, B1 and B2	(53,340)
	4. Total (B1+B2+B3)	($31,485)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	($669,947)
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	1. Salary Increases	($108,969)
	2. Investment Return	(29,406)
	3. MPRIF Mortality	(3,676)
	4. Mortality of Other Benefit Recipients	(112)
	5. Other Items	13,977
	6. Total	($128,186)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	($798,133)
F.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGE IN ACTUARIAL METHODS	0
G.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO RECOGNITION OF UNCLASSIFIED PLAN CONTINGENT LIABILITY	4,653
H.	UAAL AT END OF YEAR (E+F+G)	($793,480)

State Employees Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 2001

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 352		
1. Employee Contributions	4.00%	$78,712
2. Employer Contributions	4.00%	78,712
3. Total	8.00%	$157,424
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	6.52%	$128,360
b. Disability Benefits	0.46%	9,129
c. Survivors	0.25%	4,857
d. Deferred Retirement Benefits	0.98%	19,249
e. Refunds Due to Death or Withdrawal	0.55%	10,807
f. Total	8.76%	$172,402
2. Supplemental Contribution Amortization by July 1, 2031 of UAAL	-2.17%	(42,702)
3. Allowance for Expenses	0.20%	3,936
4. Total	6.79%	$133,636
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	1.21%	$23,788

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 2001 is $1,967,814.

State Employees Retirement Fund

Summary of Actuarial Assumptions and Methods

***Interest*:**	**Pre-Retirement:** 8.5% per annum **Post-Retirement:** 8.5% per annum
***Benefit Increases After Retirement*:**	Payment of earnings on retired reserves in excess of 6% accounted for by 6% post-retirement assumptions.
***Salary Increases*:**	Reported salary for prior fiscal year, with new hires annualized, increased to current fiscal year and annually for each future year according to the ultimate rate table on pages 21 and 22. During a 10-year select period, 0.2% x (10 - T) where T is completed years of service is added to the ultimate rate.
***Mortality*:**	**Pre-Retirement:** Male - 1983 Group Annuity Mortality Table for males setback five years. Female - 1983 Group Annuity Mortality Table for females set back two years. **Post-Retirement:** Male - 1983 Group Annuity Mortality Table for males setback one year. Female - 1983 Group Annuity Mortality Table for females setback one year. **Post-Disability:** Male - 1965 RRB rates through age 54. For ages 55 to 64, graded rates between 1965 RRB rates and the Post-Retirement mortality table. For ages 65 and later, the Post-Retirement mortality table. Female - 1965 RRB rates through age 54. For ages 55 to 64, graded rates between 1965 RRB rates and the Post-Retirement mortality table. For ages 65 and later, the Post-Retirement mortality table.

***Retirement Age*:** Graded rates beginning at age 55 as shown in rate table. Members who have attained the highest assumed retirement age will retire in one year.

***Separation*:** Select and ultimate rates based on recent plan experience. Ultimate rates after the third year are shown in rate table. Select rates are as follows:

	First Year	Second Year	Third Year
Males	0.40	0.10	0.055
Females	0.44	0.11	0.07

***Disability*:** Rates as shown in rate table.

Allowance for Combined Service Annuity: Liabilities for active and deferred vested participants are increased by 1.0% to account for the effect of some participants having eligibility for a Combined Service Annuity.

***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

***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 - 10% elect 50% J&S option
10% 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*:**	Market Value less a percentage of the Unrecognized Asset Return determined at the close of each of the four preceding fiscal years. Unrecognized Asset Return is the difference between actual net return on Market Value of Assets and the asset return expected during the fiscal year (based on the assumed interest rate employed in the July 1 Actuarial Valuation of the fiscal year). Transition rules apply between July 1, 2000 and July 1, 2003, when the method is fully in effect.
***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. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Pre-Retirement Death		Withdrawal		Disability		Retirement		Salary
							Rule of 90		
Age	Male	Female	Male	Female	Male	Female	Eligible	Other	Increases
20	3	2	560	632	0	0	0	0	6.75%
21	3	2	530	616	0	0	0	0	6.70%
22	3	2	500	600	0	0	0	0	6.65%
23	4	2	470	584	0	0	0	0	6.60%
24	4	2	440	568	0	0	0	0	6.55%
25	4	2	410	552	0	1	0	0	6.50%
26	4	2	380	536	0	1	0	0	6.45%
27	4	3	350	520	0	1	0	0	6.40%
28	4	3	340	504	0	1	0	0	6.35%
29	4	3	330	488	1	2	0	0	6.30%
30	5	3	320	472	1	2	0	0	6.25%
31	5	3	310	456	2	2	0	0	6.20%
32	5	3	300	440	3	3	0	0	6.15%
33	5	4	290	424	4	3	0	0	6.10%
34	6	4	280	408	4	3	0	0	6.05%
35	6	4	270	392	5	4	0	0	6.00%
36	6	4	260	376	5	4	0	0	5.95%
37	7	5	250	360	6	5	0	0	5.90%
38	7	5	240	350	6	7	0	0	5.85%
39	8	5	230	340	6	9	0	0	5.80%
40	9	6	220	330	7	12	0	0	5.75%
41	9	6	210	320	7	14	0	0	5.70%
42	10	7	200	310	8	16	0	0	5.65%
43	10	7	194	308	8	18	0	0	5.60%
44	11	8	188	306	8	21	0	0	5.55%

Summary of Actuarial Assumptions and Methods

Separation Expressed as Number of Occurrences Per 10,000:

	Pre-Retirement Death		Withdrawal		Disability		Retirement Rule of 90		Salary
Age	Male	Female	Male	Female	Male	Female	Eligible	Other	Increases
45	12	8	182	304	9	23	0	0	5.50%
46	14	9	176	302	9	26	0	0	5.45%
47	15	10	170	300	10	28	0	0	5.40%
48	17	11	166	298	13	29	0	0	5.35%
49	19	12	162	296	16	31	0	0	5.30%
50	22	14	158	294	19	33	0	0	5.25%
51	25	15	154	292	22	35	0	0	5.20%
52	28	16	150	290	25	36	0	0	5.15%
53	31	18	146	278	29	37	0	0	5.10%
54	35	19	142	266	32	39	0	0	5.05%
55	39	21	138	254	35	41	2,000	200	5.00%
56	43	23	134	242	39	43	2,000	200	5.00%
57	48	25	130	230	42	44	2,000	200	5.00%
58	52	28	87	153	47	48	2,000	200	5.00%
59	57	31	43	77	52	52	2,000	400	5.00%
60	61	34	0	0	57	56	2,500	800	5.00%
61	66	38	0	0	62	61	3,000	1,200	5.00%
62	71	42	0	0	68	66	4,500	2,100	5.00%
63	77	47	0	0	75	75	3,500	1,500	5.00%
64	84	52	0	0	90	90	3,500	2,500	5.00%
65	92	58	0	0	0	0	5,000	5,000	5.00%
66	101	64	0	0	0	0	3,500	3,500	5.00%
67	111	71	0	0	0	0	3,500	3,500	5.00%
68	124	78	0	0	0	0	3,500	3,500	5.00%
69	139	87	0	0	0	0	3,500	3,500	5.00%
70	156	97	0	0	0	0	3,500	3,500	5.00%
71	176	109	0	0	0	0	10,000	10,000	5.00%

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. Effective January 1, 2002, annual lump sum payment is divided by 12 and paid as a monthly life annuity in the annuity form elected.

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%.

SIGNIFICANT CHANGES

No significant changes in plan provisions were recognized for this valuation.

TABLE 14

State Employees Retirement Fund

SCHEDULE OF FUNDING PROGRESS
(dollars in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (A)	Actuarial Accrued Liability (AAL) (B)	Unfunded AAL (UAAL) (B - A)	Funded Ratio (A)/(B)	Actual Covered Payroll (Previous FY) (C)	UAAL as % of Covered Payroll (B - A) / (C)
07/01/1991	2,304,311	2,883,603	579,292	79.91%	1,370,964	42.25%
07/01/1992	2,613,472	3,125,299	511,827	83.62%	1,409,108	36.32%
07/01/1993	2,905,578	3,563,492	657,914	81.54%	1,482,005	44.39%
07/01/1994	3,158,068	3,876,584	718,516	81.47%	1,536,978	46.75%
07/01/1995	3,462,098	3,795,926	333,828	91.21%	1,514,177	22.05%
07/01/1996	3,975,832	4,087,273	111,441	97.27%	1,560,369	7.14%
07/01/1997	4,664,519	4,519,542	(144,977)	103.21%	1,568,747	-9.24%
07/01/1998	5,390,526	5,005,165	(385,361)	107.70%	1,557,880	-24.74%
07/01/1999	5,968,692	5,464,207	(504,485)	109.23%	1,649,469	-30.58%
07/01/2000	6,744,165	6,105,703	(638,462)	110.46%	1,733,054	-36.84%
07/01/2001	7,366,673	6,573,193	(793,480)	112.07%	1,834,042	-43.26%

TABLE 15

State Employees Retirement Fund

SCHEDULE OF EMPLOYER CONTRIBUTIONS
(dollars in thousands)

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
1991	8.17%	1,370,964	56,895	55,113	57,986	105.21%
1992	7.86%	1,409,108	58,478	52,278	59,244	113.32%
1993	8.27%	1,482,005	59,132	63,430	58,982	92.99%
1994	8.93%	1,536,978	62,555	74,697	60,741	81.32%
1995	9.15%	1,514,177	61,627	76,920	63,161	82.11%
1996	8.05%	1,560,369	63,507	62,103	65,557	105.56%
1997	7.21%	1,568,747	63,848	49,259	66,568	135.14%
1998	7.13%	1,557,880	62,901	48,176	62,315	129.35%
1999	6.48%	1,649,469	66,823	40,063	65,979	164.69%
2000	6.12%	1,733,054	70,378	35,685	69,322	194.26%
2001	7.12% ***	1,834,042	74,364	56,220	73,362	130.49%
2002	6.79%					

* Includes contributions from other sources (if applicable).

*** Actuarially Required Contribution Rate prior to change in Actuarial Assumptions and Asset Valuation Method is 5.72%

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	3
2.	Projected Annual Earnings	$109,126
3.	Normal Cost	
	a. Dollar Amount	$ 11,943
	b. Percent of Payroll	10.94%

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	5
2.	Projected Annual Earnings	$368,271
3.	Normal Cost	
	a. Dollar Amount	$ 45,108
	b. Percent of Payroll	12.25%

State Employees Retirement Fund

Fire Marshals Calculation

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

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

The results of our calculations are as follows:

1.	Number of Active Members		11
2.	Projected Annual Earnings		$557,899
3.	Normal Cost for Post-7/1/99 Benefits		
	a.	Dollar Amount	$ 51,597
	b.	Percent of Payroll	9.25%

State Employees Retirement Fund

Unclassified Plan Contingent Liability Calculation

Section 352D.02 of chapter 352D of Minnesota Statutes provides that employees credited with employee shares in the unclassified program may elect to terminate participation in the unclassified plan and be covered by the regular plan prior to termination of covered employment.

To recognize the effect of the option to elect coverage under the regular plan, we have assumed that all eligible Unclassified plan members will elect coverage under the regular plan if such election provides the member with a greater economic present value than the accumulated contribution balance under the unclassified plan. The liabilities were measured using the actuarial assumptions which are applied to the State Employees Retirement Fund.

The results of our calculations are as follows:

1.	Number of Active Members	2,011
2.	Account Balances for Active Members	$155,062,177
3.	Accrued Liability for Active Members	$164,448,558
4.	Number of Inactive Members	1,445
5.	Account Balances for Inactive Members	$94,465,430
6.	Net Assets held in trust for Unclassified Plan pension benefits	$254,261,354
7.	Contingent Liability [(3) + (5) – (6)]	$4,652,634
8.	Projected Annual Earnings for Active Members	$114,360,617
9.	Normal Cost	
	a. Dollar Amount	$ 12,909,521
	b. Percent of Payroll	11.29%

State Patrol Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 2001

A MILLIMAN GLOBAL FIRM

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December 7, 2001

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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, 2001.

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.

We, Thomas K. Custis and William V. Hogan, are actuaries for Milliman USA. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Milliman USA

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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Report Highlights
(dollars in thousands)

	07/01/2000 Valuation	07/01/2001 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 352B % of Payroll	21.00%	21.00%
2. Required Contributions - Chapter 356 % of Payroll	15.48%	14.00%
3. Sufficiency (Deficiency): (A.1. - A.2.)	5.52%	7.00%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$528,573	$572,815
b. Current Benefit Obligations (Table 8)	$444,592	$476,072
c. Funding Ratio: (a/b)	118.89%	120.32%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$528,573	$572,815
b. Actuarial Accrued Liability (Table 9)	$458,384	$489,483
c. Funding Ratio: (a/b)	115.31%	117.02%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$634,711	$678,931
b. Current and Expected Future Benefit Obligations	$581,418	$611,884
c. Funding Ratio: (a/b)	109.17%	110.96%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	830	823
b. Projected Annual Earnings	$51,980	$51,574
c. Average Annual Earnings (Projected $)	$62,626	$62,665
d. Average Age	40.8	40.8
e. Average Service	12.9	12.6
2. Others		
a. Service Retirements (Table 4)	531	556
b. Survivors (Table 5)	157	164
c. Disability Retirements (Table 6)	22	25
d. Deferred Retirements (Table 7)	24	25
e. Terminated Other Non-vested (Table 7)	10	10
f. Total	744	780

Commentary

Purpose

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

Report Highlights

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

- The Accrued Benefit Funding Ratio is a measure of current funding status and, when viewed over a period of years, presents a view of the funding progress. It is based upon benefits which have been earned by service to the valuation date. This year's ratio is 120.32%. The corresponding ratio for the prior year was 118.89%.
- 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 2001 the ratio is 117.02%, which is an increase from the 2000 value of 115.31%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 110.96% verifies that the current statutory contributions are sufficient.

Asset Information (Tables 1 and 2)

Effective with the July 1, 2000 valuation of the fund, Minnesota Statutes require that the asset value used for actuarial purposes spread differences between actual return (measured on a market-value basis) and expected return on non-MPRIF assets over five years, in a manner similar to that already being used within the MPRIF. The previous method required under Minnesota Statutes recognized one third of the unrealized gains and losses. An Asset Valuation Method requirement exists because market values (which include all unrealized gains and losses) are typically volatile and can produce erratic changes in the contribution requirements from year to year. The intent of the change to the current method is to employ a more effective asset smoothing technique which is market-value based and which eliminates artificial bias related to manager style. The effective date of this requirement is July 1, 2000 with full transition to be accomplished as of July 1, 2003.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines E.1 to E.4. Actuarial Value of Assets is determined as:

Market Value of Assets at June 30, 2001, *less*

80% of the current year Unrecognized Asset Return at July 1, 2001 (the difference between actual net return on Market Value of Assets between 06/30/2000 and

06/30/2001 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 2000 Actuarial Valuation); *less*

60% of the current year Unrecognized Asset Return at July 1, 2000 (the difference between actual net return on Market Value of Assets between 06/30/99 and 06/30/2000 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 1999 Actuarial Valuation); *less*

30% of the Unrecognized Asset Return at July 1, 1999 (the difference between Market Value of Assets on 06/30/99 and the Actuarial Value of Assets used in the July 1, 1999 Actuarial Valuation).

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

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

Actuarial Balance Sheet (Table 8)

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

The Current Benefit Obligation used to measure current funding levels is calculated as follows:

- For Active Members – Salary and service are projected to retirement to determine benefits for each member and the ratio of credited service to total service establishes the portion of the projected benefit to be used in calculating the current funding level.
- For Non-Active Members – The discounted value of benefits, including augmentation in cases where benefits have not commenced.

GASB Disclosure

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

Actuarial Cost Method (Table 9)

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

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

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

Source of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

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

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 21.00% compared to the Required Contribution Rate of 14.00%.

Changes in Actuarial Assumptions and Methods

All actuarial assumptions and methods listed in Table 12 are the same as those used in the prior valuation.

Changes in Plan Provisions

Effective with this July 1, 2000 valuation, the following plan provision has been amended:

- Effective January 1, 2002, the additional lump sum benefits that are paid to pre-1973 retirees will be paid as monthly installments to the retirees.

All other plan provisions are the same as those used in the prior actuarial valuation of the Fund.

State Patrol Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 2001

	Market Value	Cost Value
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-term Securities	$4,493	$4,493
2. Fixed Income	59,717	60,420
3. Equity	174,699	188,618
4. Real Estate	9,443	7,910
5. Equity in MPRIF	303,600	303,600
6. Other	0	0
Subtotal	$551,952	$565,041
B. ASSETS RECEIVABLE	324	324
C. LIABILITIES	(3,109)	(3,109)
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	303,600	303,600
2. Member Reserves	37,145	37,145
3. Other Non-MPRIF Reserves	208,422	221,511
4. Total Assets Available for Benefits	$549,167	$562,256

E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS

1. Market Value of Assets Available for Benefits (D4)		$549,167
2. Unrecognized Asset Returns (UAR)		
a. June 30, 2001	($43,283)	
b. June 30, 2000	5,030	
c. June 30, 1999	26,535	
3. UAR Adjustment: .80 * (E2.a) + .60 * (E2.b) + .30 * (E2.c)		(23,648)
4. Actuarial Value of Assets (E1 - E3) (Same as "Current Assets")		572,815

State Patrol Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

	Non-MPRIF Assets	MPRIF Reserve	Market Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$283,465	$265,053	$548,518
B. ADDITIONS			
1. Member Contributions	$4,145	$0	$4,145
2. Employer Contributions	6,166	0	6,166
3. Contributions From Other Sources	0	0	0
4. MPRIF Income	0	40,446	40,446
5. Net Investment Income			
a. Interest and Dividends	18,741	0	18,741
b. Net Realized Gain (Loss)	0	0	0
c. Net Change in Unrealized Gain (Loss)	(38,201)	0	(38,201)
d. Investment Expenses	(374)	0	(374)
e. **Net Subtotal**	(19,834)	0	(19,834)
6. Other	1	0	1
7. Total Additions	($9,522)	$40,446	$30,924
C. OPERATING EXPENSES			
1. Service Retirements	$201	$29,734	$29,935
2. Disability Benefits	0	0	0
3. Survivor Benefits	0	0	0
4. Refunds	1	0	1
5. Administrative Expenses	90	0	90
6. Other	249	0	249
7. Total Disbursements	$541	$29,734	$30,275
D. OTHER CHANGES IN RESERVES			
1. Annuities Awarded	(24,924)	24,924	0
2. Mortality Gain/Loss	(2,911)	2,911	0
3. Total Other Changes	(27,835)	27,835	0
E. ASSETS AVAILABLE AT END OF PERIOD	$245,567	$303,600	$549,167

F. DETERMINATION OF CURRENT YEAR UNRECOGNIZED ASSET RETURN

1. Average Balance	
(a) Non-MPRIF Assets Available at Beginning of Period	283,465
(b) Non-MPRIF Assets Available at End of Period*	248,478
(c) Average Balance { [F1.a + F1.b - B5.e - B6] / 2 }	275,888
2. Expected Return: .085 * F1.c	23,450
3. Actual Return	(19,833)
4. Current Year Unrecognized Asset Return: F3 - F2	(43,283)

* *Before adjustment for MPRIF mortality gain/loss*

State Patrol Retirement Fund

Active Members as of June 30, 2001

	Years of Service								
Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	All
<25	4	7	0	0	0	0	0	0	11
25-29	10	70	2	0	0	0	0	0	82
30-34	11	76	24	16	0	0	0	0	127
35-39	8	40	25	57	16	0	0	0	146
40-44	1	18	18	40	56	24	0	0	157
45-49	3	10	2	23	38	64	11	0	151
50-54	1	4	2	13	12	33	39	13	117
55-59	0	2	1	5	0	5	7	9	29
60-64	0	0	0	0	0	0	1	2	3
65+	0	0	0	0	0	0	0	0	0
ALL	38	227	74	154	122	126	58	24	823

Average Annual Earnings

	Years of Service								
Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	All
<25	31,398	46,199	0	0	0	0	0	0	40,817
25-29	32,807	48,518	58,204	0	0	0	0	0	46,838
30-34	32,879	49,843	57,434	58,383	0	0	0	0	50,884
35-39	36,274	51,694	58,539	60,413	64,918	0	0	0	56,874
40-44	45,573	54,532	57,423	61,655	64,331	71,553	0	0	62,718
45-49	52,534	59,876	58,685	61,777	65,326	65,770	66,056	0	64,324
50-54	69,655	66,350	65,701	65,791	62,739	67,138	68,387	66,508	66,854
55-59	0	56,020	63,164	65,613	0	76,822	71,775	64,915	68,070
60-64	0	0	0	0	0	0	61,226	69,906	67,013
65+	0	0	0	0	0	0	0	0	0
ALL	36,272	50,807	58,160	61,351	64,561	67,668	68,230	66,194	59,067

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	1,378	11,533	4,303	9,448	7,876	8,526	3,957	1,588	48,612

State Patrol Retirement Fund

Service Retirements as of June 30, 2001

Age	Years Retired <1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	0	0	0	0	0	0	0	0
50-54	11	14	0	0	0	0	0	25
55-59	23	102	5	0	0	0	0	130
60-64	6	23	67	3	0	0	0	99
65-69	0	5	8	65	0	0	0	78
70-74	0	2	5	28	54	0	0	89
75-79	0	0	1	3	45	22	1	72
80-84	0	0	0	0	13	20	10	43
85+	0	0	0	0	1	2	17	20
ALL	40	146	86	99	113	44	28	556

Average Annual Benefit

Age	Years Retired <1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	0	0	0	0	0	0	0	0
50-54	38,763	42,297	0	0	0	0	0	40,742
55-59	48,023	48,066	33,377	0	0	0	0	47,493
60-64	22,026	51,104	50,329	43,285	0	0	0	48,580
65-69	0	57,471	53,671	52,037	0	0	0	52,553
70-74	0	57,973	40,052	53,722	47,834	0	0	49,477
75-79	0	0	41,696	36,436	53,150	39,645	29,842	47,844
80-84	0	0	0	0	51,212	42,534	30,264	42,304
85+	0	0	0	0	40,240	53,003	35,465	37,458
ALL	41,577	48,449	48,956	51,776	50,272	41,565	33,407	47,694

Total Annual Benefit (in thousands) by Years Retired

Age	<1	1-4	5-9	10-14	15-19	20-24	25+	All
All	1,663	7,073	4,210	5,125	5,680	1,828	935	26,517

State Patrol Retirement Fund

Survivors as of June 30, 2001

	Years Since Death							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	3	13	2	0	0	0	1	19
50-54	0	2	1	0	0	0	0	3
55-59	3	4	2	1	0	0	0	10
60-64	0	2	2	2	0	0	0	6
65-69	1	8	4	2	1	2	1	19
70-74	2	4	9	3	1	5	4	28
75-79	2	5	0	2	0	5	4	18
80-84	0	2	11	4	2	3	6	28
85+	0	2	5	3	0	0	23	33
ALL	11	42	36	17	4	15	39	164

Average Annual Benefit

	Years Since Death							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	11,453	12,340	6,729	0	0	0	9,522	11,461
50-54	0	22,424	36,990	0	0	0	0	27,279
55-59	42,331	27,742	14,701	24,395	0	0	0	29,176
60-64	0	21,987	42,416	8,157	0	0	0	24,187
65-69	34,627	33,900	20,642	26,549	41,634	61,977	16,337	32,812
70-74	31,231	28,682	29,531	21,607	43,875	44,433	17,616	30,153
75-79	23,793	22,824	0	22,335	0	38,224	25,927	27,845
80-84	0	21,972	15,482	29,088	38,872	27,152	21,525	22,105
85+	0	20,719	25,268	21,785	0	0	20,619	21,436
ALL	27,821	22,515	22,491	22,647	40,813	41,246	20,601	24,584

Total Annual Benefit (in thousands) by Years Since Death

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	306	945	809	384	163	618	803	4,031

State Patrol Retirement Fund

Disability Retirements as of June 30, 2001

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

Average Annual Benefit

	Years Disabled							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	0	24,219	34,193	32,175	0	0	0	28,205
50-54	34,694	0	46,480	0	0	0	0	38,623
55-59	56,317	0	44,760	16,650	0	0	0	41,449
60-64	0	0	0	42,855	34,435	32,876	0	36,722
65-69	0	0	0	52,274	0	0	0	52,274
70-74	0	0	0	0	0	40,658	28,184	34,421
75-79	0	0	0	0	0	40,980	28,721	34,851
80-84	0	0	0	0	0	0	0	0
85+	0	0	0	0	0	0	0	0
ALL	41,902	24,219	41,524	35,989	34,435	38,874	28,542	35,649

Total Annual Benefit (actual dollars) by Years Disabled

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	125,706	96,876	249,144	143,956	34,435	155,496	85,626	891,225

State Patrol Retirement Fund

Reconciliation Of Members

	Actives	Terminated Deferred Retirement	Terminated Other Non-Vested
A. ON JUNE 30, 2000	830	24	10
B. ADDITIONS	40	6	3
C. DELETIONS			
1. Service Retirement	(36)	(4)	0
2. Disability	(2)	0	0
3. Death	0	0	0
4. Terminated - Deferred	(4)	0	(2)
5. Terminated - Refund	(1)	0	0
6. Terminated - Other Non-Vested	(2)	(1)	0
7. Returned as Active	0	0	0
8. Transferred to Other Fund	0	0	0
D. DATA ADJUSTMENTS	(2)	0	(1)
Vested	667		
Non-Vested	156		
E. TOTAL ON JUNE 30, 2001	823	25	10

	Recipients Retirement Annuitants	Recipients Disabled	Recipients Survivors
A. ON JUNE 30, 2000	531	22	157
B. ADDITIONS	40	3	17
C. DELETIONS			
1. Service Retirement	0	0	0
2. Death	(15)	0	(5)
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	0
D. DATA ADJUSTMENTS	0	0	(5)
E. TOTAL ON JUNE 30, 2001	556	25	164

State Patrol Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 2001

A. CURRENT ASSETS (TABLE 1, E6)			$572,815
B. EXPECTED FUTURE ASSETS			
1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			($16,285)
2. Present Value of Future Normal Costs			122,401
3. Total Expected Future Assets			$106,116
C. TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$678,931
D. CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
1. Benefit Recipients			
a. Retirement Annuities		$262,467	$262,467
b. Disability Benefits		8,601	8,601
c. Surviving Spouse and Child Benefits		34,219	34,219
2. Deferred Retirements with Future Augmentation		3,822	3,822
3. Former Members without Vested Rights		26	26
4. Active Members			
a. Retirement Annuities	1,797	145,374	147,171
b. Disability Benefits	12,107	0	12,107
c. Survivor's Benefits	4,949	0	4,949
d. Deferred Retirements	102	2,510	2,612
e. Refund Liability Due to Death or Withdrawal	0	98	98
5. Total Current Benefit Obligations	$18,955	$457,117	$476,072
E. EXPECTED FUTURE BENEFIT OBLIGATIONS			$135,812
F. TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$611,884
G. CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			($96,743)
H. CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			($67,047)

State Patrol Retirement Fund

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

(dollars in thousands)

JULY 1, 2001

	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	$266,764	$100,345	$166,419
b. Disability Benefits	22,094	12,865	9,229
c. Survivor's Benefit	8,965	4,900	4,065
d. Deferred Retirements	4,729	3,557	1,172
e. Refunds Due to Death or Withdrawal	197	734	(537)
f. Total	$302,749	$122,401	$180,348
2. Deferred Retirements With Future Augmentation	3,822		3,822
3. Former Members Without Vested Rights	26		26
4. Annuitants in MPRIF	303,600		303,600
5. Recipients Not in MPRIF	1,687		1,687
6. Total	$611,884	$122,401	$489,483

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$489,483
2. Current Assets (Table 1, E6)	572,815
3. UAAL (B1-B2)	($83,332)
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2031	$957,913
2. Supplemental Contribution Rate (B3/C1)	-8.70%

State Patrol Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

A.	UAAL AT BEGINNING OF YEAR	($70,189)
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	1. Normal Cost and Expenses	$11,829
	2. Contribution	(10,311)
	3. Interest on A, B1 and B2	(5,902)
	4. Total (B1+B2+B3)	($4,384)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	($74,573)
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	1. Salary Increases	($10,122)
	2. Investment Return	(2,005)
	3. MPRIF Mortality	2,911
	4. Mortality of Other Benefit Recipients	248
	5. Other Items	209
	6. Total	($8,759)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	($83,332)
F.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGE IN ACTUARIAL METHODS	0
G.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	0
H.	UAAL AT END OF YEAR (E+F+G)	($83,332)

State Patrol Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 2001

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 352B		
1. Employee Contributions	8.40%	$4,332
2. Employer Contributions	12.60%	6,498
3. Total	21.00%	$10,830
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	18.42%	$9,501
b. Disability Benefits	2.41%	1,244
c. Survivors	0.94%	486
d. Deferred Retirement Benefits	0.63%	323
e. Refunds Due to Death or Withdrawal	0.13%	66
f. Total	22.53%	$11,620
2. Supplemental Contribution Amortization by July 1, 2031 of UAAL	-8.70%	(4,487)
3. Allowance for Expenses	0.17%	88
4. Total	14.00%	$7,221
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	7.00%	$3,609

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 2001 is $51,574.

State Patrol Retirement Fund

Summary of Actuarial Assumptions and Methods

Interest:	**Pre-Retirement**: 8.5% per annum **Post-Retirement**: 8.5% per annum
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 6% accounted for by using a 6% post-retirement assumption.
Salary Increases:	Reported salary at valuation date increased according to the rate table on pages 18 and 19 to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for new Members.
Mortality:	**Pre-Retirement**: Male - 1983 GAM (Males -1) Female - 1983 GAM (Females) **Post-Retirement**: Male - 1983 GAM (Males +2) Female - 1983 GAM (Females +2) **Post-Disability**: Male - Combined Annuity Mortality Female - Combined Annuity Mortality
Retirement Age:	Age-related table as follows:

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

Separation:	Graded rates starting at .022 at age 20 and decreasing to .003 at age 49.
Disability:	Rates adopted by MSRS as shown in rate table.
Administrative 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
***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:	Market Value less a percentage of the Unrecognized Asset Return determined at the close of each of the four preceding fiscal years. Unrecognized Asset Return is the difference between actual net return on Market Value of Assets and the asset return expected during that fiscal year (based on the assumed interest rate employed in the July 1 Actuarial Valuation of the fiscal year). Transition rules apply between July 1, 2000 and July 1, 2003, when the method is fully in effect.
***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. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.

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 1/10% 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. Effective January 1, 2002, annual lump sum payment is divided by 12 and paid as a monthly life annuity in the annuity form elected.

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

No significant changes in plan provisions were recognized for this valuation.

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)
07/01/1991	200,068	224,033	23,965	89.30%	32,365	74.05%
07/01/1992	222,314	233,656	11,342	95.15%	32,882	34.49%
07/01/1993	244,352	258,202	13,850	94.64%	35,765	38.73%
07/01/1994	262,570	275,377	12,807	95.35%	35,341	36.24%
07/01/1995	284,918	283,078	(1,840)	100.65%	37,518	-4.90%
07/01/1996	323,868	303,941	(19,927)	106.56%	41,476	-48.04%
07/01/1997	375,650	332,427	(43,223)	113.00%	41,996	-102.92%
07/01/1998	430,011	371,369	(58,642)	115.79%	43,456	-134.95%
07/01/1999	472,687	406,215	(66,472)	116.36%	45,333	-146.63%
07/01/2000	528,573	458,384	(70,189)	115.31%	48,167	-145.72%
07/01/2001	572,815	489,483	(83,332)	117.02%	48,935	-170.29%

State Patrol Retirement Fund

SCHEDULE OF EMPLOYER CONTRIBUTIONS
(dollars in thousands)

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
1991	22.15%	32,365	2,751	4,418	4,825	109.21%
1992	22.58%	32,882	2,795	4,630	4,893	105.68%
1993	22.27%	35,765	3,040	4,925	5,288	107.37%
1994	21.94%	35,341	3,004	4,750	5,159	108.61%
1995	21.79%	37,518	3,189	4,986	5,583	111.97%
1996	21.34%	41,476	3,484	5,367	5,742	106.99%
1997	21.33%	41,996	3,746	5,212	6,151	118.02%
1998	15.67%	43,456	3,634	3,176	5,475	172.39%
1999	14.14%	45,333	3,850	2,560	5,712	223.13%
2000	15.17% **	48,167	4,044	3,263	6,069	185.99%
2001	15.48% ***	48,935	4,145	3,430	6,166	179.77%
2002	14.00%					

* Includes contributions from other sources (if applicable).

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

***Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 15.15%

Correctional Employees Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 2001

A MILLIMAN GLOBAL FIRM

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December 7, 2001

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, 2001.

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.

We, Thomas K. Custis and William V. Hogan, are actuaries for Milliman USA. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Milliman USA

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)

Report Highlights

(dollars in thousands)

	07/01/2000 Valuation	07/01/2001 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 352 % of Payroll	13.67%	13.67%
2. Required Contributions - Chapter 356 % of Payroll	13.72%	13.81%
3. Sufficiency (Deficiency): (A.1. - A.2.)	-0.05%	-0.14%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$386,964	$431,134
b. Current Benefit Obligations (Table 8)	$325,649	$362,903
c. Funding Ratio: (a/b)	118.83%	118.80%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$386,964	$431,134
b. Actuarial Accrued Liability (Table 9)	$359,885	$398,633
c. Funding Ratio: (a/b)	107.52%	108.15%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$492,319	$530,289
b. Current and Expected Future Benefit Obligations	$493,434	$533,641
c. Funding Ratio: (a/b)	99.77%	99.37%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	3,098	3,182
b. Projected Annual Earnings	$127,557	$127,835
c. Average Annual Earnings (Projected $)	$41,174	$40,174
d. Average Age	40.3	40.6
e. Average Service	7.8	8.0
2. Others		
a. Service Retirements (Table 4)	616	655
b. Survivors (Table 5)	56	61
c. Disability Retirements (Table 6)	75	92
d. Deferred Retirements (Table 7)	419	483
e. Terminated Other Non-vested (Table 7)	163	220
f. Total	1,329	1,511

Correctional 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 118.80%. The corresponding ratio for the prior year was 118.83%.
- 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 2001 the ratio is 108.15%, which is an increase from the 2000 value of 107.52%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 99.37% shows that the current statutory contributions are just slightly inadequate.

Asset Information (Tables 1 and 2)

Effective with the July 1, 2000 valuation of the fund, Minnesota Statutes require that the asset value used for actuarial purposes spread differences between actual return (measured on a market-value basis) and expected return on non-MPRIF assets over five years, in a manner similar to that already being used within the MPRIF. The previous method required under Minnesota Statutes recognized one third of the unrealized gains and losses. An Asset Valuation Method requirement exists because market values (which include all unrealized gains and losses) are typically volatile and can produce erratic changes in the contribution requirements from year to year. The intent of the change to the current method is to employ a more effective asset smoothing technique which is market-value based and which eliminates artificial bias related to manager style. The effective date of this requirement is July 1, 2000 with full transition to be accomplished as of July 1, 2003.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines E.1 to E.4. Actuarial Value of Assets is determined as:

Market Value of Assets at June 30, 2001, *less*

80% of the current year Unrecognized Asset Return at July 1, 2001 (the difference between actual net return on Market Value of Assets between 06/30/2000 and 06/30/2001 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 2000 Actuarial Valuation); *less*

60% of the current year Unrecognized Asset Return at July 1, 2000 (the difference between actual net return on Market Value of Assets between 06/30/99 and 06/30/2000 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 1999 Actuarial Valuation); *less*

30% of the Unrecognized Asset Return at July 1, 1999 (the difference between Market Value of Assets on 06/30/99 and the Actuarial Value of Assets used in the July 1, 1999 Actuarial Valuation).

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

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

Actuarial Balance Sheet (Table 8)

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

The Current Benefit Obligation used to measure current funding levels is calculated as follows:

- For Active Members – Salary and service are projected to retirement to determine benefits for each member and the ratio of credited service to total service establishes the portion of the projected benefit to be used in calculating the current funding level.
- For Non-Active Members – The discounted value of benefits, including augmentation in cases where benefits have not commenced.

GASB Disclosure

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

Actuarial Cost Method (Table 9)

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

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

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

Source of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

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

Table 11 shows the Plan has a small contribution deficiency since the Statutory Contribution Rate is 13.67% compared to the Required Contribution Rate of 13.81%.

Changes in Actuarial Assumptions and Methods

All actuarial assumptions and methods listed in Table 12 are the same as those used in the prior valuation.

Changes in Plan Provisions

All plan provisions are the same as those used in the prior actuarial valuation of the Fund.

Page 4

Correctional Employees Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 2001

	Market Value	Cost Value
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-term Securities	$6,201	$6,201
2. Fixed Income	62,722	63,270
3. Equity	183,323	199,840
4. Real Estate	9,828	8,330
5. Equity in MPRIF	144,906	144,906
6. Other	0	0
Subtotal	$406,980	$422,547
B. ASSETS RECEIVABLE	3,968	3,968
C. LIABILITIES	(353)	(353)
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	144,906	144,906
2. Member Reserves	48,133	48,133
3. Other Non-MPRIF Reserves	217,556	233,123
4. Total Assets Available for Benefits	$410,595	$426,162

E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Market Value of Assets Available for Benefits (D4)		$410,595
2. Unrecognized Asset Returns (UAR)		
a. June 30, 2001	($43,375)	
b. June 30, 2000	12,132	
c. June 30, 1999	22,939	
3. UAR Adjustment: .80 * (E2.a) + .60 * (E2.b) + .30 * (E2.c)		(20,539)
4. Actuarial Value of Assets (E1 - E3) (Same as "Current Assets")		431,134

Correctional Employees Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

	Non-MPRIF Assets	MPRIF Reserve	Market Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$286,032	$124,401	$410,433
B. ADDITIONS			
1. Member Contributions	$6,996	$0	$6,996
2. Employer Contributions	9,652	0	9,652
3. Contributions From Other Sources	0	0	0
4. MPRIF Income	0	18,836	18,836
5. Net Investment Income			
a. Interest and Dividends	17,467	0	17,467
b. Net Realized Gain (Loss)	0	0	0
c. Net Change in Unrealized Gain (Loss)	(37,461)	0	(37,461)
d. Investment Expenses	(384)	0	(384)
e. **Net Subtotal**	(20,378)	0	(20,378)
6. Other	1,128	0	1,128
7. Total Additions	($2,602)	$18,836	$16,234
C. OPERATING EXPENSES			
1. Service Retirements	$0	$14,911	$14,911
2. Disability Benefits	0	0	0
3. Survivor Benefits	0	0	0
4. Refunds	660	0	660
5. Administrative Expenses	240	0	240
6. Other	261	0	261
7. Total Disbursements	$1,161	$14,911	$16,072
D. OTHER CHANGES IN RESERVES			
1. Annuities Awarded	(19,912)	19,912	0
2. Mortality Gain/Loss	3,332	(3,332)	0
3. Total Other Changes	(16,580)	16,580	0
E. ASSETS AVAILABLE AT END OF PERIOD	$265,689	$144,906	$410,595

F. DETERMINATION OF CURRENT YEAR UNRECOGNIZED ASSET RETURN	
1. Average Balance	
(a) Non-MPRIF Assets Available at Beginning of Period	286,032
(b) Non-MPRIF Assets Available at End of Period*	262,357
(c) Average Balance { [F1.a + F1.b - B5.e - B6] / 2 }	283,820
2. Expected Return: .085 * F1.c	24,125
3. Actual Return	(19,250)
4. Current Year Unrecognized Asset Return: F3 - F2	(43,375)

** Before adjustment for MPRIF mortality gain/loss*

Correctional Employees Retirement Fund

Active Members as of June 30, 2001

	Years of Service								
Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	All
<25	59	40	0	0	0	0	0	0	99
25-29	71	214	41	0	0	0	0	0	326
30-34	61	208	214	19	0	0	0	0	502
35-39	42	147	184	116	20	0	0	0	509
40-44	44	146	164	121	97	27	0	0	599
45-49	27	118	141	64	72	84	19	0	525
50-54	17	92	110	55	65	63	54	4	460
55-59	5	38	27	15	8	16	7	0	116
60-64	3	8	19	3	2	2	3	0	40
65+	0	2	1	0	1	0	2	0	6
ALL	329	1,013	901	393	265	192	85	4	3,182

Average Annual Earnings

	Years of Service								
Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	All
<25	21,930	28,255	0	0	0	0	0	0	24,486
25-29	21,834	30,218	35,451	0	0	0	0	0	29,050
30-34	23,001	30,651	38,226	43,886	0	0	0	0	33,452
35-39	21,919	31,553	38,948	43,766	44,479	0	0	0	36,723
40-44	24,033	34,129	39,883	43,923	47,719	47,067	0	0	39,725
45-49	26,346	37,524	41,125	43,829	44,435	47,629	53,140	0	41,815
50-54	30,233	40,112	41,048	46,238	46,746	48,434	50,778	50,864	44,126
55-59	46,346	39,451	42,612	42,625	49,784	52,999	51,861	0	44,225
60-64	39,238	39,340	45,328	46,173	41,782	49,936	68,828	0	45,553
65+	0	36,301	36,576	0	56,193	0	39,229	0	40,638
ALL	23,708	33,167	39,626	44,151	46,393	48,286	51,761	50,864	37,907

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	7,799	33,598	35,703	17,351	12,294	9,270	4,399	203	120,620

Correctional Employees Retirement Fund

Service Retirements as of June 30, 2001

	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	14	21	0	0	0	0	0	35
55-59	43	137	3	0	0	0	0	183
60-64	7	45	72	4	0	0	0	128
65-69	4	37	15	54	0	0	0	110
70-74	0	3	9	23	40	0	0	75
75-79	0	0	0	5	16	29	0	50
80-84	0	0	0	0	4	8	31	43
85+	0	0	0	0	0	3	28	31
ALL	68	243	99	86	60	40	59	655

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	13,632	15,820	0	0	0	0	0	14,945
55-59	16,428	15,953	11,319	0	0	0	0	15,989
60-64	5,188	16,173	19,731	18,542	0	0	0	17,648
65-69	12,216	13,901	15,029	19,813	0	0	0	16,896
70-74	0	6,465	17,969	16,538	23,521	0	0	20,031
75-79	0	0	0	13,036	23,601	20,847	0	20,947
80-84	0	0	0	0	13,632	19,753	13,482	14,663
85+	0	0	0	0	0	11,287	10,988	11,017
ALL	14,448	15,553	18,604	18,484	22,883	19,911	12,298	16,929

Total Annual Benefit (in thousands) by Years Retired

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	982	3,779	1,841	1,589	1,372	796	725	11,088

Table 5

Correctional Employees Retirement Fund

Survivors as of June 30, 2001

Age	Years Since Death <1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	5	1	3	0	0	0	0	9
50-54	1	4	2	1	0	0	0	8
55-59	0	3	3	1	1	0	0	8
60-64	0	7	5	0	0	0	0	12
65-69	2	4	1	1	2	0	0	10
70-74	2	1	0	0	1	0	0	4
75-79	0	2	2	1	0	1	0	6
80-84	0	0	1	0	0	0	2	3
85+	0	0	0	1	0	0	0	1
ALL	10	22	17	5	4	1	2	61

Average Annual Benefit

Age	Years Since Death <1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	8,666	3,195	6,657	0	0	0	0	7,388
50-54	9,368	12,153	2,127	7,558	0	0	0	8,724
55-59	0	4,720	12,473	4,932	11,916	0	0	8,553
60-64	0	13,992	9,254	0	0	0	0	12,018
65-69	10,918	9,018	10,259	10,015	23,638	0	0	12,546
70-74	3,355	1,837	0	0	4,978	0	0	3,381
75-79	0	13,646	11,227	6,567	0	9,783	0	11,016
80-84	0	0	2,810	0	0	0	7,466	5,914
85+	0	0	0	643	0	0	0	643
ALL	8,124	10,414	8,438	5,943	16,043	9,783	7,466	9,383

Total Annual Benefit (actual dollars) by Years Since Death

Age	<1	1-4	5-9	10-14	15-19	20-24	25+	All
All	81,240	229,108	143,446	29,715	64,172	9,783	14,932	572,363

Correctional Employees Retirement Fund

Disability Retirements as of June 30, 2001

	Years Disabled							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	11	20	12	0	0	0	0	43
50-54	5	11	6	1	0	0	0	23
55-59	1	6	7	3	0	0	0	17
60-64	2	0	2	1	0	0	0	5
65-69	0	0	0	0	1	1	0	2
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	1	1
80-84	0	0	0	0	0	1	0	1
85+	0	0	0	0	0	0	0	0
ALL	19	37	27	5	1	2	1	92

Average Annual Benefit

	Years Disabled							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	18,330	13,390	13,682	0	0	0	0	14,735
50-54	9,734	14,969	13,826	9,616	0	0	0	13,300
55-59	19,604	16,616	15,029	9,865	0	0	0	14,947
60-64	12,165	0	14,916	12,509	0	0	0	13,334
65-69	0	0	0	0	18,718	15,794	0	17,256
70-74	0	0	0	0	0	0	0	0
75-79	0	0	0	0	0	0	6,751	6,751
80-84	0	0	0	0	0	4,652	0	4,652
85+	0	0	0	0	0	0	0	0
ALL	15,486	14,383	14,155	10,344	18,718	10,223	6,751	14,198

Total Annual Benefit (actual dollars) by Years Disabled

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	294,234	532,171	382,185	51,720	18,718	20,446	6,751	1,306,216

Correctional Employees Retirement Fund

Reconciliation Of Members

		Actives	Terminated Deferred Retirement	Terminated Other Non-Vested
A.	ON JUNE 30, 2000	3,098	419	163
B.	ADDITIONS	426	107	97
C.	DELETIONS			
	1. Service Retirement	(62)	(6)	0
	2. Disability	(15)	(3)	0
	3. Death	(1)	(3)	0
	4. Terminated - Deferred	(101)	0	(2)
	5. Terminated - Refund	(91)	(9)	(21)
	6. Terminated - Other Non-Vested	(64)	(2)	0
	7. Returned as Active	0	(20)	(3)
	8. Transferred to Other Fund	(2)	0	(14)
D.	DATA ADJUSTMENTS	(6)	0	0
	Vested	2,188		
	Non-Vested	994		
E.	TOTAL ON JUNE 30, 2001	3,182	483	220

		Recipients: Retirement Annuitants	Recipients: Disabled	Recipients: Survivors
A.	ON JUNE 30, 2000	616	75	56
B.	ADDITIONS	68	22	10
C.	DELETIONS			
	1. Service Retirement	0	0	0
	2. Death	(26)	(2)	(2)
	3. Annuity Expired	0	0	0
	4. Returned as Active	0	0	0
D.	DATA ADJUSTMENTS	(3)	(3)	(3)
E.	TOTAL ON JUNE 30, 2001	655	92	61

Correctional Employees Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 2001

		Non-Vested	Vested	Total
A.	CURRENT ASSETS (TABLE 1, E6)			$431,134
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			($35,853)
	2. Present Value of Future Normal Costs			135,008
	3. Total Expected Future Assets			$99,155
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$530,289
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	1. Benefit Recipients			
	a. Retirement Annuities		$118,608	$118,608
	b. Disability Benefits		19,088	19,088
	c. Surviving Spouse and Child Benefits		7,210	7,210
	2. Deferred Retirements with Future Augmentation		18,090	18,090
	3. Former Members without Vested Rights		284	284
	4. Active Members			
	a. Retirement Annuities	3,635	161,792	165,427
	b. Disability Benefits	12,135	0	12,135
	c. Survivor's Benefits	3,651	0	3,651
	d. Deferred Retirements	573	13,631	14,204
	e. Refund Liability Due to Death or Withdrawal	0	4,206	4,206
	5. Total Current Benefit Obligations	$19,994	$342,909	$362,903
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			$170,738
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$533,641
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			($68,231)
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			$3,352

Correctional Employees Retirement Fund

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

(dollars in thousands)

JULY 1, 2001

	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	$308,925	$95,222	$213,703
b. Disability Benefits	22,217	11,114	11,103
c. Survivor's Benefit	6,509	2,619	3,890
d. Deferred Retirements	24,959	12,855	12,104
e. Refunds Due to Death or Withdrawal	7,751	13,198	(5,447)
f. Total	$370,361	$135,008	$235,353
2. Deferred Retirements With Future Augmentation	18,090		18,090
3. Former Members Without Vested Rights	284		284
4. Annuitants in MPRIF	144,906		144,906
5. Recipients Not in MPRIF	0		0
6. Total	$533,641	$135,008	$398,633

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$398,633
2. Current Assets (Table 1, E6)	431,134
3. UAAL (B1-B2)	($32,501)
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2031	$2,374,370
2. Supplemental Contribution Rate (B3/C1)	-1.37%

Correctional Employees Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

A.	UAAL AT BEGINNING OF YEAR	($27,079)
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	1. Normal Cost and Expenses	$18,951
	2. Contribution	(16,648)
	3. Interest on A, B1 and B2	(2,204)
	4. Total (B1+B2+B3)	$99
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	($26,980)
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	1. Salary Increases	($12,263)
	2. Investment Return	(2,628)
	3. MPRIF Mortality	(3,332)
	4. Mortality of Other Benefit Recipients	0
	5. Other Items	12,702
	6. Total	($5,521)
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	($32,501)
F.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGE IN ACTUARIAL METHODS	0
G.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	0
H.	UAAL AT END OF YEAR (E+F+G)	($32,501)

Correctional Employees Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 2001

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 352		
1. Employee Contributions	5.69%	$7,274
2. Employer Contributions	7.98%	10,201
3. Total	13.67%	$17,475
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	10.85%	$13,873
b. Disability Benefits	1.25%	1,597
c. Survivors	0.27%	340
d. Deferred Retirement Benefits	1.31%	1,679
e. Refunds Due to Death or Withdrawal	1.31%	1,672
f. Total	14.99%	$19,161
2. Supplemental Contribution Amortization by July 1, 2031 of UAAL	-1.37%	(1,751)
3. Allowance for Expenses	0.19%	243
4. Total	13.81%	$17,653
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	-0.14%	($178)

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 2001 is $127,835.

Correctional Employees Retirement Fund

Summary of Actuarial Assumptions and Methods

Interest:	**Pre-Retirement:** 8.5% per annum **Post-Retirement:** 8.5% per annum
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 6% accounted for by using a 6% post-retirement assumption.
Salary Increases:	Reported salary at valuation date increased according to the rate table on pages 18 and 19 to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for new Members.
Mortality:	**Pre-Retirement:** Male - 1983 GAM (Males -1) Female - 1983 GAM (Females) **Post-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

Separation:	Graded rates based on actual experience developed by the June 30, 1997 experience analysis. Rates are shown in rate table.
Disability:	Rates as shown in rate table.
Administrative 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 6.0% retroactive salary scale. Only earnings history while in state service is used. Future Social Security benefits replace the same proportion of salary as at present.
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:	Market Value less a percentage of the Unrecognized Asset Return determined at the close of each of the four preceding fiscal years. Unrecognized Asset Return is the difference between actual net return on Market Value of Assets and the asset return expected during that fiscal year (based on the assumed interest rate employed in the July 1 Actuarial Valuation of the fiscal year). Transition rules apply between July 1, 2000 and July 1, 2003, when the method is fully in effect.
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. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.

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:	5.69% of salary.
Employer:	7.98% of salary.
Allowable Service:	Service during which Member contributions were made. May also include certain leaves of absence, military service and periods while temporary Worker's Compensation is paid.
Salary:	Includes wages, allowances and fees. Excludes lump-sum payments at separation and reduced salary while receiving Worker's Compensation benefits.
Average Salary:	Average of the five highest successive years of salary. Average Salary is based on all Allowable Service if less than five years.

RETIREMENT

Normal Retirement Benefit:	
Eligibility:	Age 55 and three years of Allowable Service under the Correctional and General Plans. Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.
Amount:	2.4% of Average Salary for each year of Allowable Service, pro rata for completed months.

***Early Retirement Benefit*:**

Eligibility:	Age 50 and three years of Allowable Service.
Amount:	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date reduced by 2/10% per month 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. 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 65 or the five-year anniversary of the effective date of the disability benefit, whichever is later. Payments stop 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 65 or the five-year anniversary of the effective date of the disability benefit, whichever is later. Payments stop 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

No significant changes in plan provisions were recognized for this valuation.

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)
07/01/1991	105,925	112,171	6,246	94.43%	43,429	14.38%
07/01/1992	121,051	123,515	2,464	98.01%	47,592	5.18%
07/01/1993	135,939	134,280	(1,659)	101.24%	52,122	-3.18%
07/01/1994	148,163	152,702	4,539	97.03%	54,673	8.30%
07/01/1995	165,427	153,491	(11,936)	107.78%	66,939	-17.83%
07/01/1996	193,833	170,959	(22,874)	113.38%	72,959	-31.35%
07/01/1997	241,916	212,638	(29,278)	113.77%	112,408	-26.05%
07/01/1998	295,291	261,869	(33,422)	112.76%	105,796	-31.59%
07/01/1999	335,408	307,408	(28,000)	109.11%	106,131	-26.38%
07/01/2000	386,964	359,885	(27,079)	107.52%	112,587	-24.05%
07/01/2001	431,134	398,633	(32,501)	108.15%	120,947	-26.87%

TABLE 15

Correctional Employees Retirement Fund

SCHEDULE OF EMPLOYER CONTRIBUTIONS
(dollars in thousands)

Year Ended June 30	Actuarially Required Contribution Rate (A)	Actual Covered Payroll (B)	Actual Member Contributions (C)	Annual Required Contribution [(A) x (B)] - (C)	Actual Employer Contribution*	Percentage Contributed
1991	10.73%	43,429	2,128	2,532	2,731	107.86%
1992	10.82%	47,592	2,332	2,817	2,955	104.90%
1993	11.41%	52,122	2,554	3,393	3,217	94.81%
1994	10.97%	54,673	2,679	3,319	3,355	101.08%
1995	11.30%	66,939	3,280	4,284	4,195	97.92%
1996	11.11%	72,959	3,575	4,531	4,559	100.62%
1997	11.21%	112,408	5,508	7,093	9,129	128.70%
1998	12.49%	105,796	5,954	7,260	8,146	112.20%
1999	12.99%	106,131	6,378	7,408	8,172	110.31%
2000	13.66% **	112,587	6,526	8,853	8,984	101.48%
2001	13.72% ***	120,947	6,996	9,598	9,652	100.56%
2002	13.81%					

* Includes contributions from other sources (if applicable).

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

***Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 13.34%

Legislators Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 2001

MILLIMAN USA

A MILLIMAN GLOBAL FIRM

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December 7, 2001

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, 2001.

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.

We, Thomas K. Custis and William V. Hogan, are actuaries for Milliman USA. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Milliman USA

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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Legislators Retirement Fund

Report Highlights

(dollars in thousands)

	07/01/2000 Valuation	07/01/2001 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 3A % of Payroll	9.00%	9.00%
2. Required Contributions - Chapter 356 % of Payroll	55.88%	60.14%
3. Sufficiency (Deficiency): (A.1. - A.2.)	-46.88%	-51.14%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$37,265	$42,608
b. Current Benefit Obligations (Table 8)	$66,941	$72,588
c. Funding Ratio: (a/b)	55.67%	58.70%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$37,265	$42,608
b. Actuarial Accrued Liability (Table 9)	$69,364	$75,072
c. Funding Ratio: (a/b)	53.72%	56.76%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$43,343	$48,265
b. Current and Expected Future Benefit Obligations	$75,442	$80,729
c. Funding Ratio: (a/b)	57.45%	59.79%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	173	139
b. Projected Annual Earnings	$6,043	$5,646
c. Average Annual Earnings (Projected $)	$34,932	$40,622
d. Average Age	53.8	54.6
e. Average Service	11.8	13.0
2. Others		
a. Service Retirements (Table 4)	210	226
b. Survivors (Table 5)	70	67
c. Disability Retirements (Table 6)	0	0
d. Deferred Retirements (Table 7)	90	102
e. Terminated Other Non-vested (Table 7)	3	6
f. Total	373	401

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 58.70%. The corresponding ratio for the prior year was 55.67%.
- 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 2001 the ratio is 56.76%, which is an increase from the 2000 value of 53.72%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 59.79% shows that the current statutory contributions are inadequate.

Asset Information (Tables 1 and 2)

While Minnesota Statutes have changed the specified method for determination of "Current Assets," the new smoothing methodology is not applicable to this plan.

This plan has only two reported assets – MPRIF reserves and receivable non-segregated member deposits. Each of these assets is valued on an "as reported" basis.

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

Actuarial Balance Sheet (Table 8)

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

The Current Benefit Obligation used to measure current funding levels is calculated as follows:

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

GASB Disclosure

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

Actuarial Cost Method (Table 9)

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

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

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

The payments will increase 5.00% each year because that is the assumed rate of increase in payroll. Although the payment schedule will be adequate to amortize the existing unfunded, the lower payments in the earlier years will not be sufficient to cover the interest on the unfunded liability. After a few years, the annual payment will cover the interest and also repay a portion of the unfunded.

Source of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

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

Table 11 shows the Plan has a contribution deficiency since the Statutory Contribution Rate is 9.00% compared to the Required Contribution Rate of 60.14%.

Changes in Actuarial Assumptions

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

Changes in Plan Provisions

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

Legislators Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 2001

	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	36,306	36,306
6. Other	6,987	6,987
Subtotal	$43,293	$43,293
B. ASSETS RECEIVABLE	3	3
C. LIABILITIES	(688)	(688)
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	36,306	36,306
2. Member Reserves	6,924	6,924
3. Other Non-MPRIF Reserves	(622)	(622)
4. Total Assets Available for Benefits	$42,608	$42,608

E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
1. Market Value of Assets Available for Benefits (D4)		$42,608
2. Unrecognized Asset Returns (UAR)		
a. June 30, 2001	$0	
b. June 30, 2000	0	
c. June 30, 1999	0	
3. UAR Adjustment: .80 * (E2.a) + .60 * (E2.b) + .30 * (E2.c)		0
4. Actuarial Value of Assets (E1 - E3) (Same as "Current Assets")		42,608

Legislators Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

	Non-MPRIF Assets	MPRIF Reserve	Market Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$6,331	$30,934	$37,265
B. ADDITIONS			
1. Member Contributions	$527	$0	$527
2. Employer Contributions	5,039	0	5,039
3. Contributions From Other Sources	0	0	0
4. MPRIF Income	0	4,764	4,764
5. Net Investment Income			
a. Interest and Dividends	0	0	0
b. Net Realized Gain (Loss)	0	0	0
c. Net Change in Unrealized Gain (Loss)	0	0	0
d. Investment Expenses	0	0	0
e. **Net Subtotal**	0	0	0
6. Other	2	0	0
7. Total Additions	$5,568	$4,764	$10,332
C. OPERATING EXPENSES			
1. Service Retirements	$589	$4,267	$4,856
2. Disability Benefits	0	0	0
3. Survivor Benefits	0	0	0
4. Refunds	72	0	72
5. Administrative Expenses	29	0	29
6. Other	32	0	32
7. Total Disbursements	$722	$4,267	$4,989
D. OTHER CHANGES IN RESERVES			
1. Annuities Awarded	(4,216)	4,216	0
2. Mortality Gain/Loss	(659)	659	0
3. Total Other Changes	(4,875)	4,875	0
E. ASSETS AVAILABLE AT END OF PERIOD	$6,302	$36,306	$42,608

F. DETERMINATION OF CURRENT YEAR UNRECOGNIZED ASSET RETURN	
1. Average Balance	
(a) Non-MPRIF Assets Available at Beginning of Period Less Non-Segregated Member Deposits	0
(b) Non-MPRIF Assets Available at End of Period* Less Non-Segregated Member Deposits	0
(c) Average Balance { [F1.a + F1.b - B5.e - B6] / 2 }	0
2. Expected Return: .085 * F1.c	0
3. Actual Return	0
4. Current Year Unrecognized Asset Return: F3 - F2	0

** Before adjustment for MPRIF mortality gain/loss*

Legislators Retirement Plan

Active Members as of June 30, 2001

	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	1	0	0	0	0	0	0	1
35-39	1	1	6	1	0	0	0	0	9
40-44	0	3	5	4	0	0	0	0	12
45-49	0	1	11	6	0	0	0	0	18
50-54	0	5	10	10	3	3	1	0	32
55-59	0	4	4	7	4	4	3	2	28
60-64	0	3	5	3	2	3	3	0	19
65+	0	1	6	3	2	4	2	2	20
ALL	1	19	47	34	11	14	9	4	139

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	41,305	0	0	0	0	0	0	41,305
35-39	43,909	40,315	39,388	38,925	0	0	0	0	39,942
40-44	0	38,925	38,573	31,944	0	0	0	0	36,451
45-49	0	40,315	39,120	39,134	0	0	0	0	39,191
50-54	0	36,076	38,633	38,256	39,903	37,759	40,315	0	38,205
55-59	0	38,925	39,272	36,173	40,231	39,520	39,851	40,546	38,773
60-64	0	33,007	38,712	39,851	39,405	40,179	38,906	0	38,326
65+	0	40,315	39,388	40,137	38,925	40,810	38,925	40,810	39,881
ALL	43,909	37,586	38,996	37,566	39,754	39,652	39,382	40,678	38,688

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	43	714	1,832	1,277	437	555	354	162	5,377

Legislators Retirement Plan

Service Retirements as of June 30, 2001

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
	Years Retired							
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	6	4	0	0	0	0	0	10
60-64	9	20	1	0	0	0	0	30
65-69	4	18	28	0	0	0	0	50
70-74	0	12	27	21	0	0	0	60
75-79	0	0	5	5	28	1	0	39
80-84	0	0	0	1	8	15	0	24
85+	0	0	0	1	0	3	9	13
ALL	19	54	61	28	36	19	9	226

Average Annual Benefit

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
	Years Retired							
<50	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0
55-59	8,163	8,302	0	0	0	0	0	8,219
60-64	16,421	15,297	22,281	0	0	0	0	15,867
65-69	32,106	17,883	20,191	0	0	0	0	20,313
70-74	0	16,872	22,626	17,661	0	0	0	19,738
75-79	0	0	18,023	10,531	19,208	21,393	0	18,000
80-84	0	0	0	33,329	23,024	28,922	0	27,140
85+	0	0	0	11,054	0	25,030	16,483	18,038
ALL	17,115	15,991	21,125	16,711	20,056	27,911	16,483	19,230

Total Annual Benefit (in thousands) by Years Retired

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	325	863	1,288	467	722	530	148	4,345

Legislators Retirement Plan

Survivors as of June 30, 2001

	Years Since Death							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	0	2	0	0	0	0	0	2
50-54	0	1	0	0	0	0	0	1
55-59	1	0	1	0	1	1	0	4
60-64	0	2	2	1	0	1	0	6
65-69	1	1	2	0	0	0	0	4
70-74	0	3	5	1	0	0	2	11
75-79	0	1	2	2	1	1	1	8
80-84	0	2	3	4	0	1	1	11
85+	0	3	6	4	0	1	6	20
ALL	2	15	21	12	2	5	10	67

Average Annual Benefit

	Years Since Death							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	0	1,310	0	0	0	0	0	1,310
50-54	0	5,240	0	0	0	0	0	5,240
55-59	15,084	0	8,603	0	42,986	13,311	0	19,996
60-64	0	9,684	14,853	10,193	0	21,487	0	13,459
65-69	54,579	1,731	6,946	0	0	0	0	17,551
70-74	0	16,420	7,099	15,960	0	0	10,786	11,117
75-79	0	38,514	8,475	5,602	6,360	3,256	19,337	11,953
80-84	0	8,363	9,654	14,532	0	5,237	3,200	10,205
85+	0	15,145	9,811	9,145	0	16,563	9,542	10,735
ALL	34,832	11,926	9,165	11,005	24,673	11,971	10,136	11,697

Total Annual Benefit (actual dollars) by Years Since Death

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	69,664	178,890	192,465	132,060	49,346	59,855	101,360	783,699

Legislators Retirement Plan

Disability Retirements as of June 30, 2001

	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

		Actives	Terminated Deferred Retirement	Terminated Other Non-Vested
A.	ON JUNE 30, 2000	173	90	3
B.	ADDITIONS	4	16	3
C.	DELETIONS			
	1. Service Retirement	(8)	(11)	0
	2. Disability	0	0	0
	3. Death	0	0	0
	4. Terminated - Deferred	(14)	0	0
	5. Terminated - Refund	(1)	(1)	0
	6. Terminated - Other Non-Vested	(3)	0	0
	7. Returned as Active	0	(2)	(2)
	8. Transferred to Other Fund	0	0	(1)
D.	DATA ADJUSTMENTS	(12)	10	3
	Vested	117		
	Non-Vested	22		
E.	TOTAL ON JUNE 30, 2001	139	102	6

		Recipients: Retirement Annuitants	Recipients: Disabled	Recipients: Survivors
A.	ON JUNE 30, 2000	210	0	70
B.	ADDITIONS	19	0	2
C.	DELETIONS			
	1. Service Retirement	0	0	0
	2. Death	(2)	0	(4)
	3. Annuity Expired	0	0	0
	4. Returned as Active	0	0	0
D.	DATA ADJUSTMENTS	(1)	0	(1)
E.	TOTAL ON JUNE 30, 2001	226	0	67

Legislators Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 2001

		Non-Vested	Vested	Total
A.	CURRENT ASSETS (TABLE 1, E6)			$42,608
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			$0
	2. Present Value of Future Normal Costs			5,657
	3. Total Expected Future Assets			$5,657
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$48,265
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	1. Benefit Recipients			
	a. Retirement Annuities		$41,315	$41,315
	b. Disability Benefits		0	0
	c. Surviving Spouse and Child Benefits		6,600	6,600
	2. Deferred Retirements with Future Augmentation		8,309	8,309
	3. Former Members without Vested Rights		69	69
	4. Active Members			
	a. Retirement Annuities	611	14,003	14,614
	b. Disability Benefits	0	0	0
	c. Survivor's Benefits	198	0	198
	d. Deferred Retirements	120	1,330	1,450
	e. Refund Liability Due to Death or Withdrawal	0	33	33
	5. Total Current Benefit Obligations	$929	$71,659	$72,588
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			$8,141
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$80,729
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			$29,980
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			$32,464

Legislators Retirement Fund

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

(dollars in thousands)

JULY 1, 2001

	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	$21,730	$4,026	$17,704
b. Disability Benefits	0	0	0
c. Survivor's Benefit	301	130	171
d. Deferred Retirements	2,348	1,058	1,290
e. Refunds Due to Death or Withdrawal	57	443	(386)
f. Total	$24,436	$5,657	$18,779
2. Deferred Retirements With Future Augmentation	8,309		8,309
3. Former Members Without Vested Rights	69		69
4. Annuitants in MPRIF	36,306		36,306
5. Recipients Not in MPRIF	11,609		11,609
6. Total	$80,729	$5,657	$75,072

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$75,072
2. Current Assets (Table 1, E6)	42,608
3. UAAL (B1-B2)	$32,464
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020	$77,671
2. Supplemental Contribution Rate (B3/C1)	41.80%

Legislators Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

A.	UAAL AT BEGINNING OF YEAR	$32,099
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	1. Normal Cost and Expenses	$1,128
	2. Contribution	(5,566)
	3. Interest on A, B1 and B2	2,540
	4. Total (B1+B2+B3)	($1,898)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	$30,201
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	1. Salary Increases	$569
	2. Investment Return	562
	3. MPRIF Mortality	658
	4. Mortality of Other Benefit Recipients	(553)
	5. Other Items	1,027
	6. Total	$2,263
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	$32,464
F.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGE IN ACTUARIAL METHODS	0
G.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	0
H.	UAAL AT END OF YEAR (E+F+G)	$32,464

Legislators Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 2001

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 3A		
1. Employee Contributions	9.00%	$508
2. Employer Contributions	0.00%	0
3. Total	9.00%	$508

* 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	13.44%	$759
b. Disability Benefits	0.00%	0
c. Survivors	0.48%	27
d. Deferred Retirement Benefits	2.66%	150
e. Refunds Due to Death or Withdrawal	1.28%	72
f. Total	17.86%	$1,008
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	41.80%	2,360
3. Allowance for Expenses	0.48%	27
4. Total	60.14%	$3,395
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	-51.14%	($2,887)

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 2001 is $5,646.

Legislators Retirement Fund

Summary of Actuarial Assumptions and Methods

GENERAL

Interest:	**Pre-Retirement**: 8.5% per annum **Post-Retirement**: 8.5% per annum
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 6% accounted for by using a 6% post-retirement assumption. For those not yet in pay status, a 5% post-retirement interest rate is used to account for the one-time adjustment applicable at retirement.
Salary Increases:	5.0% annually
Mortality:	**Pre-Retirement**: Male - 1983 GAM (Males -4) Female - 1983 GAM (Females -2) **Post-Retirement**: Male - 1983 GAM (Males) Female - 1983 GAM (Females) **Post-Disability**: Male - 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
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:	Since the only assets of this plan are MPRIF assets plus non-segregated member deposits identified as receivables of the plan, all assets are valued on an "as reported" basis.
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. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.

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

No significant changes in plan provisions were recognized for this valuation.

TABLE 14

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)
07/01/1991	14,694	30,403	15,709	48.33%	7,078	221.94%
07/01/1992	15,160	33,224	18,064	45.63%	6,556	275.53%
07/01/1993	17,169	36,801	19,632	46.65%	7,322	268.12%
07/01/1994	18,738	45,448	26,710	41.23%	6,589	405.37%
07/01/1995	21,213	50,255	29,042	42.21%	7,056	411.59%
07/01/1996	22,532	54,225	31,693	41.55%	6,267	505.71%
07/01/1997	25,678	60,055	34,377	42.76%	7,767	442.60%
07/01/1998	31,212	62,928	31,716	49.60%	6,802	466.27%
07/01/1999	33,474	66,418	32,944	50.40%	7,490	439.84%
07/01/2000	37,265	69,364	32,099	53.72%	5,808	552.67%
07/01/2001	42,608	75,072	32,464	56.76%	5,858	554.18%

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%
1998	48.03%	6,802	612	2,655	5,199	195.82%
1999	47.19%	7,490	674	2,861	2,091	73.09%
2000	52.72%	5,808	523	2,539	3,192	125.72%
2001	47.26%	5,858	527	2,241	5,039	224.85%
2002	60.14%					

* Includes contributions from other sources (if applicable).

Elective State Officers Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 2001

MILLIMAN USA

A MILLIMAN GLOBAL FIRM

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December 7, 2001

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, 2001.

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.

We, Thomas K. Custis and William V. Hogan, are actuaries for Milliman USA. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Milliman USA

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

Report Highlights

(dollars in thousands)

	07/01/2000 Valuation	07/01/2001 Valuation	
A. CONTRIBUTIONS (Table 11)			
1. Statutory Contributions - Chapter 352C	0	0	*
% of Payroll			
2. Required Contributions - Chapter 356	340	371	*
% of Payroll			
3. Sufficiency (Deficiency): (A.1. - A.2.)	(340)	(371)	*
B. FUNDING RATIOS			
1. Accrued Benefit Funding Ratio			
a. Current Assets (Table 1)	$199	$201	
b. Current Benefit Obligations (Table 8)	$3,535	$3,775	
c. Funding Ratio: (a/b)	5.63%	5.32%	
2. Accrued Liability Funding Ratio			
a. Current Assets (Table 1)	$199	$201	
b. Actuarial Accrued Liability (Table 9)	$3,535	$3,775	
c. Funding Ratio: (a/b)	5.63%	5.32%	
3. Projected Benefit Funding Ratio (Table 8)			
a. Current and Expected Future Assets	$199	$201	
b. Current and Expected Future Benefit Obligations	$3,535	$3,775	
c. Funding Ratio: (a/b)	5.63%	5.32%	
C. PLAN PARTICIPANTS			
1. Active Members			
a. Number (Table 3)	0	0	
b. Projected Annual Earnings	$0	$0	
c. Average Annual Earnings (Projected $)	$0	$0	
d. Average Age	0.0	0.0	
e. Average Service	0.0	0.0	
2. Others			
a. Service Retirements (Table 4)	8	8	
b. Survivors (Table 5)	5	5	
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	17	17	

* These amounts are in thousands of dollars.

Commentary

Purpose

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

Report Highlights

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

- The Accrued Benefit Funding Ratio is a measure of current funding status and, when viewed over a period of years, presents a view of the funding progress. It is based upon benefits which have been earned by service to the valuation date. This year's ratio is 5.32%. The corresponding ratio for the prior year was 5.63%.
- 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 2001 the ratio is 5.32%, which is a decrease from the 2000 value of 5.63%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 5.32% shows that the current statutory contributions are inadequate.

Asset Information (Tables 1 and 2)

The only assets of this plan are non-segregated member contributions. These assets are shown on an "as reported" basis. No asset smoothing methodology would be appropriate.

Actuarial Balance Sheet (Table 8)

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

The Current Benefit Obligation used to measure current funding levels is calculated as follows:

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

GASB Disclosure

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

Actuarial Cost Method (Table 9)

The approach used by the State of Minnesota to determine contribution sufficiency is the Entry Age Normal Actuarial Cost Method. The primary characteristic of this method is that it allocates costs as a level percentage of payroll. Since this plan has no active members, the costs are shown as level dollar amounts.

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

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

Source of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

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

Table 11 shows the Plan has a contribution deficiency since the Statutory Contribution Amount is $0 compared to the Required Contribution Amount of $371,000.

Changes in Actuarial Assumptions

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

Changes in Plan Provisions

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

Elective State Officers Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 2001

		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	202	202
	Subtotal	$202	$202
B.	ASSETS RECEIVABLE	0	0
C.	LIABILITIES	(1)	(1)
D.	NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
	1. MPRIF Reserves	0	0
	2. Member Reserves	194	194
	3. Other Non-MPRIF Reserves	7	7
	4. Total Assets Available for Benefits	$201	$201

E.	DETERMINATION OF ACTUARIAL VALUE OF ASSETS		
	1. Market Value of Assets Available for Benefits (D4)		$201
	2. Unrecognized Asset Returns (UAR)		
	a. June 30, 2001	$0	
	b. June 30, 2000	0	
	c. June 30, 1999	0	
	3. UAR Adjustment: .80 * (E2.a) + .60 * (E2.b) + .30 * (E2.c)		0
	4. Actuarial Value of Assets (E1 - E3) (Same as "Current Assets")		201

Elective State Officers Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

	Non-MPRIF Assets	MPRIF Reserve	Market Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$199	$0	$199
B. ADDITIONS			
1. Member Contributions	$0	$0	$0
2. Employer Contributions	0	0	0
3. Contributions From Other Sources	330	0	330
4. MPRIF Income	0	0	0
5. Net Investment Income			
a. Interest and Dividends	0	0	0
b. Net Realized Gain (Loss)	0	0	0
c. Net Change in Unrealized Gain (Loss)	3	0	3
d. Investment Expenses	0	0	0
e. **Net Subtotal**	3	0	3
6. Other	0	0	0
7. Total Additions	$333	$0	$333
C. OPERATING EXPENSES			
1. Service Retirements	$330	$0	$330
2. Disability Benefits	0	0	0
3. Survivor Benefits	0	0	0
4. Refunds	0	0	0
5. Administrative Expenses	1	0	1
6. Other	0	0	0
7. Total Disbursements	$331	$0	$331
D. OTHER CHANGES IN RESERVES			
1. Annuities Awarded	0	0	0
2. Total Other Changes	0	0	0
E. ASSETS AVAILABLE AT END OF PERIOD	$201	$0	$201

F. DETERMINATION OF CURRENT YEAR UNRECOGNIZED ASSET RETURN	
1. Average Balance	
(a) Assets Available at Beginning of Period Less Non-Segregated Member Deposits	0
(b) Assets Available at End of Period Less Non-Segregated Member Deposits	0
(c) Average Balance { [F1.a + F1.b - B5.e - B6] / 2 }	0
2. Expected Return: .085 * F1.c	0
3. Actual Return	0
4. Current Year Unrecognized Asset Return: F3 - F2	0

Elective State Officers Retirement Plan

Active Members as of June 30, 2001

	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	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0
45-49	0	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	0	0
ALL	0	0	0	0	0	0	0	0	0

Average Annual Earnings

	Years of Service								
Age	≤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	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0
45-49	0	0	0	0	0	0	0	0	0
50-54	0	0	0	0	0	0	0	0	0
55-59	0	0	0	0	0	0	0	0	0
60-64	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	0	0
ALL	0	0	0	0	0	0	0	0	0

Prior Fiscal Year Earnings (in Actual Dollars) by Years of Service

Age	≤1	1-4	5-9	10-14	15-19	20-24	25-29	30+	ALL
All	0	0	0	0	0	0	0	0	0

Elective State Officers Retirement Plan

Service Retirements as of June 30, 2001

	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	0	0	0	0	0	0	0
65-69	0	2	1	0	0	0	0	3
70-74	0	2	3	0	0	0	0	5
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	4	4	0	0	0	0	8

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	0	0	0	0	0	0	0
65-69	0	59,354	7,131	0	0	0	0	41,946
70-74	0	20,754	21,947	0	0	0	0	21,470
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	40,054	18,243	0	0	0	0	29,149

Total Annual Benefit (actual dollars) by Years Retired

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	0	160,216	72,972	0	0	0	0	233,192

Elective State Officers Retirement Plan

Survivors as of June 30, 2001

Age	Years Since Death ≤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	1	0	0	0	0	1
65-69	0	0	0	0	0	0	0	0
70-74	0	0	1	0	0	0	0	1
75-79	0	0	0	0	0	0	0	0
80-84	0	0	1	0	0	0	0	1
85+	0	0	0	1	0	1	0	2
ALL	0	0	3	1	0	1	0	5

Average Annual Benefit

Age	Years Since Death ≤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	7,131	0	0	0	0	7,131
65-69	0	0	0	0	0	0	0	0
70-74	0	0	41,100	0	0	0	0	41,100
75-79	0	0	0	0	0	0	0	0
80-84	0	0	19,253	0	0	0	0	19,253
85+	0	0	0	35,551	0	8,939	0	22,245
ALL	0	0	22,495	35,551	0	8,939	0	22,395

Total Annual Benefit (actual dollars) by Years Since Death

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	0	0	67,485	35,551	0	8,939	0	111,975

Elective State Officers Retirement Plan

Disability Retirements as of June 30, 2001

	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, 2000	0	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	0		
Non-Vested	0		
E. TOTAL ON JUNE 30, 2001	0	4	0

	Recipients: Retirement Annuitants	Recipients: Disabled	Recipients: Survivors
A. ON JUNE 30, 2000	8	0	5
B. ADDITIONS	0	0	0
C. DELETIONS			
1. Service Retirement	0	0	0
2. Death	0	0	0
3. Annuity Expired	0	0	0
4. Returned as Active	0	0	0
D. DATA ADJUSTMENTS	0	0	0
E. TOTAL ON JUNE 30, 2001	8	0	5

Elective State Officers Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 2001

		Non-Vested	Vested	Total
A.	CURRENT ASSETS (TABLE 1, E6)			$201
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			$0
	2. Present Value of Future Normal Costs			0
	3. Total Expected Future Assets			$0
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$201
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	1. Benefit Recipients			
	a. Retirement Annuities		$2,301	$2,301
	b. Disability Benefits		0	0
	c. Surviving Spouse and Child Benefits		851	851
	2. Deferred Retirements with Future Augmentation		623	623
	3. Former Members without Vested Rights		0	0
	4. Active Members			
	a. Retirement Annuities	0	0	0
	b. Disability Benefits	0	0	0
	c. Survivor's Benefits	0	0	0
	d. Deferred Retirements	0	0	0
	e. Refund Liability Due to Death or Withdrawal	0	0	0
	5. Total Current Benefit Obligations	$0	$3,775	$3,775
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			$0
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$3,775
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			$3,574
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			$3,574

Elective State Officers Retirement Fund

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

(dollars in thousands)

JULY 1, 2001

	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	$0	$0	$0
b. Disability Benefits	0	0	0
c. Survivor's Benefit	0	0	0
d. Deferred Retirements	0	0	0
e. Refunds Due to Death or Withdrawal	0	0	0
f. Total	$0	$0	$0
2. Deferred Retirements With Future Augmentation	623		623
3. Former Members Without Vested Rights	0		0
4. Annuitants in MPRIF	0		0
5. Recipients Not in MPRIF	3,152		3,152
6. Total	$3,775	$0	$3,775

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$3,775
2. Current Assets (Table 1, E6)	201
3. UAAL (B1-B2)	$3,574
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Current UAAL to be Amortized by July 1, 2020	$3,574
2. Supplemental Contribution Amount	370

Note: If non-segregated member reserves were not counted as assets, the UAAL would be $3,775, resulting in a Supplemental Contribution Amount of 391.

Elective State Officers Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

A.	UAAL AT BEGINNING OF YEAR	$3,336
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	1. Normal Cost and Expenses	$2
	2. Contribution	(330)
	3. Interest on A, B1 and B2	270
	4. Total (B1+B2+B3)	($58)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	$3,278
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	1. Salary Increases	$0
	2. Investment Return	14
	3. MPRIF Mortality	0
	4. Mortality of Other Benefit Recipients	65
	5. Other Items	217
	6. Total	$296
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	$3,574
F.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGE IN ACTUARIAL METHODS	0
G.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	0
H.	UAAL AT END OF YEAR (E+F+G)	$3,574

Elective State Officers Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 2001

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

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

	Percent of Payroll	Dollar Amount
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits		$0
b. Disability Benefits		0
c. Survivors		0
d. Deferred Retirement Benefits		0
e. Refunds Due to Death or Withdrawal		0
f. Total		$0
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL		370
3. Allowance for Expenses		1
4. Total		$371
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]		($371)

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 2001 is $0.

The deficiency amount shown above is calculated based on reported assets which include a receivable of 202 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 392.

Elective State Officers Retirement Fund

Summary of Actuarial Assumptions and Methods

Interest:	**Pre-Retirement**: 8.5% per annum **Post-Retirement**: 8.5% per annum
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 6% accounted for by using a 6% post-retirement assumption. For those not yet in pay status, a 5% post-retirement discount rate is used to account for the one-time adjustment applicable at retirement.
Salary Increases:	5.0% annually
Mortality:	**Pre-Retirement**: Male - 1983 GAM (Males -4) Female - 1983 GAM (Females -2) **Post-Retirement**: Male - 1983 GAM (Males) Female - 1983 GAM (Females) **Post-Disability**: Male - 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
***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*:**	Only plan assets are non-segregated member contributions which theoretically serve to offset state costs. No market smoothing is applicable.
***Payment on the Unfunded Actuarial Accrued Liability*:**	A level dollar amount each year to the statutory amortization date.

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

No significant changes in plan provisions were recognized for this valuation.

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)
07/01/1991	308	2,249	1,941	13.69%	422	459.95%
07/01/1992	334	2,380	2,046	14.03%	378	541.27%
07/01/1993	322	2,689	2,367	11.97%	500	473.40%
07/01/1994	361	2,848	2,487	12.68%	411	605.11%
07/01/1995	378	2,948	2,570	12.82%	422	609.00%
07/01/1996	412	2,983	2,571	13.81%	456	563.82%
07/01/1997	456	3,214	2,758	14.19%	467	590.58%
07/01/1998	500	3,369	2,869	14.84%	461	622.34%
07/01/1999	198	3,373	3,175	5.87%	291	1091.07%
07/01/2000	199	3,535	3,336	5.63%	0	N/A
07/01/2001	201	3,775	3,574	5.32%	0	N/A

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%
1998	51.07%	461	42	193	175	90.67%
1999	51.66%	291	26	124	40	32.26%
2000	321 **	0	0	0	306	N/A
2001	340	0	0	0	330	N/A
2002	371					

* Includes contributions from other sources (if applicable).
** Shown in thousands of dollars for years after 1999.

Judges Retirement Fund
ACTUARIAL VALUATION REPORT

July 1, 2001

A MILLIMAN GLOBAL FIRM

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December 7, 2001

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, 2001.

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.

We, Thomas K. Custis and William V. Hogan, are actuaries for Milliman USA. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Milliman USA

Thomas K. Custis

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

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Consulting Actuary

TKC/WVH/bh

Judges Retirement Fund

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Judges Retirement Fund

Report Highlights

(dollars in thousands)

	07/01/2000 Valuation	07/01/2001 Valuation
A. CONTRIBUTIONS (Table 11)		
1. Statutory Contributions - Chapter 490 % of Payroll	28.50%	27.95%
2. Required Contributions - Chapter 356 % of Payroll	27.03%	26.72%
3. Sufficiency (Deficiency): (A.1. - A.2.)	1.47%	1.23%
B. FUNDING RATIOS		
1. Accrued Benefit Funding Ratio		
a. Current Assets (Table 1)	$111,113	$123,589
b. Current Benefit Obligations (Table 8)	$146,921	$158,297
c. Funding Ratio: (a/b)	75.63%	78.07%
2. Accrued Liability Funding Ratio		
a. Current Assets (Table 1)	$111,113	$123,589
b. Actuarial Accrued Liability (Table 9)	$153,660	$165,244
c. Funding Ratio: (a/b)	72.31%	74.79%
3. Projected Benefit Funding Ratio (Table 8)		
a. Current and Expected Future Assets	$200,342	$213,754
b. Current and Expected Future Benefit Obligations	$194,424	$208,685
c. Funding Ratio: (a/b)	103.04%	102.43%
C. PLAN PARTICIPANTS		
1. Active Members		
a. Number (Table 3)	282	292
b. Projected Annual Earnings	$28,186	$29,874
c. Average Annual Earnings (Projected $)	$99,949	$102,309
d. Average Age	54.4	54.5
e. Average Service	10.9	10.7
2. Others		
a. Service Retirements (Table 4)	153	155
b. Survivors (Table 5)	82	88
c. Disability Retirements (Table 6)	4	4
d. Deferred Retirements (Table 7)	9	14
e. Terminated Other Non-vested (Table 7)	2	1
f. Total	250	262

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 78.07%. The corresponding ratio for the prior year was 75.63%
- 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 2001 the ratio is 74.79%, which is an increase from the 2000 value of 72.31%.
- The Projected Benefit Funding Ratio is a measure of the adequacy or deficiency in the contribution level. This year's ratio of 103.51% verifies that the current statutory contributions are sufficient.

Asset Information (Tables 1 and 2)

Effective with the July 1, 2000 valuation of the fund, Minnesota Statutes require that the asset value used for actuarial purposes spread differences between actual return (measured on a market-value basis) and expected return on non-MPRIF assets over five years, in a manner similar to that already being used within the MPRIF. The previous method required under Minnesota Statutes recognized one third of the unrealized gains and losses. An Asset Valuation Method requirement exists because market values (which include all unrealized gains and losses) are typically volatile and can produce erratic changes in the contribution requirements from year to year. The intent of the change to the current method is to employ a more effective asset smoothing technique which is market-value based and which eliminates artificial bias related to manager style. The effective date of this requirement is July 1, 2000 with full transition to be accomplished as of July 1, 2003.

The calculation of the Actuarial Value of Assets is shown in Table 1 on lines E.1 to E.4. Actuarial Value of Assets is determined as:

> Market Value of Assets at June 30, 2001, *less*
>
> 80% of the current year Unrecognized Asset Return at July 1, 2001 (the difference between actual net return on Market Value of Assets between 06/30/2000 and 06/30/2001 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 2000 Actuarial Valuation); *less*

60% of the current year Unrecognized Asset Return at July 1, 2000 (the difference between actual net return on Market Value of Assets between 06/30/99 and 06/30/2000 and the asset return expected during that period based on the assumed interest rate employed in the July 1, 1999 Actuarial Valuation); *less*

30% of the Unrecognized Asset Return at July 1, 1999 (the difference between Market Value of Assets on 06/30/99 and the Actuarial Value of Assets used in the July 1, 1999 Actuarial Valuation).

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

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

Actuarial Balance Sheet (Table 8)

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

The Current Benefit Obligation used to measure current funding levels is calculated as follows:

- For Active Members – Salary and service are projected to retirement to determine benefits for each member and the ratio of credited service to total service establishes the portion of the projected benefit to be used in calculating the current funding level.
- For Non-Active Members – The discounted value of benefits, including augmentation in cases where benefits have not commenced.

GASB Disclosure

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

Actuarial Cost Method (Table 9)

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

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

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

The payments will increase 5.00% each year because that is the assumed rate of increase in payroll. Although the payment schedule will be adequate to amortize the existing unfunded, the lower payments in the earlier years will not be sufficient to cover the interest on the unfunded liability. After a few years, the annual payment will cover the interest and also repay a portion of the unfunded.

Source of Actuarial Gains and Losses (Table 10)

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

Contribution Sufficiency (Table 11)

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

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

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

Table 11 shows the Plan has a contribution sufficiency since the Statutory Contribution Rate is 28.50% compared to the Required Contribution Rate of 26.72%.

Changes in Actuarial Assumptions and Methods

All actuarial assumptions and methods listed in Table 12 are the same as those used in the prior valuation.

Changes in Plan Provisions

All plan provisions are the same as those used in the prior actuarial valuation of the Fund.

Judges Retirement Fund

Statement of Plan Net Assets

(dollars in thousands)

JULY 1, 2001

	Market Value	Cost Value
A. ASSETS IN TRUST		
1. Cash, Equivalents, Short-term Securities	$8,692	$8,692
2. Fixed Income	5,861	5,938
3. Equity	17,132	18,718
4. Real Estate	918	786
5. Equity in MPRIF	89,568	89,568
6. Other	0	0
Subtotal	$122,171	$123,702
B. ASSETS RECEIVABLE	11	11
C. LIABILITIES	(1,056)	(1,056)
D. NET ASSETS HELD IN TRUST FOR PENSION BENEFITS		
1. MPRIF Reserves	89,568	89,568
2. Member Reserves	15,157	15,157
3. Other Non-MPRIF Reserves	16,401	17,932
4. Total Assets Available for Benefits	$121,126	$122,657

E. DETERMINATION OF ACTUARIAL VALUE OF ASSETS

1. Market Value of Assets Available for Benefits (D4)		$121,126
2. Unrecognized Asset Returns (UAR)		
a. June 30, 2001	($4,168)	
b. June 30, 2000	426	
c. June 30, 1999	2,053	
3. UAR Adjustment: .80 * (E2.a) + .60 * (E2.b) + .30 * (E2.c)		(2,463)
4. Actuarial Value of Assets (E1 - E3) (Same as "Current Assets")		123,589

Judges Retirement Fund

Statement of Change In Plan Net Assets

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

	Non-MPRIF Assets	MPRIF Reserve	Market Value
A. ASSETS AVAILABLE AT BEGINNING OF PERIOD	$31,363	$81,323	$112,686
B. ADDITIONS			
1. Member Contributions	$2,162	$0	$2,162
2. Employer Contributions	5,790	0	5,790
3. Contributions From Other Sources	2,003	0	2,003
4. MPRIF Income	0	12,217	12,217
5. Net Investment Income			
a. Interest and Dividends	2,125	0	2,125
b. Net Realized Gain (Loss)	0	0	0
c. Net Change in Unrealized Gain (Loss)	(3,491)	0	(3,491)
d. Investment Expenses	(36)	0	(36)
e. **Net Subtotal**	(1,402)	0	(1,402)
6. Other	10	0	10
7. Total Additions	$8,563	$12,217	$20,780
C. OPERATING EXPENSES			
1. Service Retirements	$1,995	$10,233	$12,228
2. Disability Benefits	0	0	0
3. Survivor Benefits	0	0	0
4. Refunds	17	0	17
5. Administrative Expenses	41	0	41
6. Other	54	0	54
7. Total Disbursements	$2,107	$10,233	$12,340
D. OTHER CHANGES IN RESERVES			
1. Annuities Awarded	(5,265)	5,265	0
2. Mortality Gain/Loss	(996)	996	0
3. Total Other Changes	(6,261)	6,261	0
E. ASSETS AVAILABLE AT END OF PERIOD	$31,558	$89,568	$121,126

F. DETERMINATION OF CURRENT YEAR UNRECOGNIZED ASSET RETURN	
1. Average Balance	
(a) Non-MPRIF Assets Available at Beginning of Period	31,363
(b) Non-MPRIF Assets Available at End of Period*	32,554
(c) Average Balance { [F1.a + F1.b - B5.e - B6] / 2 }	32,655
2. Expected Return: .085 * F1.c	2,776
3. Actual Return	(1,392)
4. Current Year Unrecognized Asset Return: F3 - F2	(4,168)

** Before adjustment for MPRIF mortality gain/loss*

Table 3

JUDGES RETIREMENT FUND

Active Members as of June 30, 2001

Age	Years of Service ≤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	2	0	0	0	0	0	0	3
40-44	5	8	5	0	0	0	0	0	18
45-49	8	14	17	5	1	0	0	0	45
50-54	3	15	20	26	12	2	0	0	78
55-59	5	12	12	22	19	8	0	0	78
60-64	1	6	8	9	13	14	1	0	52
65+	0	0	2	5	2	8	1	0	18
ALL	23	57	64	67	47	32	2	0	292

Average Annual Earnings

Age	Years of Service ≤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	86,599	98,180	0	0	0	0	0	0	94,320
40-44	88,091	96,905	98,180	0	0	0	0	0	94,811
45-49	76,836	98,637	100,759	100,443	98,180	0	0	0	95,753
50-54	88,804	99,461	94,489	98,673	99,014	98,180	0	0	97,412
55-59	84,034	97,424	100,366	98,928	99,226	99,782	0	0	98,123
60-64	93,062	98,180	100,436	98,316	98,673	98,530	98,180	0	98,670
65+	0	0	104,589	99,161	98,180	100,870	98,180	0	100,360
ALL	83,539	98,291	98,604	98,877	98,952	99,406	98,180	0	97,559

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	1,921	5,602	6,310	6,624	4,650	3,180	196	0	28,487

Judges Retirement Fund

Service Retirements as of June 30, 2001

	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	4	3	1	0	0	0	0	8
65-69	5	14	1	0	0	0	0	20
70-74	1	17	22	5	0	0	0	45
75-79	0	1	20	16	2	0	0	39
80-84	0	0	0	14	6	0	0	20
85+	0	0	0	0	10	10	3	23
ALL	10	35	44	35	18	10	3	155

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	40,233	41,723	82,574	0	0	0	0	46,084
65-69	41,335	61,321	25,182	0	0	0	0	54,518
70-74	25,632	45,499	66,479	53,598	0	0	0	56,214
75-79	0	67,391	63,644	58,538	78,464	0	0	62,405
80-84	0	0	0	60,854	51,488	0	0	58,044
85+	0	0	0	0	71,654	75,350	61,823	71,979
ALL	39,324	52,130	64,618	58,759	65,689	75,350	61,823	59,606

Total Annual Benefit (in thousands) by Years Retired

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	393	1,824	2,843	2,056	1,182	753	185	9,238

Judges Retirement Fund

Survivors as of June 30, 2001

	Years Since Death							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	1	0	1	0	0	0	0	2
50-54	1	1	0	0	2	0	0	4
55-59	0	1	0	1	1	0	0	3
60-64	0	1	1	1	1	0	0	4
65-69	1	3	1	0	0	0	0	5
70-74	0	1	7	4	1	1	1	15
75-79	2	3	3	1	2	0	3	14
80-84	2	3	3	2	1	0	2	13
85+	0	5	3	2	0	3	15	28
ALL	7	18	19	11	8	4	21	88

Average Annual Benefit

	Years Since Death							
Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
<50	22,202	0	40,055	0	0	0	0	31,129
50-54	13,586	32,734	0	0	43,923	0	0	33,542
55-59	0	56,451	0	37,843	65,308	0	0	53,201
60-64	0	36,083	42,196	37,538	35,467	0	0	37,821
65-69	24,326	26,213	50,194	0	0	0	0	30,632
70-74	0	64,745	35,072	40,190	25,387	24,732	23,694	36,322
75-79	29,553	32,843	37,402	63,529	40,567	0	24,309	34,817
80-84	45,445	51,796	46,456	31,942	54,598	0	42,093	45,255
85+	0	48,412	24,353	40,481	0	34,893	29,189	33,521
ALL	30,016	42,479	36,978	40,411	43,718	32,353	29,459	36,587

Total Annual Benefit (actual dollars) by Years Since Death

Age	≤1	1-4	5-9	10-14	15-19	20-24	25+	All
All	210	764	702	444	349	129	618	3,219

Judges Retirement Fund

Disability Retirements as of June 30, 2001

	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	1	1	1	0	3
80-84	0	0	0	0	1	0	0	1
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	1	2	1	0	4

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	63,117	77,263	53,860	0	64,747
80-84	0	0	0	0	104,695	0	0	104,695
85+	0	0	0	0	0	0	0	0
ALL	0	0	0	63,117	90,979	53,860	0	74,734

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	0	63,117	181,958	53,860	0	298,936

Judges Retirement Fund

Reconciliation Of Members

		Actives	Terminated	
			Deferred Retirement	Other Non-Vested
A.	ON JUNE 30, 2000	282	9	2
B.	ADDITIONS	26	6	0
C.	DELETIONS			
	1. Service Retirement	(9)	(1)	0
	2. Disability	0	0	0
	3. Death	0	0	0
	4. Terminated - Deferred	(6)	0	0
	5. Terminated - Refund	0	0	(1)
	6. Terminated - Other Non-Vested	0	0	0
	7. Returned as Active	0	0	0
	8. Transferred to Other Fund	(1)	0	0
D.	DATA ADJUSTMENTS	0	0	0
	Vested	170		
	Non-Vested	122		
E.	TOTAL ON JUNE 30, 2001	292	14	1

		Recipients		
		Retirement Annuitants	Disabled	Survivors
A.	ON JUNE 30, 2000	153	4	82
B.	ADDITIONS	10	0	7
C.	DELETIONS			
	1. Service Retirement	0	0	0
	2. Death	(8)	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, 2001	155	4	88

Judges Retirement Fund

Actuarial Balance Sheet

(dollars in thousands)

JULY 1, 2001

		Non-Vested	Vested	Total
A.	CURRENT ASSETS (TABLE 1, E6)			$123,589
B.	EXPECTED FUTURE ASSETS			
	1. Present Value of Expected Future Statutory Supplemental Contributions (See Table 11)			$46,724
	2. Present Value of Future Normal Costs			43,441
	3. Total Expected Future Assets			$90,165
C.	TOTAL CURRENT AND EXPECTED FUTURE ASSETS			$213,754
D.	CURRENT BENEFIT OBLIGATIONS	Non-Vested	Vested	Total
	1. Benefit Recipients			
	a. Retirement Annuities		$75,447	$75,447
	b. Disability Benefits		2,126	2,126
	c. Surviving Spouse and Child Benefits		25,287	25,287
	2. Deferred Retirements with Future Augmentation		744	744
	3. Former Members without Vested Rights		1	1
	4. Active Members			
	a. Retirement Annuities	2,743	46,178	48,921
	b. Disability Benefits	3,010	0	3,010
	c. Survivor's Benefits	2,509	0	2,509
	d. Deferred Retirements	0	0	0
	e. Refund Liability Due to Death or Withdrawal	0	252	252
	5. Total Current Benefit Obligations	$8,262	$150,035	$158,297
E.	EXPECTED FUTURE BENEFIT OBLIGATIONS			$50,388
F.	TOTAL CURRENT AND EXPECTED FUTURE BENEFIT OBLIGATIONS			$208,685
G.	CURRENT UNFUNDED ACTUARIAL LIABILITY (D5-A)			$34,708
H.	CURRENT AND FUTURE UNFUNDED ACTUARIAL LIABILITY (F-C)			($5,069)

Judges Retirement Fund

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

(dollars in thousands)

JULY 1, 2001

	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	$94,963	$38,158	$56,805
b. Disability Benefits	5,214	2,668	2,546
c. Survivor's Benefit	4,479	2,389	2,090
d. Deferred Retirements	0	0	0
e. Refunds Due to Death or Withdrawal	423	226	197
f. Total	$105,079	$43,441	$61,638
2. Deferred Retirements With Future Augmentation	744		744
3. Former Members Without Vested Rights	1		1
4. Annuitants in MPRIF	89,568		89,568
5. Recipients Not in MPRIF	13,293		13,293
6. Total	$208,685	$43,441	$165,244

B. DETERMINATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY (UAAL)	
1. AAL (A6)	$165,244
2. Current Assets (Table 1, E6)	123,589
3. UAAL (B1-B2)	$41,655
C. DETERMINATION OF SUPPLEMENTAL CONTRIBUTION RATE	
1. Present Value of Future Payrolls Through the Amortization Date of July 1, 2020	$410,940
2. Supplemental Contribution Rate (B3/C1)	10.14%

TABLE 10

Judges Retirement Fund

Changes In Unfunded Actuarial Accrued Liability (UAAL)

(dollars in thousands)

YEAR ENDING JUNE 30, 2001

A.	UAAL AT BEGINNING OF YEAR	$42,547
B.	CHANGE DUE TO INTEREST REQUIREMENTS AND CURRENT RATE OF FUNDING	
	1. Normal Cost and Expenses	$4,635
	2. Contribution	(9,955)
	3. Interest on A, B1 and B2	3,390
	4. Total (B1+B2+B3)	($1,930)
C.	EXPECTED UAAL AT END OF YEAR (A+B4)	$40,617
D.	INCREASE (DECREASE) DUE TO ACTUARIAL LOSSES (GAINS) BECAUSE OF EXPERIENCE DEVIATIONS FROM EXPECTED	
	1. Salary Increases	($720)
	2. Investment Return	(2)
	3. MPRIF Mortality	996
	4. Mortality of Other Benefit Recipients	608
	5. Other Items	156
	6. Total	$1,038
E.	UAAL AT END OF YEAR BEFORE PLAN AMENDMENTS AND CHANGES IN ACTUARIAL ASSUMPTION (C+D6)	$41,655
F.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGE IN ACTUARIAL METHODS	0
G.	CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY DUE TO CHANGES IN ACTUARIAL ASSUMPTIONS	0
H.	UAAL AT END OF YEAR (E+F+G)	$41,655

Judges Retirement Fund

Determination Of Contribution Sufficiency

(dollars in thousands)

JULY 1, 2001

	Percent of Payroll	Dollar Amount
A. STATUTORY CONTRIBUTIONS - CHAPTER 490		
1. Employee Contributions	7.45%	$2,226
2. Employer Contributions	20.50%	6,124
3. Total	27.95%	$8,350
B. REQUIRED CONTRIBUTIONS - CHAPTER 356		
1. Normal Cost		
a. Retirement Benefits	14.47%	$4,322
b. Disability Benefits	0.97%	290
c. Survivors	0.91%	273
d. Deferred Retirement Benefits	0.00%	0
e. Refunds Due to Death or Withdrawal	0.09%	28
f. Total	16.44%	$4,913
2. Supplemental Contribution Amortization by July 1, 2020 of UAAL	10.14%	3,029
3. Allowance for Expenses	0.14%	42
4. Total	26.72%	$7,984
C. CONTRIBUTION SUFFICIENCY (DEFICIENCY) [A3-B4]	1.23%	$366

Note: Projected Annual Payroll for Fiscal Year Beginning on JULY 1, 2001 is $29,874.

Judges Retirement Fund

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Interest:	**Pre-Retirement**: 8.5% per annum **Post-Retirement**: 8.5% per annum
Benefit Increases After Retirement:	Payment of earnings on retired reserves in excess of 6% accounted for by using a 6% post-retirement assumption.
Salary Increases:	5% annually
Mortality:	**Pre-Retirement**: Male - 1983 GAM (Males -4) Female - 1983 GAM (Females -2) **Post-Retirement**: Male - 1983 GAM (Males) Female - 1983 GAM (Females) **Post-Disability**: Male - Combined Annuity Mortality Female - Combined Annuity Mortality
Retirement Age:	Age-related table as follows: Ages: 62-64 10% 65-67 20 68-70 30 71+ 100
Separation:	None
Disability:	Rates adopted by MSRS based on actual experience, most recently adjusted in 1979, as shown in rate table.
Expenses:	Prior year administration expenses expressed as percentage of prior year payroll.
Return of Contributions:	N/A
Family Composition:	Marital status as indicated by data. Female is three years younger than male.

***Social Security*:**	N/A
***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:	Market Value less of a percentage of the Unrecognized Asset Return determined at the close of each of the four preceding fiscal years. Unrecognized Asset Return is the difference between actual net return on Market Value of Assets and the asset return expected during that fiscal year (based on the assumed interest rate employed in the July 1 Actuarial Valuation of the fiscal year). Transition rules apply between July 1, 2001 and July 1, 2003, when the method is fully in effect.
***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. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percent of payroll.

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. Contributions after maximum benefit is reached are redirected to the Unclassified Plan.

Employer: 20.5% of salary.

Allowable Service: Service as a judge. Half credit is received for service not compensated at an annual salary or for service while entitled to practice law. Credit may also be earned for uncredited judicial service if the appropriate employee contributions, with interest, are made.

Salary: Salary set by law.

Average Salary: Average of the five highest years of salary of the last 10 years prior to retirement.

RETIREMENT

***Normal Retirement Benefit*:**

Eligibility: Age 65 and five years of Allowable Service. Age 70.

Amount: 2.7% of Average Salary for each year of Allowable Service prior to 7/1/80 and 3.2% of Average Salary for each year of Allowable Service after 6/30/80. Maximum benefit of 76.8% of average salary for the high five years 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:

No significant changes in plan provisions were recognized for this valuation.

Judges Retirement Fund

Summary of Plan Providers

GENERAL

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

RETIREMENT

***Normal Retirement Benefit*:**

Eligibility:	Age 65 and five years of Allowable Service. Age 70.
Amount:	2.7% of Average Salary for each year of Allowable Service prior to 7/1/80 and 3.2% of Average Salary for each year of Allowable Service after 6/30/80. Maximum benefit of 76.8% of average salary for the high five years 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:

No significant changes in plan provisions were recognized for this valuation.

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)
07/01/1991	33,559	78,429	44,870	42.79%	18,410	243.73%
07/01/1992	37,768	83,969	46,201	44.98%	22,765	202.95%
07/01/1993	44,156	90,509	46,353	48.79%	22,084	209.89%
07/01/1994	50,428	98,313	47,885	51.29%	22,264	215.08%
07/01/1995	56,813	102,238	45,425	55.57%	22,877	198.56%
07/01/1996	64,851	108,150	43,299	59.96%	22,421	193.12%
07/01/1997	74,681	117,714	43,033	63.44%	22,909	187.84%
07/01/1998	86,578	130,727	44,149	66.23%	24,965	176.84%
07/01/1999	97,692	139,649	41,957	69.96%	32,940	127.37%
07/01/2000	111,113	153,660	42,547	72.31%	26,315	161.68%
07/01/2001	123,589	165,244	41,655	74.79%	28,246	147.47%

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%
1998	27.60%	24,965	1,570	5,320	7,129	134.00%
1999	27.32%	32,940	2,069	6,930	7,051	101.75%
2000	26.75%	26,315	2,107	4,932	7,298	147.97%
2001	24.58% ***	28,246	2,162	4,781	7,793	163.00%
2002	26.72%					

* Includes contributions from other sources (if applicable).

***Actuarially Required Contribution Rate prior to change in plan provisions and Asset Valuation Method is 26.81%