

December 2008

# **State Employees Retirement Fund**

Actuarial Valuation Report as of July 1, 2008

## **MERCER**



MARSH MERCER KROLL  
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## Highlights

This report has been prepared by Mercer for the Minnesota State Retirement System to:

- Present the results of a valuation of the State Employees Retirement Fund as of July 1, 2008.
- Review experience under the Plan for the year ended June 30, 2008.
- Provide reporting and disclosure information for governmental agencies and other interested parties.

## Contributions

The following table summarizes important contribution information as described in the “Development of Costs” section.

Contributions	Plan Year Ending	
	June 30, 2009	June 30, 2008*
Statutory Contributions – Chapter 352 (% of Payroll)	9.00%	8.50%
Required Contributions – Chapter 356 (% of Payroll)	12.39%	11.76%
Sufficiency / (Deficiency)	(3.39%)	(3.26%)

The contribution deficiency increased from (3.26%) of payroll to (3.39%) of payroll. The primary reason for the increase is the less than expected return on assets. Even when taking into account the scheduled increases in member and employer contribution rates, a significant funding deficiency exists, which, without being addressed, will cause the funding status of this plan to deteriorate in the future.

Without a change in contribution rates, or favorable actuarial experience, the funded status will continue to deteriorate. In addition, as of the date of this report, the assets have experienced significant losses as a result of the turmoil in the financial marketplace this fall. If not reversed, losses will further increase the deficiency.

On the other hand, we would also note that absent any additional losses, the plan has sufficient assets to pay benefits for many years into the future.

The “Plan Assets” section provides detail on the plan assets used for the valuation including a development of the actuarial value of assets. The market value of assets earned (4.9%) for the plan year ending June 30, 2008 compared to an assumption of 8.5%. Only 20% of the non-MPRIF asset loss is recognized this year in the actuarial value of assets. The remainder will be recognized over the next four years. The actuarial value of assets earned 3.9% for the plan year ending June 30, 2008 as compared to the assumed rate of 8.50%.

Participant reconciliation and statistics are detailed in the “Membership Data” section. The “Actuarial Basis” section includes a summary of plan provisions and actuarial methods and assumptions used for the calculations in this report. The “Plan Accounting” section details the required accounting information for the Plan under GASB Statement No. 25 (as amended by GASB 50).

There were no changes in valuation methods since the July 1, 2007 valuation. Changes in actuarial assumptions and plan provisions are reflected in this report and summarized in the Actuarial Basis section.

\* Provided by The Segal Company.

## Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in plan provisions, actuarial assumptions or valuation methods and procedures between the two valuations are described after the summary.

	Actuarial Valuation as of	
	July 1, 2008	July 1, 2007*
<b>Contributions (% of Payroll)</b>		
Statutory – Chapter 352	9.00%	8.50%
Required – Chapter 356	12.39%	11.76%
Sufficiency / (Deficiency)	(3.39%)	(3.26%)
<b>Funding Ratios (dollars in thousands)</b>		
Accrued Benefit Funding Ratio		
– Current assets (AVA)	\$ 9,013,456	\$ 8,904,517
– Current benefit obligations	9,484,956	9,198,263
– Funding ratio	95.03%	96.81%
Accrued Liability Funding Ratio		
– Current assets (AVA)	\$ 9,013,456	\$ 8,904,517
– Actuarial accrued liability	9,994,602	9,627,305
– Funding ratio	90.18%	92.49%
Projected Benefit Funding Ratio		
– Current and expected future assets	\$ 10,556,439	\$ 10,399,040
– Current and expected future benefit obligations	11,315,760	11,151,834
– Funding ratio	93.29%	93.25%
<b>Participant Data</b>		
Active members		
– Number	48,816	48,379
– Projected annual earnings (000s)	\$ 2,378,816	\$ 2,241,738
– Average annual earnings (projected)	\$ 48,370	\$ 46,337
– Average age	46.4	46.2
– Average service	13.5	12.4
Service retirements	21,735	20,881
Survivors	3,086	2,919
Disability retirements	1,620	1,546
Deferred retirements	14,951	14,751
Terminated other non-vested	6,865	7,007
<b>Total</b>	<b>97,073</b>	<b>95,483</b>

\* Provided by The Segal Company

## Effects of Changes

The following changes in assumptions were recognized as of July 1, 2008:

- Lower ultimate salary increase rates by 1.00% at all ages.
- Change the select period for salary increases from 10 years with an adjustment of  $.30\% \times (10 - T)$  to 5 years with an adjustment of  $.60\% \times (5 - T)$ .
- Change payroll growth assumption from 5.0% to 4.5%.
- Reduce retirement rates at ages 56 to 60 for Rule of 90 retirements.
- Reduce withdrawal rates for females between ages 35 and 54.
- Increase disability rates for members between ages 50 and 65.

The changes in retirement rates, withdrawal rates, disability rates, and payroll growth caused a very small increase in costs. The changes in salary increase rates resulted in a significant reduction in costs. In the aggregate, these assumption changes had the following impact on the valuation results:

- \$146 million decrease in actuarial accrued liability.
- A decrease in the required contribution of 1.38% of payroll.

The basis for determining benefit increases for benefit recipients was revised since the last valuation as of July 1, 2007. See the Summary of Plan Provisions for detail. This change in plan provisions had no impact on the results in this valuation.

## Certification

We have prepared an actuarial valuation of the State Employees Retirement Fund as of July 1, 2008 for the plan year ending June 30, 2009. This report reflects the provisions of the Plan effective July 1, 2008. To the best of our knowledge, this actuarial valuation was performed in accordance with the requirements of Minnesota Statutes, Section 356.215 and the requirements of the Standards of Actuarial Work established by the Minnesota Legislative Commission on Pension and Retirement.

This report has been prepared exclusively for the Minnesota State Retirement System and the Legislative Commission on Pensions and Retirement to determine the annual required contribution and present accounting results required under GASB Nos. 25 (as amended by GASB 50) and 27. Mercer is not responsible for consequences arising from the use of any elements of this report for any other than their intended purpose. Determinations for other purposes may be significantly different from the results shown in this report.

A valuation report is a snapshot of a plan's estimated financial condition at a particular point in time; it is neither a prediction of a pension plan's future financial condition nor a prediction of a pension plan's ability to pay benefits in the future.

Over time, a plan's total cost will depend on a number of factors, including the amount of benefits it pays, the number of people to whom it pays them, and the amount earned on any assets invested to pay the benefits. These amounts and others are uncertain and unknowable at the valuation date, but are predicted to fall within a reasonable range of possibilities. To prepare this report, *actuarial assumptions*, as described within, are used to select a single scenario from the range of possibilities. The results of that single scenario are included in this report. However, the future is uncertain and the plan's actual experience will differ from those assumptions; these differences may be significant or material. In addition, different assumptions or scenarios may also be within the reasonable range and results based on those assumptions would be different. Actuarial assumptions may also be changed from valuation to valuation based on experience, changes in expectations about the future, and other factors.

Because actual plan experience will differ from the assumptions, decisions about benefit changes, investment policy, funding amounts, benefit security and/or benefit related issues should be made only after careful consideration of alternative future financial conditions and scenarios, and not solely on the basis of a valuation report or reports.

### Data

We used and relied on financial data submitted by the Fund without further audit. We have also used and relied on participant data supplied by the Fund; this data would customarily not be verified by the Fund's actuary. We have reviewed the participant data for internal consistency and have no reason to doubt its substantial accuracy. The Fund is solely responsible for the validity and completeness of this information.

### Contributions

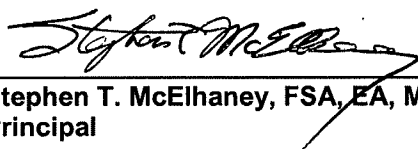
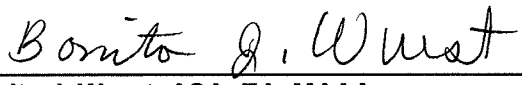
All costs, liabilities and other factors for the Fund were determined in accordance with generally accepted actuarial principles and procedures, in accordance with the provisions of current federal and state statutes and regulations issued thereunder. The economic assumptions are set in Minnesota Statutes, and the remaining assumptions are adopted by the Legislative Commission on Pensions and Retirement. We believe that these assumptions are reasonable. This report fully and fairly discloses the actuarial position of the Fund on an ongoing basis.

## Certification

### Professional Qualifications

We are available to answer any questions on the material contained in the report, or to provide explanations or further details as may be appropriate. The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. We are not aware of any direct or material indirect financial interest or relationship, including investments or other services that could create a conflict of interest, that would impair the objectivity of our work.

**The information contained in this document (including any attachments) is not intended by Mercer to be used, and it cannot be used, for the purpose of avoiding penalties under the Internal Revenue Code that may be imposed on the taxpayer.**

 _____ Stephen T. McElhaney, FSA, EA, MAAA Principal	<u>12/5/2008</u> Date
 _____ Bonita J. Wurst, ASA, EA, MAAA Principal	<u>12/5/2008</u> Date
Mercer 333 South 7th Street, Suite 1600 Minneapolis, MN 55402-2427 612 642 8600	

## Supplemental Information

The remainder of the report includes information supporting the results presented in the previous sections.

- **Plan assets** presents information about the plan's assets as reported by the Minnesota State Retirement System and the Minnesota State Board of Investments. The assets represent the portion of total fund liabilities that has been funded.
- **Membership data** presents and describes the membership data used in the valuation.
- **Development of costs** shows the liabilities for plan benefits and the derivation of the contribution amount.
- **Actuarial basis** describes the plan provisions, as well as the methods and assumptions used to value the plan. The valuation is based on the premise that the plan is ongoing.
- **Plan accounting under GASB 25 (as amended by GASB 50)** shows the disclosures required by GASB Statement No. 25 as amended by GASB Statement No. 50.
- **Glossary** defines the terms used in this report.



## Plan Assets

### Statement of Plan Net Assets for Year Ended June 30, 2008 (Dollars in Thousands)

	Market Value	Cost Value
<b>Assets in Trust</b>		
▪ Cash, equivalents, short term securities	\$ 35,948	\$ 35,948
▪ Fixed income	1,269,161	1,347,562
▪ Equity	4,045,253	4,179,829
▪ Equity in MPRIF	3,449,365	4,251,341
▪ Other	902,848	902,848
<b>Total assets in trust</b>	<b>\$ 9,702,575</b>	<b>\$ 10,717,528</b>
Assets Receivable	15,996	15,996
<b>Total Assets</b>	<b>\$ 9,718,571</b>	<b>\$ 10,733,524</b>
Amounts Payable	(905,868)	(905,868)
Due to MPRIF (for mortality loss)	(9,563)	(9,563)
<b>Net Assets</b>	<b>\$ 8,803,140</b>	<b>\$ 9,818,093</b>
<b>Net assets held in trust for pension benefits</b>		
▪ MPRIF reserves	\$ 3,449,365	\$ 4,251,341
▪ Member reserves	1,041,731	1,041,731
▪ Non-MPRIF reserves	4,312,044	4,525,021
<b>Total assets available for benefits</b>	<b>\$ 8,803,140</b>	<b>\$ 9,818,093</b>

## Plan Assets

### Reconciliation of Plan Assets

The following exhibit shows the revenue, expenses and resulting assets of the Fund as reported by the Minnesota State Board of Investment, for the Plan's Fiscal Year July 1, 2007 to June 30, 2008.

Change in Assets (dollars in thousands)	Non-MPRIF Assets	MPRIF Reserve	Market Value
<b>1. Fund balance at market value at July 1, 2007</b>	<b>\$ 5,810,018</b>	<b>\$ 3,696,987</b>	<b>\$ 9,507,005</b>
2. Contributions			
a. Member	99,280	0	99,280
b. Employer	96,746	0	96,746
c. Other sources	0	0	0
d. Total contributions	<u>\$ 196,026</u>	<u>\$ 0</u>	<u>\$ 196,026</u>
3. Investment income			
a. Interest and dividends	\$ (264,508)	\$ (197,051)	\$ (461,559)
b. Investment expenses	(8,013)	(5,273)	(13,286)
c. Net subtotal	<u>\$ (272,521)</u>	<u>\$ (202,324)</u>	<u>\$ (474,845)</u>
4. Other	10,539	0	10,539
<b>5. Total income (2.d. + 3.c. + 4.)</b>	<b>\$ (65,956)</b>	<b>\$ (202,324)</b>	<b>\$ (268,280)</b>
6. Benefits Paid			
a. Annuity	\$ 0	\$ (418,757)	\$ (418,757)
b. Refunds	(11,676)	0	(11,676)
c. Total benefits paid	<u>\$ (11,676)</u>	<u>\$ (418,757)</u>	<u>\$ (430,433)</u>
7. Expenses			
a. Other	\$ 0	\$ 0	\$ 0
b. Administrative	(5,152)	0	(5,152)
c. Total expenses	<u>\$ (5,152)</u>	<u>\$ 0</u>	<u>\$ (5,152)</u>
<b>8. Total disbursements (6.c. + 7.c.)</b>	<b>\$ (16,828)</b>	<b>\$ (418,757)</b>	<b>\$ (435,585)</b>
9. Other changes in reserves			
a. Annuities awarded	\$ (363,896)	\$ 363,896	\$ 0
b. MPRIF mortality loss	(9,563)	9,563	0
c. Change in assumptions	0	0	0
d. Total other changes	<u>\$ (373,459)</u>	<u>\$ 373,459</u>	<u>\$ 0</u>
<b>10. Fund balance at market value at June 30, 2008</b> (1. + 5. + 8. + 9.d.)	<b>\$ 5,353,775</b>	<b>\$ 3,449,365</b>	<b>\$ 8,803,140</b>

## Plan Assets

### Actuarial Asset Value (Dollars in Thousands)

	<b>June 30, 2008</b>		
1. Market value of assets available for benefits			\$ 8,803,140
2. Determination of average balance			
a. Non-MPRIF assets available at July 1, 2007			5,810,018
b. Non-MPRIF assets available at June 30, 2008 (before MPRIF mortality adjustment)			5,363,338
c. Net investment income for fiscal year ending June 30, 2008			(261,982)
d. Average balance $[a. + b. - c.] / 2$			5,717,669
3. Expected return $[8.5\% * 2.d.]$			486,002
4. Actual return			(261,982)
5. Current year asset gain/(loss) $[4. - 3.]$			(747,984)
6. Unrecognized asset recognized asset returns			
	<b>Original</b>	<b>% Not</b>	
	<b>Amount</b>	<b>Recognized</b>	
a. Year ended June 30, 2008	\$ (747,984)	80%	\$ (598,387)
b. Year ended June 30, 2007	488,554	60%	293,133
c. Year ended June 30, 2006	189,878	40%	75,951
d. Year ended June 30, 2005	94,937	20%	18,987
e. Total unrecognized return			\$ (210,316)
<b>7. Actuarial value at June 30, 2008 (1. - 6.e.)</b>			<b>\$ 9,013,456</b>

## Membership Data

### Distribution of Active Participants

Age	Years of Service as of June 30, 2008									Total	
	0- 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35-39	40 +		
0 - 19	127										127
Avg. Earnings	8,301										8,301
20 - 24	1,607	8									1,615
Avg. Earnings	23,826	29,851									23,856
25 - 29	3,514	546	8								4,068
Avg. Earnings	32,061	38,729	43,242								32,978
30 - 34	2,351	1,280	254	2							3,887
Avg. Earnings	36,104	43,865	46,068	44,521							39,314
35 - 39	2,007	1,399	830	211	10						4,457
Avg. Earnings	36,955	46,170	52,799	52,122	38,432						43,519
40 - 44	1,885	1,383	1,001	819	392	44					5,524
Avg. Earnings	37,424	47,375	53,045	54,895	53,176	50,161					46,556
45 - 49	1,903	1,421	1,079	1,168	1,213	764	73				7,621
Avg. Earnings	36,846	47,182	52,764	55,523	56,647	51,389	48,875				48,614
50 - 54	1,589	1,346	1,033	1,138	1,287	1,301	989	79			8,762
Avg. Earnings	37,750	47,687	52,707	54,876	56,752	55,472	54,538	54,321			50,731
55 - 59	1,120	1,050	834	1,016	1,055	1,058	1,275	541	52		8,001
Avg. Earnings	38,370	48,935	51,075	55,632	55,967	56,809	59,879	56,587	54,336		52,794
60 - 64	480	495	438	501	540	452	421	336	166		3,829
Avg. Earnings	34,315	46,455	52,861	52,728	53,763	54,769	60,365	61,902	59,262		51,939
65 - 69	117	137	99	104	84	60	56	34	47		738
Avg. Earnings	27,493	43,639	50,978	55,773	50,182	51,928	59,977	63,335	61,002		48,445
70 - 74	37	31	20	14	12	11	4	5	7		141
Avg. Earnings	18,951	34,722	50,481	41,287	55,874	42,440	47,785	45,202	64,701		38,103
75+	12	6	5	5	3	4	3	2	6		46
Avg. Earnings	13,035	23,008	20,534	54,434	32,886	33,101	43,723	36,966	55,683		31,295
<b>Total</b>	<b>16,749</b>	<b>9,102</b>	<b>5,601</b>	<b>4,978</b>	<b>4,596</b>	<b>3,694</b>	<b>2,821</b>	<b>997</b>	<b>278</b>		<b>48,816*</b>
<b>Avg. Earnings</b>	<b>34,344</b>	<b>46,193</b>	<b>52,179</b>	<b>54,827</b>	<b>55,710</b>	<b>54,741</b>	<b>57,762</b>	<b>58,332</b>	<b>58,695</b>		<b>46,225</b>

\* Difference from number of actives shown on page 14 is due to the exclusion of military affairs and pilots.

## Membership Data

### Distribution of Service Retirements

Age	Years Retired as of June 30, 2008							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
45 – 49	2							2
Avg. Benefit	11,279							11,279
50 – 54	19	14						33
Avg. Benefit	13,156	10,163						11,886
55 – 59	519	1,020	28					1,567
Avg. Benefit	15,749	13,846	16,302					14,520
60 – 64	631	2,147	1,127	22	1			3,928
Avg. Benefit	17,234	17,107	13,968	15,361	14,356			16,216
65 – 69	345	1,918	2,032	680	3			4,978
Avg. Benefit	16,175	15,302	16,810	14,785	6,977			15,902
70 – 74	45	340	1,637	1,429	418	2		3,871
Avg. Benefit	11,931	12,914	14,856	17,754	20,587	13,147		16,339
75 – 79	11	70	247	1,429	1,032	194		2,983
Avg. Benefit	12,446	11,614	12,263	17,409	20,374	24,932		18,343
80 – 84	5	21	59	297	1,169	759	22	2,332
Avg. Benefit	6,038	10,818	11,900	18,291	17,497	21,275	19,188	18,617
85 – 89		4	10	40	149	779	342	1,324
Avg. Benefit		35,711	5,495	16,844	15,075	16,923	18,455	17,079
90+			3	3	12	58	641	717
Avg. Benefit			12,413	26,365	14,283	11,226	15,217	14,914
<b>Total</b>	<b>1,577</b>	<b>5,534</b>	<b>5,143</b>	<b>3,900</b>	<b>2,784</b>	<b>1,792</b>	<b>1,005</b>	<b>21,735*</b>
<b>Avg. Benefit</b>	<b>16,237</b>	<b>15,525</b>	<b>15,263</b>	<b>17,135</b>	<b>18,871</b>	<b>19,445</b>	<b>16,406</b>	<b>16,596</b>

\* Difference from number of retirees shown on page 14 is due to multiple payees of one member (ex-spouse, child support, etc.).

## Membership Data

### Distribution of Survivors

Age	Years Since Retirement as of June 30, 2008							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
<45	4	41	20	4	2			71
Avg. Benefit	5,284	11,694	6,002	4,985	13,906			9,414
45 – 49	9	20	17	8	1	1		56
Avg. Benefit	11,387	10,998	5,335	4,346	2,125	8,285		8,184
50 – 54	10	52	35	17	4	1		119
Avg. Benefit	14,197	11,338	10,142	6,852	7,877	6,799		10,431
55 – 59	38	96	78	31	3	1	1	248
Avg. Benefit	10,349	11,725	10,563	10,711	25,486	7,496	1,013	11,128
60 – 64	33	132	79	37	10	5	1	297
Avg. Benefit	13,241	13,239	12,651	13,179	11,754	9,953	7,687	12,951
65 – 69	33	102	105	62	28	6	2	338
Avg. Benefit	11,349	13,227	12,734	13,359	13,888	13,619	13,802	12,980
70 – 74	36	126	119	65	35	15	2	398
Avg. Benefit	15,209	16,517	16,247	15,623	15,555	10,765	11,041	15,843
75 – 79	39	101	130	88	72	25	10	465
Avg. Benefit	17,762	16,730	18,233	16,456	17,549	11,457	9,876	16,881
80 – 84	39	130	134	97	70	31	38	539
Avg. Benefit	18,338	17,460	18,156	18,664	17,214	15,444	16,172	17,675
85 – 89	26	97	80	84	57	13	42	399
Avg. Benefit	20,198	14,244	14,464	16,491	15,411	14,911	14,272	15,340
90+	3	17	26	31	29	1	49	156
Avg. Benefit	15,153	11,363	17,881	17,934	15,600	13,093	13,987	15,455
<b>Total</b>	<b>270</b>	<b>914</b>	<b>823</b>	<b>524</b>	<b>311</b>	<b>99</b>	<b>145</b>	<b>3,086*</b>
<b>Avg. Benefit</b>	<b>14,801</b>	<b>14,362</b>	<b>14,684</b>	<b>15,333</b>	<b>16,039</b>	<b>13,013</b>	<b>14,183</b>	<b>14,768</b>

\* Difference from number of survivors shown on page 14 is due to multiple survivors of one member.

## Membership Data

### Distribution of Disability Retirements

Age	Years Disabled as of June 30, 2008							Total
	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25+	
<45	6	22	8	3				39
Avg. Benefit	6,720	4,849	5,618	6,069				5,388
45 – 49	12	40	29	8	5			94
Avg. Benefit	8,444	9,514	8,086	7,937	3,639			8,490
50 – 54	27	88	56	36	8	1		216
Avg. Benefit	13,380	10,791	9,194	10,016	7,909	6,352		10,444
55 – 59	53	155	116	45	9	1		379
Avg. Benefit	15,635	13,959	12,000	11,552	8,851	3,914		13,162
60 – 64	34	131	129	45	30	3	3	375
Avg. Benefit	12,849	12,697	13,283	12,775	12,868	10,917	12,604	12,921
65 – 69	2	30	110	71	20	4	2	239
Avg. Benefit	11,922	11,162	12,952	14,195	12,551	10,994	8,855	12,987
70 – 74		1	25	64	29	4	1	124
Avg. Benefit		10,672	14,253	14,948	13,169	8,846	3,994	14,072
75 – 79				15	38	12	6	71
Avg. Benefit				12,961	12,866	14,637	8,836	12,845
80 – 84					13	11	12	36
Avg. Benefit					12,422	10,344	12,555	11,831
85 – 89						4	37	41
Avg. Benefit						12,411	12,711	12,682
90+							6	6
Avg. Benefit							11,433	11,433
<b>Total</b>	<b>134</b>	<b>467</b>	<b>473</b>	<b>287</b>	<b>152</b>	<b>40</b>	<b>67</b>	<b>1,620</b>
<b>Avg. Benefit</b>	<b>13,375</b>	<b>12,016</b>	<b>12,010</b>	<b>12,878</b>	<b>12,043</b>	<b>11,536</b>	<b>11,971</b>	<b>12,268</b>

## Membership Data

### Reconciliation of Members\*

	Actives	Terminated		Recipients			Total
		Deferred Retirement	Other Non-vested	Service Retirements	Disability Retirements	Survivors	
<b>Members on 7/1/2007</b>	<b>48,361</b>	<b>14,751</b>	<b>7,007</b>	<b>20,881</b>	<b>1,546</b>	<b>2,919</b>	<b>95,465</b>
New entrants	3,747	0	0	0	0	0	3,747
Return to active	348	(207)	(141)	0	0	0	0
Terminated non-vested	(1,808)	(39)	1,916	0	0	0	69
Service retirements	(1,050)	(446)	(8)	1,579	(1)	0	74
Terminated deferred	(1,123)	1,229	(9)	0	0	0	97
Terminated refund	(995)	(254)	(618)	0	0	0	(1,867)
Deaths	(72)	(43)	(6)	(787)	(63)	(156)	(1,127)
New beneficiary	0	0	0	0	0	273	273
Disabled	(131)	(10)	(3)	0	137	0	(7)
Transferred to Fund	(4)	(12)	(1,205)	0	0	0	(1,221)
Data correction	1,550	(18)	(68)	63	1	54	1,582
Net change	462	200	(142)	855	74	171	1,620
<b>Members on 6/30/2008</b>	<b>48,823</b>	<b>14,951</b>	<b>6,865</b>	<b>21,736</b>	<b>1,620</b>	<b>3,090</b>	<b>97,085</b>

\* Provided by Minnesota State Retirement System and checked for reasonableness.



## Development of Costs

### Actuarial Valuation Balance Sheet (Dollars in Thousands)

The actuarial balance sheet is based on the fundamental equation that at any given time the present value of benefits to be paid in the future must be equal to the assets on hand plus the present value of future contributions to be received. The total rate of contribution is determined as the amount which will make the total present and potential assets balance with the total present value of future benefits. The members' rate of contribution is fixed at the current schedule. The employer's rate of contribution is the balance required to cover the total rate of contribution.

The contributions made in excess of amounts required for current benefit payments are accumulated as a reserve to help meet benefit payments in later years. It is this reserve system which permits the establishment of a level rate of contribution each year.

				<b>June 30, 2008</b>
A. Actuarial Value of Assets				\$ 9,013,456
B. Expected future assets				
1. Present value of expected future statutory supplemental contributions				\$ 221,825
2. Present value of future normal cost contributions				1,321,158
3. Total expected future assets (1. + 2.)				<u>\$ 1,542,983</u>
C. Total current and expected future assets				\$ 10,556,439
		<u>Non-Vested</u>	<u>Vested</u>	<u>Total</u>
D. Current benefit obligations				
1. Benefit recipients				
a. Service retirements	\$	0	\$ 3,650,277	\$ 3,650,277
b. Disability		0	221,443	221,443
c. Survivors		0	379,621	379,621
2. Deferred retirements with augmentation		0	1,201,939	1,201,939
3. Former members without vested rights		0	9,624	9,624
4. Active Members		<u>37,130</u>	<u>3,984,922</u>	<u>4,022,052</u>
5. Total Current Benefit Obligations	\$	<u>37,130</u>	\$ <u>9,447,826</u>	\$ <u>9,484,956</u>
E. Expected Future Benefit Obligations				\$ 1,830,804
F. Total Current and Expected Future Benefit Obligations				\$ 11,315,760
G. Unfunded Current Benefit Obligations (D.5. - A.)				\$ 471,500
H. Unfunded Current and Future Benefit Obligations (F. - C.)				\$ 759,321

## Development of Costs

### Determination of Unfunded Actuarial Accrued Liability and Supplemental Contribution Rate (Dollars in Thousands)

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
A. Determination of Actuarial Accrued Liability (AAL)			
1. Active Members			
a. Retirement annuities	\$ 5,058,734	\$ 911,952	\$ 4,146,782
b. Disability benefits	256,802	79,435	177,367
c. Survivor's benefits	151,644	44,345	107,299
d. Deferred retirements	331,539	168,666	162,873
e. Refunds	43,816	116,760	(72,944)
f. Total	\$ 5,842,535	\$ 1,321,158	\$ 4,521,377
2. Deferred retirements with future augmentation	1,201,939	0	1,201,939
3. Former members without vested rights	9,624	0	9,624
4. Annuitants in MPRIF	4,251,341	0	4,251,341
5. Annuitants not in MPRIF	0	0	0
6. Contingent actuarial accrued liability - unclassified	10,321	0	10,321
7. Total	\$ 11,315,760	\$ 1,321,158	\$ 9,994,602
B. Determination of Unfunded Actuarial Accrued Liability (UAAL)			
1. Actuarial accrued liability			\$ 9,994,602
2. Current assets (AVA)			9,013,456
3. Unfunded actuarial accrued liability			\$ 981,146
C. Determination of Supplemental Contribution Rate			
1. Present value of future payrolls through the amortization date of July 1, 2020			\$ 22,406,555
2. Supplemental contribution rate (B.3. / C.1.)			4.38%

## Development of Costs

### Changes in Unfunded Actuarial Accrued Liability (UAAL) (Dollars in Thousands)

	Year Ending June 30, 2008
A. Unfunded actuarial accrued liability at beginning of year	\$ 722,788
B. Changes due to interest requirements and current rate of funding	
1. Normal cost and actual administrative expenses	\$ 193,891
2. Contributions	(196,026)
3. Interest on A., B.1. and B.2.	61,346
4. Total (B.1. + B.2. + B.3.)	\$ 59,211
C. Expected unfunded actuarial accrued liability at end of year (A. + B.4.)	\$ 781,999
D. Increase (decrease) due to actuarial losses (gains) because of experience deviations from expected	
1. Salary increases	\$ (48,586)
2. Investment return	403,575
3. MPRIF Mortality	9,563
4. Mortality of other benefit recipients	0
5. Other items	(19,225)
6. Total	\$ 345,327
E. Unfunded actuarial accrued liability at end of year before plan amendments and changes in actuarial assumptions (C. + D.6.)	\$ 1,127,326
F. Change in unfunded actuarial accrued liability due to changes in plan provisions	\$ 0
G. Change in unfunded actuarial accrued liability due to changes in actuarial assumptions	\$ (146,180)
H. Unfunded actuarial accrued liability at end of year (E. + F. + G.)	\$ 981,146

## Development of Costs

### Determination of Contribution Sufficiency/(Deficiency) (Dollars in Thousands)

	July 1, 2008	
	Percent of Payroll	Dollar Amount
A. Statutory contributions – Chapter 352		
1. Employee contributions	4.50%	\$ 107,047
2. Employer contributions	4.50%	107,047
3. Total	9.00%	\$ 214,094
B. Required contributions – Chapter 356		
1. Normal cost		
a. Retirement benefits	5.53%	\$ 131,582
b. Disability benefits	0.45%	10,622
c. Survivors	0.25%	6,011
d. Deferred retirement benefits	0.92%	21,909
e. Refunds	0.63%	15,016
f. Total	7.78%	\$ 185,140
2. Supplemental contribution amortization by July 1, 2020 of Unfunded Actuarial Accrued Liability		
a. MPRIF	3.58%	\$ 85,162
b. Non-MPRIF	0.80%	19,030
c. Total	\$ 4.38%	\$ 104,192
3. Allowance for expenses	0.23%	5,471
4. Total	12.39%	\$ 294,803
C. Contribution Sufficiency/(Deficiency) (A.3. – B.4.)	(3.39%)	\$ (80,709)

Note: Projected annual payroll for fiscal year beginning on the valuation date: \$2,378,816.

## Development of Costs

### Special Groups - 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 1.60% 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.

	<b>Year Ending June 30, 2008</b>
A. Number of active participants	3
B. Projected annual earnings	\$ 117,699
C. Total normal cost	
1. Dollar amount	\$ 11,959
2. Percent of payroll	10.16%

## Development of Costs

### Special Groups - 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 1.60% 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.

	<b>Year Ending June 30, 2008</b>
A. Number of active participants	4
B. Projected annual earnings	\$ 327,826
C. Total normal cost	
1. Dollar amount	\$ 34,434
2. Percent of payroll	10.50%

## Development of Costs

### Special Groups - 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 2.00% 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.

	<b>Year Ending June 30, 2008</b>
A. Number of active participants	11
B. Projected annual earnings	\$ 686,379
C. Total normal cost	
1. Dollar amount	\$ 90,612
2. Percent of payroll	13.20%

## Development of Costs

### Special Groups - Unclassified Plan Contingent Liability Calculation (Dollars in Thousands)

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 that are applied to the State Employees Retirement Fund.

	Year Ending June 30, 2008
A. Number of active participants	1,567
B. Account balances for active participants	\$ 170,880
C. Accrued liability for active participants	188,452
D. Number of inactive participants	1,766
E. Account balances for inactive participants	\$ 111,074
F. Net assets held in trust for Unclassified Plan participants	289,205
G. Contingent liability (C. + E. - F.)	10,321
H. Projected annual earnings for active participants	111,387
I. Normal cost	
1. Dollar amount	\$ 11,305
2. Percent of payroll	10.15%



## Actuarial Basis

### Actuarial Cost Method

Liabilities and contributions in this report are computed using the Individual Entry Age Normal Cost Method. This method is prescribed by Minnesota Statutes.

The objective under this method is to fund each participants' benefits under the Plan as payments which are level as a percentage of salary, starting at original participation date (or employment date), and continuing until the assumed retirement termination, disability or death.

At the time the funding method is introduced, there will be a liability which represents the contributions which would have been accumulated if this method of funding had always been used. The difference between this liability and the assets (if any) which are held in the fund is the unfunded liability which is typically funded over a chosen period in accordance with the amortization schedule.

A detailed description of the calculation follows:

The normal costs for each active participant under the assumed retirement age is determined by applying to earnings the level percentage of salary which, if contributed each year from date of entry into the Plan until the assumed retirement (termination, disability or death) date, is sufficient to provide the full value of the benefits expected to be payable.

- The present value of present value of future normal costs is the total of the discounted values of all active participants' normal cost, assuming these to be paid in each case from the valuation date until retirement (termination, disability or death) date.
- The present value of projected benefits is calculated as the value of all benefit payments expected to be paid to the Plan's current participants, including active and retired members, beneficiaries, and terminated members with vested rights.
- The accrued liability is the excess of the present value of projected benefits over the present value of future normal cost.
- The unfunded liability is the excess of the accrued liability over the assets of the fund, and represents that part of the accrued liability which has not been funded by accumulated past contributions.

## Actuarial Basis

### Asset Valuation Method

**MPRIF Reserve:** Market Value

**Non-MPRIF Assets:** The assets are valued based on a five-year moving average of expected and market values (five-year average actuarial value) determined as follows:

- At the end of each plan year, an average asset value is calculated as the average of the market asset value at the beginning and end of the fiscal year net of investment income for the fiscal year;
- The investment gain or (loss) is taken as the excess of actual investment income over the expected investment income based on the average asset value as calculated above;
- The investment gain or (loss) so determined is recognized over five years at 20% per year;
- The asset value is the sum of the expected asset value plus the scheduled recognition of investment gains or (losses) during the current and the preceding four plan years.

### Payment on the Unfunded Actuarial Accrued Liability

A level percentage of payroll each year to the statutory amortization date of July 1, 2020 assuming payroll increases of 4.50% per annum (5.00% last year). If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.

## Actuarial Basis

### Summary of Actuarial Assumptions

The following assumptions were used in valuing the liabilities and benefits under the plan.

<i>Investment return:</i>	6.0% compounded annually post-retirement. 8.5% compounded annually pre-retirement.			
<i>Benefit increases after retirement</i>	Payment of benefit increases after retirement accounted for by using a 6.00% post-retirement assumption.			
<i>Salary increases</i>	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 rates in the rate table. During a 5-year select period, $0.60\% \times (5-T)$ where T is completed years of service is added to the ultimate rate.			
<i>Mortality</i>				
<i>Healthy Pre-retirement</i>	1983 Group Annuity Mortality for males set back five years 1983 Group Annuity Mortality for females set back two years			
<i>Healthy Post-retirement</i>	1983 Group Annuity Mortality for males set back two years 1983 Group Annuity Mortality for females set back one year			
<i>Disabled</i>	1965 RRB rates through age 54. For ages 55 to 64, graded rates between 1965 RRB rates and the Healthy Post-Retirement Mortality Table. For ages 65 and later, the Healthy Post-Retirement Mortality Table			
<i>Retirement</i>	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.			
<i>Withdrawal</i>	Select and ultimate rates based on actual plan experience. Ultimate rates after the third year are shown in the rate table. Select rates are as follows:			
		<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>
	Male	0.45	0.14	0.09
	Female	0.48	0.15	0.10
<i>Disability</i>	Age-related rates based on actual experience; see table of sample rates.			
<i>Allowance for Combined Service Annuity</i>	Liabilities for active members are increased by 1.20% and liabilities for former members are increased by 40.00% to account for the effect of some participants having eligibility for a Combined Service Annuity.			
<i>Administrative expenses</i>	Prior year administrative expenses expressed as percentage of prior year payroll.			
<i>Return of contributions</i>	All employees withdrawing after becoming eligible for a deferred benefit are assumed to take the larger of their contributions accumulated with interest or the value of their deferred benefit.			
<i>Percentage married</i>	85% of male members are assumed to be married.			
<i>Age of spouse</i>	Female members are assumed to be three years younger than males.			

## Actuarial Basis

### Summary of Actuarial Assumptions *(continued)*

<i>Form of payment</i>	<p>Married members assumed to elect subsidized joint and survivor form of annuity as follows:</p> <p>Males:      20% elect 50% J&amp;S option                         50% elect 100% J&amp;S option</p> <p>Females:    10% elect 50% J&amp;S option                         15% elect 100% J&amp;S option</p>
<i>Changes in actuarial assumptions and cost methods</i>	<p>The following assumption changes were recognized as of July 1, 2008:</p> <ul style="list-style-type: none"> <li>▪ Lower ultimate salary increase rates by 1.00% at all ages.</li> <li>▪ Change the select period for salary increases from 10 years with an adjustment of <math>.30\% \times (10 - T)</math> to 5 years with an adjustment of <math>.60\% \times (5 - T)</math>.</li> <li>▪ Change payroll growth assumption from 5.0% to 4.5%.</li> <li>▪ Reduce retirement rates at ages 56 to 60 for Rule of 90 retirements.</li> <li>▪ Reduce withdrawal rates for females between ages 35 and 54.</li> <li>▪ Increase disability rates for members between ages 50 and 65.</li> </ul>

## Actuarial Basis

### Summary of Actuarial Assumptions *(continued)*

#### Summary of Rates

Age	Rate (%)					
	Healthy Pre-Retirement Mortality		Healthy Post-Retirement Mortality		Disabled Mortality	
	Male	Female	Male	Female	Male	Female
20	0.03%	0.02%	0.04%	0.02%	4.39%	4.39%
25	0.04	0.02	0.04	0.02	4.40	4.40
30	0.05	0.03	0.05	0.03	4.40	4.40
35	0.06	0.04	0.07	0.04	4.41	4.41
40	0.09	0.06	0.10	0.06	4.41	4.41
45	0.12	0.08	0.17	0.09	4.48	4.48
50	0.22	0.14	0.31	0.15	4.86	4.86
55	0.39	0.21	0.52	0.23	5.43	5.41
60	0.61	0.34	0.77	0.38	3.72	3.51
65	0.92	0.58	1.24	0.64	1.24	0.64
70	1.56	0.97	2.22	1.09	2.22	1.09

## Actuarial Basis

### Summary of Actuarial Assumptions *(continued)*

#### Summary of Rates

Age	Ultimate Withdrawal		Disability		Salary Increases
	Male	Female	Male	Female	
20	6.90%	8.55%	0.010%	0.010%	5.75%
25	5.90	7.80	0.010	0.010	5.75%
30	4.90	7.05	0.010	0.010	5.75%
35	3.90	5.10	0.030	0.030	5.75%
40	3.20	4.38	0.080	0.080	5.75%
45	2.70	3.75	0.130	0.130	5.45%
50	2.20	3.05	0.288	0.288	4.95%
55	0.00	0.00	0.504	0.432	4.45%
60	0.00	0.00	0.780	0.624	4.25%
65	0.00	0.00	0.000	0.000	4.25%
70	0.00	0.00	0.000	0.000	4.25%

Age	Retirement	
	Rule of 90 Eligible	All Others
55	25%	5%
56	20	5
57	20	5
58	20	5
59	20	5
60	20	10
61	25	10
62	50	25
63	40	20
64	40	20
65	45	45
66	30	30
67	30	30
68	30	30
69	30	30
70	30	30

## Actuarial Basis

### Summary of Plan Provisions

This summary of provisions reflects the interpretation of applicable Statutes for purposes of preparing this valuation. This interpretation is not intended to create or rescind any benefit rights in conflict with any Minnesota Statutes.

<i>Plan year</i>	July 1 through June 30		
<i>Eligibility</i>	State employees, non-academic staff of the University of Minnesota and employees of certain Metro level government units, unless excluded by law.		
<i>Contributions</i>	Shown as a percent of salary:		
	<u>Date of Increase</u>	<u>Employee</u>	<u>Employer</u>
	Current	4.50%	4.50%
	July 1, 2009	4.75%	4.75%
	July 1, 2010	5.00%	5.00%
<i>Allowable service</i>	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.		
<i>Salary</i>	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.		
<b>Retirement</b>			
<u>Normal retirement benefit</u>			
<i>Age/Service requirements</i>	First hired before July 1, 1989:		
	(a.) Age 65 and three years of Allowable Service.		
	(b.) Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.		
	First hired after June 30, 1989:		
	(a.) 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.		
	(b.) Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.		
<i>Amount</i>	1.70% of Average Salary for each year of Allowable Service		
<u>Early retirement</u>			
<i>Age/Service requirements</i>	First hired before July 1, 1989:		
	(a.) Age 55 and three years of Allowable Service.		
	(b.) Any age with 30 years of Allowable Service.		
	(c.) Rule of 90: Age plus Allowable Service totals 90.		
	First hired after June 30, 1989:		
	Age 55 with three years of Allowable Service		

## Actuarial Basis

### Summary of Plan Provisions *(continued)*

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#### *Retirement (continued)*

##### Early retirement (continued)

###### *Amount*

The greater of (a) or (b):

- (a.) 1.20% of Average Salary for each of the first ten years of Allowable Service and 1.70% 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 under age 62 if 30 years of Allowable Service. No reduction if age plus years of Allowable Service totals 90.
- (b.) 1.70% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3.00% per year and actuarial reduction for each month the member is under age 65.

First hired after June 30, 1989:

1.70% 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 3.00% per year and actuarial reduction for each month the member is under the normal retirement age.

##### 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

The inflation-based benefit increase provided by the Minnesota Post Retirement Investment Fund (Post Fund) to benefit recipients is equal to 100 percent of CPI-W, but not to exceed 2.5 percent. An additional benefit increase may be provided to any individuals who have lost purchasing power compared to the value of the benefit they initially received when their benefit first commenced. This additional benefit increase can only be paid if the Post Fund composite funding ratio is at least 90 percent, if the rate of return earned on Post Fund assets exceeds 8.5 percent for the year, and if the inflation rate certified for the year is less than 2.5 percent. If the Post Fund has a funding ratio of 100 percent or more, an additional inflation component will be paid when CPI-W inflation exceeds 2.5 percent. An overall cap of 5.0 percent annually on benefit recipient adjustments is effective June 30, 2010.

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 pro rata increase.

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## Actuarial Basis

### Summary of Plan Provisions (continued)

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#### Retirement (continued)

##### Benefit increases (continued)

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 time 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.

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#### Disability

##### Disability Benefit

##### *Age/Service requirement*

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 becomes 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 5.00% to 6.00%.

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

##### *Age/Service requirement*

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.

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## Actuarial Basis

### Summary of Plan Provisions (continued)

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#### Death

##### Surviving spouse optional benefit

<i>Age/service requirement</i>	Member or former member who dies before retirement or disability benefits commence with three years of Allowable Service. If a formers 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.
<i>Amount</i>	Surviving spouse receives the 100% joint and survivor benefits 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.  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 5.00% to 6.00%.
<i>Benefit increases</i>	Same as for retirement.

##### Surviving dependent children's benefit

<i>Age/service requirement</i>	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.
<i>Amount</i>	Actuarially equivalent to surviving spouse 100% joint and survivor annuity payable to the later of age 20 or five years. The amount is proportionally divided among surviving children.  If a member becomes 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 5.00% to 6.00%.

##### Refund of contributions

<i>Age/service requirement</i>	Active employee dies and survivor benefits are not payable or a former employee dies before annuity begins or former employee who is not entitled to an annuity dies.
<i>Amount</i>	The member's contributions with 5.00% interest if death occurred before May 16, 1989 and 6.00% interest if death occurred on or after May 16, 1989.
<i>Age/service requirement</i>	Retired or disabled annuitant who did not select an optional annuity dies, or the remaining recipient of an option dies.
<i>Amount</i>	The excess of the member's contributions over all benefits paid.

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## Actuarial Basis

### Summary of Plan Provisions *(continued)*

#### Termination

##### Refund of contributions

*Age/service requirement*

Termination of state service.

*Amount*

Member's contributions with 5.00% interest compounded annually if termination occurred before May 16, 1989 and 6.00% interest if termination occurred on or after May 16, 1989. A deferred annuity may be elected in lieu of a refund.

##### Deferred benefit

*Age/service requirement*

Three years of Allowable Service.

*Amount*

Benefit computed under law in effect at termination and increased by the following percentage:

- (a.) 0.00% before July 1, 1971;
- (b.) 5.00% from July 1, 1971 to January 1, 1981;
- (c.) 3.00% thereafter until January 1 of the year following attainment of age 55; and
- (d.) 5.00% hereafter until the annuity begins (2.50% if hired after June 30, 2006). 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 5.00% to 6.00%.

#### *Changes in Plan Provisions*

The following changes in plan provisions are reflected in this valuation:

##### Revised Minnesota Post Retirement Investment Fund Benefit Increase

The inflation-based benefit increase provided by the Minnesota Post Retirement Investment Fund (Post Fund) to benefit recipients is equal to 100 percent of CPI-W, but not to exceed 2.5 percent. An additional benefit increase may be provided to any individuals who have lost purchasing power compared to the value of the benefit they initially received when their benefit first commenced. This additional benefit increase can only be paid if the Post Fund composite funding ratio is at least 90 percent, if the rate of return earned on Post Fund assets exceeds 8.5 percent for the year, and if the inflation rate certified for the year is less than 2.5 percent. If the Post Fund has a funding ratio of 100 percent or more, an additional inflation component will be paid when CPI-W inflation exceeds 2.5 percent. An overall cap of 5.0 percent annually on benefit recipient adjustments is effective June 30, 2010.

## Actuarial Basis

### Summary of Plan Provisions *(continued)*

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*Changes in Plan Provisions  
(continued)*

Potential Dissolution of Minnesota Post Fund

If the Post Fund composite funding ratio is less than 80 percent in any one year, or less than 85 percent in two consecutive years, the Post Fund must be dissolved, and assets will be transferred back to the applicable plan and be merged with the active member assets for that plan. If the Post Fund is dissolved, notwithstanding any other law, the benefit recipients will receive an annual 2.5 percent increase in lieu of any other benefit increase.

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## Plan Accounting Under GASB 25 (as amended by GASB 50)

Provided below is information required under GASB Statement No. 25 as amended by GASB Statement No. 50 – Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans as amended by GASB Statement No. 50.

### Schedule of Funding Progress<sup>1</sup> (Dollars in Thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded (Overfunded) AAL (UAAL) (b) – (a)	Funded Ratio (a)/(b)	Actual Covered Payroll (Previous FY) (c)	UAAL as a Percentage 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%)
07/01/2002	7,673,028	7,340,397	(332,631)	104.53%	1,915,350	(17.37%)
07/01/2003	7,757,292	7,830,671	73,379	99.06%	2,009,975	3.65%
07/01/2004	7,884,984	7,878,363	(6,621)	100.08%	1,965,546	(0.34%)
07/01/2005	8,081,736	8,455,336	373,600	95.58%	1,952,320	19.14%
07/01/2006	8,486,756	8,819,161	332,405	96.23%	2,016,588	16.48%
07/01/2007	8,904,517	9,627,305	722,788	92.49%	2,095,310	34.50%
07/01/2008	9,013,456	9,994,602	981,146	90.18%	2,256,528	43.48%

<sup>1</sup> Information prior to 2008 provided by The Segal Company.

## Plan Accounting Under GASB 25 (as amended by GASB 50)

### Schedule of Contributions from the Employer and Other Contributing Entities<sup>1</sup> (Dollars in Thousands)

The GASB Statement No. 25 required and actual contributions are as follows:

Plan Year Ended June 30	Actuarially Required Contribution Rate (a)	Actual Covered Payroll (b)	Actual Member Contributions (c)	Annual Required Contributions [(a)x(b)] - (c) = (d)	Actual Employer Contributions <sup>2</sup> (e)	Percentage Contributed (e) / (d)
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	113.33%
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 <sup>3</sup>	7.12%	1,834,042	74,364	56,220	73,362	130.49%
2002	6.79%	1,915,350	79,487	50,565	76,614	151.52%
2003 <sup>4</sup>	8.34%	2,009,975	83,850	83,782	80,399	95.96%
2004	9.43%	1,965,546	82,103	103,248	78,622	76.15%
2005	9.33%	1,952,323	83,101	99,051	80,312	81.08%
2006	10.55%	2,016,588	85,379	127,371	82,645	64.88%
2007 <sup>5</sup>	10.11%	2,095,310	89,447	122,389	86,492	70.67%
2008 <sup>6</sup>	11.76% <sup>7</sup>	2,256,528	99,280	166,088	96,746	58.25%
2009	12.39%					

<sup>1</sup> Information prior to 2008 provided by The Segal Company.

<sup>2</sup> Includes contributions from other sources (if applicable).

<sup>3</sup> Actuarially Required Contribution Rate prior to change in Actuarial Assumptions and Asset Valuation Method is 5.72%.

<sup>4</sup> Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 7.22%.

<sup>5</sup> Actuarially Required Contribution Rate prior to change in employee contribution rates is approximately 10.06%.

<sup>6</sup> Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 10.61%.

<sup>7</sup> Actuarially Required Contribution Rate provided by The Segal Company.

## Glossary

**Actuarial Asset Value.** The value of assets used in calculating the required contributions. The actuarial asset value may be equal to the fair market value of assets, or it may spread the recognition of certain investment gains or losses over a period of years in accordance with an asset valuation method. The goal of an asset valuation method is to produce a relatively stable asset value thereby reducing year-to-year volatility in contribution requirements.

**Actuarial Cost Method.** Sometimes called “funding method,” a particular technique used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily, the annual contribution to the plan comprises the normal cost and an amount for amortization of the unfunded actuarial accrued liability.

**Annual Pension Cost.** A measure of the periodic cost of an employer’s participation in a defined benefit pension plan.

**Annual Required Contributions (ARC).** The employer’s periodic required contributions to a defined benefit pension plan, calculated in accordance with the parameters of GASB 25 (as amended by GASB 50) or GASB 27.

**ASA.** Associate of the Society of Actuaries.

**Current Benefit Obligations.** The present value of benefits earned to the valuation date, based on current service and including future salary increases to retirement.

**FSA.** Fellow of the Society of Actuaries.

**Normal Cost.** The annual cost assigned to the current year, under the actuarial cost method in use.

**Present Value.** Sometimes called “actuarial present value,” the current worth (on the valuation date) of an amount or series of amounts payable or receivable in the future. The present value is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

**Statement No. 25 of the Governmental Accounting Standards Board (GASB 25).** The accounting standard governing the financial reporting for defined benefit pension plans and note disclosures for defined contribution plans.

**Statement No. 27 of the Governmental Accounting Standards Board (GASB 27).** The accounting standard governing a state or local governmental employer’s accounting for pensions.

**Statement No. 50 of the Governmental Accounting Standards Board (GASB 50).** The accounting standard amending both GASB 25 and GASB 27 to require a schedule of funding progress under the Entry Age Normal method for plans that use the aggregate funding method to determine the Annual Required Contribution.

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