

December 2008

Correctional Employees Retirement Fund

Actuarial Valuation Report as of July 1, 2008

MERCER



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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 Correctional 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)	17.10%	15.50%
Required Contributions – Chapter 356 (% of Payroll)	23.66%	24.44%
Sufficiency / (Deficiency)	(6.56%)	(8.94%)

The contribution deficiency decreased from (8.94%) of payroll to (6.56%) of payroll. The primary reason for the improvement is the extension of the full funding date to July 1, 2038. However, 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. 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 (4.8%) 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 2.4% for the plan year ending June 30, 2008 as compared to the assumed rate of 8.5%.

Participant reconciliation and statistics are detailed in the “Participant 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.

Changes in actuarial assumptions, methods, and plan provisions since the July 1, 2007 valuation 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*
Contributions (% of Payroll)		
Statutory – Chapter 352	17.10%	15.50%
Required – Chapter 356	23.66%	24.44%
Sufficiency / (Deficiency)	(6.56%)	(8.94%)
Funding Ratios (dollars in thousands)		
Accrued Benefit Funding Ratio		
– Current assets (AVA)	\$ 572,719	\$ 559,852
– Current benefit obligations	729,003	668,086
– Funding ratio	78.56%	83.80%
Accrued Liability Funding Ratio		
– Current assets (AVA)	\$ 572,719	\$ 559,852
– Actuarial accrued liability	760,363	708,292
– Funding ratio	75.32%	79.04%
Projected Benefit Funding Ratio		
– Current and expected future assets	\$ 852,907	\$ 719,592
– Current and expected future benefit obligations	1,040,551	982,817
– Funding ratio	81.97%	73.22%
Participant Data		
Active members		
– Number	4,520	4,332
– Projected annual earnings (000s)	205,537	187,309
– Average annual earnings (projected)	45,473	43,238
– Average age	40.3	40.1
– Average service	7.2	7.0
Service retirements	1,293	1,210
Survivors	123	118
Disability retirements	184	174
Deferred retirements	888	851
Terminated other non-vested	548	494
Total	7,556	7,179

* Provided by The Segal Company.

Effects of Changes

The following assumptions and methods were changed as of July 1, 2008:

- The full funding date was reset to July 1, 2038.
- The ultimate salary increase rates were lowered by 0.50% at all ages.
- The payroll growth assumption was reduced from 5.0% to 4.5%.

These changes had the following affect on the valuation results:

- \$7.0 million decrease in actuarial accrued liability.
- A decrease in the required contribution of 3.6% of pay.

The basis for determining benefit increases for benefit recipients was revised since the last valuation on 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 Correctional 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 Pensions 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

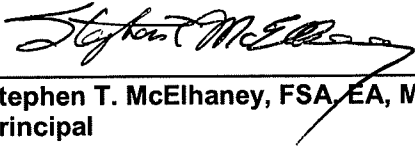
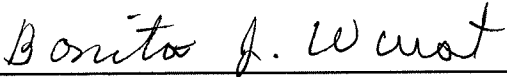
All costs, liabilities and other factors for the Fund were determined in accordance with generally accepted actuarial principles and procedures, in accordance with the provisions of current federal and state statutes and regulations issued thereunder. The economic assumptions are set in Minnesota Statutes, 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.

	<u>12/5/2008</u>
Stephen T. McElhaney, FSA, EA, MAAA Principal	Date
	<u>12/5/2008</u>
Bonita J. Wurst, ASA, EA, MAAA Principal	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
Assets in Trust		
▪ Cash, equivalents, short term securities	\$ 5,230	\$ 5,230
▪ Fixed income	67,679	72,009
▪ Equity	215,643	225,513
▪ Equity in MPRIF	271,717	338,511
▪ Other	0	0
Total assets in trust	\$ 560,269	\$ 641,263
Due from MPRIF (for mortality gain)	3,775	3,775
Assets Receivable	1,621	1,621
Total Assets	\$ 565,665	\$ 646,659
Amounts Payable	\$ (485)	\$ (485)
Net Assets	\$ 565,180	\$ 646,174
Net assets held in trust for pension benefits		
▪ MPRIF reserves	\$ 271,717	\$ 338,511
▪ Member reserves	81,233	81,233
▪ Other non-MPRIF reserves	212,230	226,430
Total assets available for benefits	\$ 565,180	\$ 646,174

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 Retirement System and 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
1. Fund balance at market value at July 1, 2007	\$ 298,712	\$ 296,346	\$ 595,058
2. Contributions			
a. Member	12,775	0	12,775
b. Employer	18,623	0	18,623
c. Other sources	0	0	0
d. Total contributions	\$ 31,398	\$ 0	\$ 31,398
3. Investment income			
a. Interest and income	\$ (13,857)	\$ (15,971)	\$ (29,828)
b. Investment expenses	(423)	(422)	(845)
c. Net investment income	\$ (14,280)	\$ (16,393)	\$ (30,673)
4. Other	\$ 1,839	\$ 0	\$ 1,839
5. Total income (2.d. + 3.c. + 4.)	\$ 18,957	\$ (16,393)	\$ 2,564
6. Benefits Paid			
a. Annuity benefits	\$ 0	\$ (30,932)	\$ (30,932)
b. Refunds	(795)	0	(795)
c. Total benefits paid	\$ (795)	\$ (30,932)	\$ (31,727)
7. Expenses			
a. Other	\$ (305)	\$ 0	\$ (305)
b. Administrative	(410)	0	(410)
c. Total expenses	\$ (715)	\$ 0	\$ (715)
8. Total disbursements (6.c. + 7.c.)	\$ (1,510)	\$ (30,932)	\$ (32,442)
9. Other changes in reserves			
a. Annuities awarded	\$ (26,471)	\$ 26,471	\$ 0
b. MPRIF mortality gain	3,775	(3,775)	0
c. Change in assumptions	0	0	0
d. Total other changes	\$ (22,696)	\$ 22,696	\$ 0
10. Fund balance at market value at June 30, 2008 (1. + 5. + 8. + 9.d.)	\$ 293,463	\$ 271,717	\$ 565,180

Plan Assets

Actuarial Asset Value (Dollars in Thousands)

	June 30, 2008		
1. Market value of assets available for benefits			\$ 565,180
2. Determination of average balance			
a. Non-MPRIF assets available at July 1, 2007			298,712
b. Non-MPRIF assets available at June 30, 2008 (before MPRIF mortality adjustment)			289,688
c. Net investment income for fiscal year ending June 30, 2008			(12,441)
d. Average balance $[a. + b. - c.] / 2$			300,421
3. Expected return $[8.5\% * 2.d.]$			25,536
4. Actual return			(12,441)
5. Current year unrecognized asset return			(37,977)
6. Unrecognized asset returns			
	Original	% Not	
	Amount	Recognized	
a. Year ended June 30, 2008	\$ (37,977)	80%	\$ (30,381)
b. Year ended June 30, 2007	29,894	60%	17,936
c. Year ended June 30, 2006	9,447	40%	3,779
d. Year ended June 30, 2005	5,634	20%	1,127
e. Total unrecognized return			\$ (7,539)
7. Actuarial value at June 30, 2008 (1. - 6.e.)			\$ 572,719

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 +	
Under 20	3								3
Avg. Earnings	26,876								26,876
20 - 24	254	1							255
Avg. Earnings	37,104	34,780							37,095
25 - 29	639	69		1					709
Avg. Earnings	33,560	40,360		4,329					34,180
30 - 34	396	171	29						596
Avg. Earnings	35,209	42,708	48,389						38,002
35 - 39	303	158	146	16					623
Avg. Earnings	35,323	42,212	50,023	56,315					41,054
40 - 44	227	146	155	96	19	2			645
Avg. Earnings	37,772	43,172	51,632	55,092	57,112	58,538			45,537
45 - 49	228	132	137	120	90	32			739
Avg. Earnings	39,241	44,835	50,723	54,931	59,882	57,589			48,225
50 - 54	206	131	128	73	44	71	17		670
Avg. Earnings	43,346	47,741	50,311	55,076	58,185	58,191	61,389		49,819
55 - 59	71	51	36	12	9	7	2		188
Avg. Earnings	45,710	49,668	54,637	54,434	62,153	59,741	39,539		50,294
60 - 64	41	19	11	3	3	1		1	79
Avg. Earnings	46,678	52,654	54,400	56,735	52,009	55,885		54,975	49,996
65+	7	1	2	2			1		13
Avg. Earnings	31,369	62,001	62,356	63,636			64,431		47,385
Total	2,375	879	644	323	165	113	20	1	4,520
Avg. Earnings	36,810	44,213	50,914	54,976	59,091	58,102	59,356	54,975	43,007

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+	
50 - 54	17	43						60
Avg. Benefit	17,665	15,499						16,113
55 - 59	65	306	46					417
Avg. Benefit	15,138	17,176	15,075					16,627
60 - 64	17	48	287	11				363
Avg. Benefit	8,278	10,457	17,215	20,640				16,006
65 - 69	9	32	40	98	2			181
Avg. Benefit	9,843	9,685	14,641	22,766	21,563			18,002
70 - 74		6	36	38	52			132
Avg. Benefit		23,872	16,512	16,741	27,265			21,149
75 - 79			4	8	18	38		68
Avg. Benefit			8,994	18,428	19,122	24,128		21,242
80 - 84					1	16	28	45
Avg. Benefit					14,244	25,881	22,996	23,827
85+						1	26	27
Avg. Benefit						20,761	15,031	15,244
Total	108	435	413	155	73	55	54	1,293
Avg. Benefit	14,015	15,810	16,586	20,914	24,923	24,577	19,161	17,547

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+	
<50+	2	7	6	1				16
Avg. Benefit	8,541	7,307	7,869	11,705				7,947
50 – 54	1	11	5	2				19
Avg. Benefit	11,382	11,969	6,995	5,995				10,000
55 – 59	3	8	10	2	1			24
Avg. Benefit	10,320	12,507	10,829	2,513	8,967			10,554
60 – 64	2	10	4	6				22
Avg. Benefit	13,523	12,318	10,543	11,650				11,923
65 – 69		3	5	2	1	1		12
Avg. Benefit		13,162	18,262	14,891	8,567	5,851		14,583
70 – 74	1	4	5	2			2	14
Avg. Benefit	25,643	17,405	13,951	10,623			29,492	17,518
75 – 79		2	2	1	1	1		7
Avg. Benefit		7,941	7,149	7,454	11,882	5,907		7,918
80 – 84	1		1	2	1			5
Avg. Benefit	15,177		13,825	21,519	7,791			15,966
85+				1		1	2	4
Avg. Benefit				1,531		3,574	9,831	6,192
Total	10	45	38	19	4	3	4	123
Avg. Benefit	12,729	11,801	11,101	10,614	9,302	5,111	19,642	11,488

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+	
<50+	8	25	28	7	1			69
Avg. Benefit	13,667	16,481	16,941	14,266	15,483			16,102
50 – 54	5	12	13	8				38
Avg. Benefit	15,650	19,047	18,970	15,714				17,872
55 – 59	3	13	18	7	1			42
Avg. Benefit	6,836	17,889	15,938	17,086	18,363			16,141
60 – 64		3	14	6	1			24
Avg. Benefit		20,242	17,969	17,679	9,966			17,847
65 – 69		3	2	2	3			10
Avg. Benefit		15,328	15,344	25,784	19,146			18,568
70 – 74						1		1
Avg. Benefit						22,207		22,207
75+								0
Avg. Benefit								0
Total	16	56	75	30	6	1	0	184
Avg. Benefit	13,006	17,498	17,201	16,760	16,875	22,207	0	16,871

Membership Data

Reconciliation of Members*

	Actives	Terminated		Recipients			Total
		Deferred Retirement	Other Non-vested	Service Retirements	Disability Retirements	Survivors	
Members on 7/1/2007	4,332	851	494	1,210	174	118	7,179
New entrants	667	0	0	0	0	0	667
Return to active	40	(31)	(9)	0	0	0	0
Terminated non-vested	(122)	(2)	190	0	0	0	66
Service retirements	(87)	(19)	0	108	0	0	2
Terminated deferred	(96)	101	(1)	0	0	0	4
Terminated refund	(140)	(6)	(66)	0	0	0	(212)
Deaths	(6)	(1)	(1)	(11)	(5)	(5)	(29)
New beneficiary	0	0	0	0	0	9	9
Disabled	(12)	(3)	(1)	0	17	0	1
Transferred to Fund	(1)	(1)	(52)	0	0	0	(54)
Data correction	(55)	(1)	(6)	(14)	(2)	1	(77)
Net change	188	37	54	83	10	5	377
Members on 6/30/2008	4,520	888	548	1,293	184	123	7,556

* Provided by MSRS 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 of compensation. 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.

				June 30, 2008
A.	Actuarial Value of Assets			\$ 572,719
B.	Expected future assets			
1.	Present value of expected future statutory supplemental contributions			\$ 0*
2.	Present value of future normal cost contributions			280,188
3.	Total expected future assets (1. + 2.)			<u>\$ 280,188</u>
C.	Total current and expected future assets			\$ 852,907
D.	Current benefit obligations			
1.	Benefit recipients	<u>Non-Vested</u>	<u>Vested</u>	<u>Total</u>
a.	Service retirements	\$ 0	\$ 280,083	\$ 280,083
b.	Disability	0	42,212	42,212
c.	Survivors	0	16,216	16,216
2.	Deferred retirements with augmentation	0	55,820	55,820
3.	Former members without vested rights	0	912	912
4.	Active Members	<u>16,388</u>	<u>317,372</u>	<u>333,760</u>
5.	Total Current Benefit Obligations	\$ <u>16,388</u>	\$ <u>712,615</u>	\$ <u>729,003</u>
E.	Expected Future Benefit Obligations			\$ 311,548
F.	Total Current and Expected Future Benefit Obligations			\$ 1,040,551
G.	Unfunded Current Benefit Obligations (D.5. - A.)			\$ 156,284
H.	Unfunded Current and Future Benefit Obligations (F. - C.)			\$ 187,644

* Limited to zero as per Minnesota Standards for Actuarial Work.

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	\$ 523,008	\$ 198,544	\$ 324,464
b. Disability benefits	73,547	42,900	30,647
c. Survivor's benefits	11,955	5,451	6,504
d. Deferred retirements	25,792	14,277	11,515
e. Refunds	11,006	19,016	(8,010)
f. Total	\$ 645,308	\$ 280,188	\$ 365,120
2. Deferred retirements with future augmentation	55,820	0	55,820
3. Former members without vested rights	912	0	912
4. Annuitants in MPRIF	338,511	0	338,511
5. Annuitants not in MPRIF	0	0	0
6. Total	\$ 1,040,551	\$ 280,188	\$ 760,363
B. Determination of Unfunded Actuarial Accrued Liability (UAAL)			
1. Actuarial accrued liability			\$ 760,363
2. Current assets			572,719
3. Unfunded actuarial accrued liability			\$ 187,644
C. Determination of Supplemental Contribution Rate			
1. Present value of future payrolls through the amortization date of July 1, 2038			\$ 3,606,570
2. Supplemental contribution rate (B.3. / C.1.)			5.20%

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	\$ 148,440
B. Changes due to interest requirements and current rate of funding	
1. Normal cost and actual administrative expenses	\$ 33,534
2. Contributions	(31,398)
3. Interest on A., B.1. and B.2.	12,708
4. Total (B.1. + B.2. + B.3.)	\$ 14,844
C. Expected unfunded actuarial accrued liability at end of year (A. + B.4.)	\$ 163,284
D. Increase (decrease) due to actuarial losses (gains) because of experience deviations from expected	
1. Salary increases	\$ (1,540)
2. Investment return	34,378
3. MPRIF Mortality	(3,775)
4. Mortality of other benefit recipients	0
5. Other items	2,318
6. Total	\$ 31,381
E. Unfunded actuarial accrued liability at end of year before plan amendments and changes in actuarial assumptions (C. + D.6.)	\$ 194,665
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	\$ (7,021)
H. Unfunded actuarial accrued liability at end of year (E. + F. + G.)	\$ 187,644

Development of Costs

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

	Percent of Payroll	Dollar Amount
A. Statutory contributions – Chapter 352		
1. Employee contributions	7.00%	\$ 14,388
2. Employer contributions	10.10%	20,759
3. Total	17.10%	\$ 35,147
B. Required contributions – Chapter 356		
1. Normal cost		
a. Retirement benefits	13.18%	\$ 27,091
b. Disability benefits	2.91%	5,990
c. Survivors	0.32%	665
d. Deferred retirement benefits	0.81%	1,656
e. Refunds	1.02%	2,098
f. Total	18.24%	\$ 37,500
2. Supplemental contribution amortization by July 1, 2038 of Unfunded Actuarial Accrued Liability		
a. Due to unfunded MPRIF liability	1.85%	\$ 3,802
b. Due to unfunded non-MPRIF liability	3.35%	6,886
c. Total supplemental contribution amortization	5.20%	\$ 10,688
3. Allowance for expenses	0.22%	\$ 452
4. Total	23.66%	\$ 48,640
C. Contribution Sufficiency/(Deficiency) (A.3. – B.4.)	(6.56%)	\$ (13,493)

Note: Projected annual payroll for fiscal year beginning on the valuation date: \$205,537.

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

Actuarial 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, 2038 (July 1, 2023 last year) assuming payroll increases of 4.5% per annum (5.0% last year). If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount is 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 are accounted for by using the 6.0% post-retirement assumption.															
<i>Salary increases</i>	Reported salary at valuation date increased according to the rate table below, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for new members.															
<i>Mortality rates</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>	Combined Annuity Mortality up to age 40, grading to health mortality for ages 60 and over															
<i>Retirement</i>	Age related table as follows: <table style="margin-left: 40px;"> <tr> <td>Ages:</td> <td>50-54</td> <td>5%</td> </tr> <tr> <td></td> <td>55</td> <td>60%</td> </tr> <tr> <td></td> <td>56-61</td> <td>10%</td> </tr> <tr> <td></td> <td>62-64</td> <td>25%</td> </tr> <tr> <td></td> <td>65 & over</td> <td>100%</td> </tr> </table>	Ages:	50-54	5%		55	60%		56-61	10%		62-64	25%		65 & over	100%
Ages:	50-54	5%														
	55	60%														
	56-61	10%														
	62-64	25%														
	65 & over	100%														
<i>Withdrawal</i>	Select and Ultimate rates based on actual experience. Rates after the third year are shown in rate table. Select rates in the first three years are 10% each year.															
<i>Disability</i>	Age-related rates based on experience; see table of sample rates.															
<i>Allowance for combined service annuity</i>	Liabilities for former members are increased by 30.00% 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 projected payroll.															
<i>Refund of contributions</i>	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.															
<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 Assumption *(continued)*

<i>Form of payment</i>	<p>Married members assumed to elect subsidized joint and survivor form of annuity as follows:</p> <p>Males: 25% elect 50% J&S option 25% elect 100% J&S option</p> <p>Females: 5% elect 50% J&S option 5% elect 100% J&S option</p>
<i>Changes in actuarial assumptions</i>	<p>The following changes were recognized as of July 1, 2008:</p> <ul style="list-style-type: none"> ▪ The ultimate salary increase rates were lowered by 0.50% at all ages. ▪ The payroll growth assumption was reduced from 5.0% to 4.5%. ▪ The full funding date is reset to July 1, 2038.

Actuarial Basis

Summary of Actuarial Assumptions *(continued)*

Age	Rate (%)					
	Healthy Pre-Retirement Mortality		Healthy Post-Retirement Mortality		Disability Mortality	
	Male	Female	Male	Female	Male	Female
20	0.03%	0.02%	0.04%	0.02%	.21%	.21%
25	0.04	0.02	0.04	0.02	.22	.22
30	0.05	0.03	0.05	0.03	.24	.24
35	0.06	0.04	0.07	0.04	.31	.31
40	0.09	0.06	0.10	0.06	.46	.46
45	0.12	0.08	0.17	0.09	.58	.48
50	0.22	0.14	0.31	0.15	.69	.49
55	0.39	0.21	0.52	0.23	.80	.51
60	0.61	0.34	0.77	0.38	.92	.52
65	0.92	0.58	1.24	0.64	1.56	.87
70	1.56	0.97	2.22	1.09	2.75	1.62

Age	Withdrawal		Disability Retirement		Salary Increases
	Male	Female	Male	Female	
20	12.00%	8.00%	0.05%	0.08%	6.75%
25	7.35	7.00	0.08	0.12	6.50%
30	4.55	6.75	0.11	0.16	6.50%
35	3.00	6.45	0.15	0.22	6.50%
40	2.20	5.20	0.24	0.36	6.00%
45	1.70	3.20	0.39	0.58	5.25%
50	1.20	2.35	0.67	1.00	5.00%
55	0.70	1.65	1.17	1.76	4.75%
60	0.00	0.00	1.88	2.82	4.75%
65	0.00	0.00	0.00	0.00	4.75%
70	0.00	0.00	0.00	0.00	0.00%

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 in covered correctional service.												
<i>Contributions</i>	Shown as a percent of salary:												
	<table border="1"> <thead> <tr> <th><u>Date of Increase</u></th> <th><u>Employee</u></th> <th><u>Employer</u></th> </tr> </thead> <tbody> <tr> <td>Current</td> <td>7.00%</td> <td>10.10%</td> </tr> <tr> <td>July 1, 2009</td> <td>7.70%</td> <td>11.10%</td> </tr> <tr> <td>July 1, 2010</td> <td>8.00%</td> <td>12.10%</td> </tr> </tbody> </table>	<u>Date of Increase</u>	<u>Employee</u>	<u>Employer</u>	Current	7.00%	10.10%	July 1, 2009	7.70%	11.10%	July 1, 2010	8.00%	12.10%
<u>Date of Increase</u>	<u>Employee</u>	<u>Employer</u>											
Current	7.00%	10.10%											
July 1, 2009	7.70%	11.10%											
July 1, 2010	8.00%	12.10%											
<i>Allowable service</i>	Service during which member contributions were made. May also include certain leave of absence, military service and periods while temporary Worker's Compensation is paid.												
<i>Salary</i>	Includes wages, allowances and fees. Excludes lump sum payments of separation and reduced salary while receiving Worker's Compensation benefits.												
<i>Average salary</i>	Average of the five highest successive years of Salary. Average Salary is based on all Allowable Service if less than five years.												
Retirement													
<u>Normal retirement benefit</u>													
<i>Age/Service requirement</i>	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.												
<i>Amount</i>	2.40% of Average Salary for each year of Allowable Service, pro-rata for completed months.												
<u>Early retirement</u>													
<i>Age/Service requirement</i>	Age 50 and three years of Allowable Service.												
<i>Amount</i>	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.												

Actuarial Basis

Summary of Plan Provisions *(continued)*

Retirement <i>(continued)</i>	
<u>Form of payment</u>	Life annuity. Actuarially equivalent options are: <ul style="list-style-type: none"> (a.) 50% or 100% Joint and Survivor with bounce back feature without additional reduction. (b.) 15-year Certain and Life (c.) Level Social Security option either to age 62 or Social Security Retirement Age.
<u>Benefit increases</u>	<p>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.</p> <p>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.</p>
Disability	
<u>Occupational Disability</u>	
<u>Age/Service requirement</u>	Member who cannot perform his duties as a direct result of a disability relating to an act of duty.
<u>Amount</u>	<p>50.00% of Average Salary plus 2.40% of Average Salary for each year in excess of 20 years and 10 months of Allowable Service (pro rata for completed months).</p> <p>Maximum of 75.0% of Average Salary.</p> <p>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.</p>

Actuarial Basis

Summary of Plan Provisions *(continued)*

Disability <i>(continued)</i>	
<u>Non-occupational Disability</u>	
<i>Age/Service requirement</i>	At least one year of Correctional service and disability not related to covered employment.
<i>Amount</i>	Normal retirement benefit based on Allowable Service (minimum of 15 years) and Average Salary at disability.
<i>Form of payment</i>	Same as for retirement.
<i>Benefit increases</i>	Adjusted by MSRS to provide same increase as MPRIF.
<u>Retirement disability</u>	
<i>Age/service requirement</i>	Age 62 with continued disability.
<i>Amount</i>	Benefit computed as a normal retirement benefit under General Plan based on same Allowable Service and without reduction for age.
<i>Form of payment</i>	Same as for retirement.
<i>Benefit increases</i>	Same as for retirement.

Death	
<u>Surviving spouse benefit</u>	
<i>Age/service requirement</i>	Member at any age or former member age 50 or older who dies before retirement or disability benefit commences 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.
<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 (lump sum payable to estate at death).
<i>Benefit increases</i>	Adjusted by MSRS to provide same income as MPRIF.
<u>Surviving dependent children's benefit</u>	
<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 to be proportionally divided among surviving children.

Actuarial Basis

Summary of Plan Provisions *(continued)*

Death <i>(continued)</i>	
<u>Refund of contributions with interest</u>	
<i>Age/service requirement</i>	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.
<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.

Termination	
<u>Refund of contributions</u>	
<i>Age/service requirement</i>	Termination of state service.
<i>Amount</i>	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 if three or more years of Allowable Service.
<u>Deferred benefit</u>	
<i>Age/service requirement</i>	Three years of Correctional and General Service.
<i>Amount</i>	Benefit computed under law in effect at termination and increased 3.00% compounded annually until January 1 of the year following attainment of age 55 and 5.00% (2.50% if hired after June 30, 2006) thereafter until the annuity begins.

<i>Changes in Plan Provisions</i>	The following changes in plan provisions are reflected in this valuation:
	<u>Revised Minnesota Post Retirement Investment Fund Benefit Increase</u>
	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)*

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.

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 Progress¹ (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	\$ 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%)
07/01/2002	457,416	446,426	(10,990)	102.46%	124,373	(8.84%)
07/01/2003	470,716	484,974	14,258	97.06%	131,328	10.86%
07/01/2004	486,617	524,215	37,598	92.83%	133,172	28.23%
07/01/2005	503,573	546,118	42,544	92.21%	132,335	32.15%
07/01/2006	535,357	647,480	112,123	82.68%	145,879	76.86%
07/01/2007	559,852	708,292	148,440	79.04%	167,727	88.50%
07/01/2008	572,719	760,363	187,644	75.32%	194,391	96.53%

¹ 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 Entities¹ (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 ² (e)	Percentage Contributed (e)/(d)
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 ²	12.99%	106,131	6,378	7,408	8,172	110.31%
2000 ³	13.66%	112,587	6,526	8,853	8,984	101.48%
2001 ⁴	13.72%	120,947	6,996	9,598	9,652	100.56%
2002	13.81%	124,373	7,207	9,969	9,925	99.56%
2003 ⁵	14.73%	131,328	7,610	11,735	10,480	89.31%
2004	15.83%	133,172	7,748	13,333	10,627	79.71%
2005	17.48%	132,335	7,943	15,189	11,016	72.52%
2006	17.71%	145,879	8,964	16,871	12,152	72.03%
2007 ⁶	23.34%	167,727	10,032	29,115	13,927	47.83%
2008 ⁷	24.44%	194,391	12,775	34,734	18,623	53.62%
2009 ⁸	23.66%					

¹ Information prior to 2008 provided by The Segal Company.

² Includes contributions from other sources (if applicable)

³ Actuarially Required Contributions calculated according to parameters of GASB 25 using a 30-year amortization of the negative unfunded actuarial accrued liability.

⁴ Actuarially Required Contributions Rate prior to change in Asset Valuation Method is 13.34%.

⁵ Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 14.46%.

⁶ Actuarially Required Contribution Rate prior to change in Actuarial Assumptions and employee contribution rates is approximately 22.10%.

⁷ Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 23.41%.

⁸ Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 27.22%.

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.

MERCER



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