December 2010

State Employees Retirement Fund

Actuarial Valuation Report as of July 1, 2010

MERCER

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GUY CARPENTER OLIVER WYMAN

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December 2010

Minnesota State Retirement System
State Employees Retirement Fund
St. Paul MN

Dear Board of Directors:

Submitted in this report are the July 1, 2010 actuarial valuation results for the State Employees Retirement Fund. The purposes of this report are to:

- Present Mercer's actuarial estimates of the Plan's liabilities and expenses as required by Minnesota Statutes, Section 356.215 and the Standards for Actuarial Work established by the State of Minnesota Legislative Commission on Pensions and Retirement (LCPR) for the Minnesota State Retirement System (MSRS) to incorporate, as MSRS deems appropriate, in its financial statements; and

- provide the actuarial required contribution rate for the period beginning July 1, 2010.

To the best of our knowledge and belief, the valuation was performed in accordance with the requirements of Minnesota Statutes, Section 356.215, and the requirements of the Standards for Actuarial Work established by the LCPR, including one modification regarding decrement timing. The LCPR approved this modification prior to the preparation of this report in order to ensure consistency and comparability. For more information about the decrement timing methodology, please refer to the *Actuarial Basis* section.

We are available to answer any questions on the material in this report or to provide explanations or further details as appropriate. Moreover, this report contains a Glossary of certain terms referenced in the report, which you may wish to consult before reviewing the report. The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. In addition, Mr. Dickson meets the requirements of "approved actuary" under Minnesota Statutes, Section 356.215, Subdivision 1, Paragraph (c). 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.

Respectfully submitted,

Gary D. Dickson

Gary D. Dickson, FSA, EA, MAAA

Bonita J. Wurst

Bonita J. Wurst, ASA, EA, MAAA

Highlights

Contributions

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

	Actuarial Valuation as of	
Contributions	**July 1, 2010**	**July 1, 2009**
Statutory Contributions – Chapter 352 (% of Payroll)	10.00%	9.50%
Required Contributions – Chapter 356 (% of Payroll)	10.99%	14.85%
Sufficiency / (Deficiency)	(0.99%)	(5.35%)

The contribution deficiency decreased from (5.35%) of payroll to (0.99%) of payroll. The primary reasons for the improved contribution deficiency are the changes in plan provisions and the change in amortization period. A significant contribution deficiency remains. Without further changes or favorable actuarial experience, the funded status will deteriorate in 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 (AVA). The market value of assets (MVA) earned 15.5% for the plan year ending June 30, 2010. The AVA earned 2.1% for the plan year ending June 30, 2010 as compared to the assumed rate of 8.5%. Due to the asset smoothing method used, the AVA used to determine the contributions in this valuation exceeds the MVA by 16%. Absent future investment gains to offset the investment losses being smoothed, future required contributions will increase as past investment losses become recognized. If asset smoothing methods were not used for this valuation, the required contribution rate, based on the market value of assets, would have been 13.90% of pay instead of 10.99% of pay.

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* sections detail the required accounting information for the Plan under GASB Statement No. 25 (as amended by GASB 50).

Changes in amortization period, plan provisions and assumptions are reflected in this report and summarized in the *Actuarial Basis* and *Effects of Changes* sections.

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, 2010	**July 1, 2009**
Contributions *(% of Payroll)*		
Statutory – Chapter 352	10.00%	9.50%
Required – Chapter 356	10.99%	14.85%
Sufficiency / (Deficiency)	(0.99%)	(5.35%)
Funding Ratios *(dollars in thousands)*		
Accrued Benefit Funding Ratio		
– Current assets (AVA)	$ 8,960,391	$ 9,030,401
– Current benefit obligations	9,879,753	9,991,468
– Funding ratio	90.69%	90.38%
Accrued Liability Funding Ratio		
– Current assets (AVA)	$ 8,960,391	$ 9,030,401
– Current assets (MVA)	7,692,531	6,897,118
– Actuarial accrued liability	10,264,071	10,512,760
– Funding ratio (AVA)	87.30%	85.90%
– Funding ratio (MVA)	74.95%	65.61%
Projected Benefit Funding Ratio		
– Current and expected future assets	$ 11,200,516	$ 10,731,186
– Current and expected future benefit obligations	11,633,641	11,902,982
– Funding ratio	96.28%	90.16%
Participant Data		
Active members		
– Number	48,494	48,989
– Projected annual earnings *(000s)*	$ 2,483,519	$ 2,493,948
– Average projected annual earnings	$ 51,213	$ 50,908
– Average age	47.0	46.7
– Average service	12.7	13.6
Service retirements	23,337	22,457
Survivors	3,414	3,230
Disability retirements	1,684	1,656
Deferred retirements	15,388	15,210
Terminated other non-vested	6,537	6,912
Total	**98,854**	**98,454**

Effects of Changes

The following changes in amortization period, plan provisions and actuarial assumptions were recognized as of July 1, 2010:

- The amortization date for the payment of unfunded accrued liability was changed from July 1, 2020 to July 1, 2040.
- Post-retirement benefit increases change from 2.5% to 2.0% beginning January 1, 2011. If the accrued liability funding ratio of the plan reaches 90% (on a Market Value of Assets basis), the benefit increase reverts to 2.5%. The post-retirement investment return changed from 6.0% to 6.5% to reflect the change in post-retirement benefit increases from 2.5% to 2.0%. This change in plan provisions decreased the accrued liability by approximately $439 million.
- The requirement for benefit recipients to receive a full increase in benefits changed from 12 full months receiving as of December 31 to 18 full months and the requirement to receive a partial increase in benefits changed from 0 months receiving as of December 31 to 6 months.
- Vesting was changed from three years to five years for employees hired after June 30, 2010.
- The increase on deferred benefits changes from 3% (5% if 55 or older and hired before July 1, 2006 or 2.5% if hired after June 30, 2006) to 2% after December 31, 2011. This change in plan provisions decreased the accrued liability by approximately $209 million.
- The interest earned on member contributions change from 6.0% to 4.0% effective as of July 1, 2011. This change in plan provisions decreased the accrued liability by approximately $3 million.
- Healthy pre-retirement mortality was changed from 1983 Group Annuity Mortality set back five years for males and set back two years for females to RP 2000 non-annuitant generational mortality, white collar adjustment, set forward three years for males and set back one year for females. Healthy post-retirement mortality was changed from 1983 Group Annuity Mortality set back two years for males and set back one year for females to RP 2000 annuitant generational mortality, white collar adjustment, with no age set backs. This change in actuarial assumptions increased the accrued liability by approximately $98 million.
- Disabled retired mortality was changed from a table based on 1965 Railroad Retirement Board (RRB) rates to RP 2000 disabled retiree mortality with no set back for males and set forward five years for females. This change in actuarial assumptions decreased the accrued liability by approximately $67 million.
- The marital status assumption for females was changed from 85% to 70% for active members. The beneficiary age difference was changed from three years older to two years older for active females. The form of benefit assumption for active male members was changed from 20% electing the 50% J&S form to 15% and from 0% electing the 75% J&S form to 10%. The form of benefit assumption for active female members was changed form 10% electing the 50% J&S form to 15% and from 15% electing the 100% J&S form to 25%. These changes in actuarial assumptions decreased the accrued liability by approximately $4 million.
- Retirement rates were reduced at some ages to more closely reflect actual retirement experience. This change in actuarial assumptions decreased the accrued liability by approximately $50 million.

Effects of Changes *(continued)*

The combined impact of the above changes was to decrease the accrued liability by $674 million and decrease the required contribution by 7.3% of pay, as follows:

	Before Amortization Period, Plan and Assumption Changes	Reflecting Amortization Period Change	Reflecting Amortization Period and Plan Changes	Reflecting Amortization Period, Plan and Assumption Changes
Normal Cost Rate, % of pay	8.3%	8.3%	7.7%	7.8%
Amortization of Unfunded Accrued Liability, % of pay	9.8%	4.6%	3.1%	3.0%
Expenses (% of pay)	0.2%	0.2%	0.2%	0.2%
Total Required Contribution, % of pay	18.3%	13.1%	11.0%	11.0%
Accrued Liability Funding Ratio	81.9%	81.9%	87.1%	87.3%
Projected Benefit Funding Ratio	90.5%	90.5%	96.5%	96.3%
Unfunded Accrued Liability (in billions)	$ 2.0	$ 2.0	$ 1.3	$ 1.3

The prospective change to vesting requirements did not have an impact on the 2010 valuation results.

Refer to the *Actuarial Basis* section of this report for a complete description of these changes.

Alternative Actuarial Assumptions

The assumption changes described above were adopted by the LCPR in July, and do not include any changes in payroll growth or salary scale assumptions. These economic assumptions are stated in Statutes for the 2010 valuations, but are expected to be changed effective July 1, 2011 to the assumptions described as "Alternative Assumptions" in the Actuarial Basis section of this report. Alternative 2010 valuation results reflecting changes to the alternative payroll growth and salary scale assumptions are as follows:

	2010 Valuation Results Based on Final Assumptions and Plan Provisions	Reflecting Alternative Payroll Growth and Salary Scale Assumptions
Normal Cost Rate, % of pay	7.8%	7.2%
Amortization of Unfunded Accrued Liability, % of pay	3.0%	3.0%
Expenses, % of pay	0.2%	0.2%
Total Required Contribution, % of pay	11.0%	10.4%
Accrued Liability Funding Ratio	87.3%	88.4%
Projected Benefit Funding Ratio	96.3%	98.7%
Unfunded Accrued Liability (in billions)	$ 1.3	$ 1.2

Effects of Changes *(continued)*

Valuation of Future Post-Retirement Benefit Increases

A very important assumption affecting the valuation results is the expectation of future post-retirement benefit increases. The plan's funded ratio (on a market value of assets basis and assuming 2.0% benefit increases) is currently 75.0%. If the actuarial funded ratio of the plan reaches 90% (on a market value of assets basis) in the future, post-retirement increases will revert to the 2.5% level.

We performed a projection of liabilities and assets, using the 2010 valuation results as a baseline (including a 2.0% benefit increase assumption) and assuming future experience follows the valuation assumptions. The projection indicates that, without contribution increases, changes in benefits or assumptions, or favorable experience, the funded status of this plan is expected to decline from the current level of 75.0%.

The liabilities in this report are based on the assumption that the post-retirement benefit increase will remain at the reduced level of 2.0% indefinitely. We relied on direction from MSRS, including MSRS' interpretation of applicable Minnesota Statutes, on this issue. If we assumed future post-retirement benefit increases of 2.5% instead of 2.0%, the liability would be $10.7 billion instead of $10.3 billion, resulting in a funded ratio of 71.8% (on a market value basis).

Important Notices

Mercer has prepared this report exclusively for the Board of Directors of the Minnesota State Retirement System (MSRS) and the Legislative Commission on Pensions and Retirement (LCPR); Mercer is not responsible for reliance upon this report by any other party. Subject to this limitation, MSRS may direct that this report be provided to its auditors in connection with audits of the Plan or its sponsoring entities.

The only purposes of this report are to:

- Present Mercer's actuarial estimates of the Plan's liabilities and expenses as required by Minnesota Statutes, Section 356.215 and the Standards for Actuarial Work established by the State of Minnesota LCPR for MSRS to incorporate, as MSRS deems appropriate, in its financial statements; and

- provide the actuarial required contribution rate for the period beginning July 1, 2010.

This report may not be used for any other purpose; Mercer is not responsible for the consequences of any unauthorized use.

Decisions about benefit changes, granting new benefits, investment policy, funding policy, benefit security and/or benefit-related issues should not be made on the basis of this valuation, but only after careful consideration of alternative economic, financial, demographic and societal factors, including financial scenarios that assume future sustained investment losses.

The State Board of Investment (SBI) is solely responsible for selecting the plan's investment policies, asset allocations and individual investments. Mercer's actuaries have not provided any investment advice to the Board of Directors or the SBI.

A valuation report is only a snapshot of a Plan's estimated financial condition at a particular point in time; it does not predict the Plan's future financial condition or its ability to pay benefits in the future and does not provide any guarantee of future financial soundness of the Plan. Over time, a plan's total cost will depend on a number of factors, including the amount of benefits the plan pays, the number of people paid benefits, the period of time over which benefits are paid, plan expenses and the amount earned on any assets invested to pay benefits. These amounts and other variables are uncertain and unknowable at the valuation date.

Because modeling all aspects of a situation is not possible or practical, we may use summary information, estimates, or simplifications of calculations to facilitate the modeling of future events in an efficient and cost-effective manner. We may also exclude factors or data that are immaterial in our judgment. Use of such simplifying techniques does not, in our judgment, affect the reasonableness of valuation results for the plan.

To prepare the valuation report, actuarial assumptions, as described in the *Actuarial Basis* section of this report, are used in a forward looking financial and demographic model to present a single scenario from a wide range of possibilities; the results based on that single scenario are included in the valuation. The future is uncertain and the plan's actual experience will differ from those assumptions; these differences may be significant or material because these results are very sensitive to the assumptions made and, in some cases, to the interaction between the assumptions.

Important Notices

Different assumptions or scenarios within the range of possibilities may also be reasonable and results based on those assumptions would be different. As a result of the uncertainty inherent in a forward looking projection over a very long period of time, no one projection is uniquely “correct” and many alternative projections of the future could also be regarded as reasonable. Two different actuaries could, quite reasonably, arrive at different results based on the same data and different views of the future. A "sensitivity analysis" shows the degree to which results would be different if you substitute alternative assumptions within the range of possibilities for those utilized in this report. We have not been engaged to perform such a sensitivity analysis and thus the results of such an analysis are not included in this report. At MSRS’s request, Mercer is available to perform such a sensitivity analysis.

Actuarial assumptions may also be changed from one valuation to the next because of changes in mandated requirements, plan experience, changes in expectations about the future and other factors. A change in assumptions is not an indication that prior assumptions were unreasonable when made.

Because valuations are a snapshot in time and are based on estimates and assumptions that are not precise and will differ from actual experience, contribution calculations are inherently imprecise. There is no uniquely “correct” level of contributions for the coming plan year.

Valuations do not affect the ultimate cost of the Plan, only the timing of contributions into the Plan. Plan funding occurs over time. Contributions not made this year, for whatever reason, including errors, remain the responsibility of the Plan sponsor and can be made in later years. If the contribution levels over a period of years are lower or higher than necessary, it is normal and expected practice for adjustments to be made to future contribution levels to take account of this with a view to funding the plan over time.

Data, computer coding and mathematical errors are possible in the preparation of a valuation involving complex computer programming and thousands of calculations and data inputs. Errors in a valuation discovered after its preparation may be corrected by amendment to the valuation or in a subsequent year’s valuation.

Actuarial assumptions, including discount rates, mortality tables and others identified in this report, are prescribed by Minnesota Statutes Section 356.215, the LCPR, and the Board of Directors. These parties are responsible for selecting the plan’s funding policy, actuarial valuation methods, asset valuation methods, and assumptions. The policies, methods and assumptions used in this valuation are those that have been so prescribed and are described in the *Actuarial Basis* section of this report. MSRS is solely responsible for communicating to Mercer any changes required thereto.

To prepare this report Mercer has used and relied on financial data and participant data supplied by MSRS and summarized in the *Plan Assets* and *Membership Data* section of this report. MSRS is responsible for ensuring that such participant data provides an accurate description of all persons who are participants under the terms of the plan or otherwise entitled to benefits as of the valuation date that is sufficiently comprehensive and accurate for the purposes of this report. Although Mercer has reviewed the data in accordance with Actuarial Standards of Practice No. 23, Mercer has not verified or audited any of the data or information provided.

Mercer has also used and relied on the summary of plan provisions, including amendments, and interpretations of plan provisions, supplied by MSRS as summarized in the *Actuarial Basis* section of this report and on plan provisions stipulated by statute. We have assumed for purposes of this valuation that copies of any official plan document including all amendments and collective bargaining agreements as well as any interpretations of any such document have been provided to Mercer along with a written summary of any other substantive commitments. The Board of Directors is solely responsible for the validity, accuracy and comprehensiveness of this information. If any data or plan provisions supplied are not accurate and complete, the valuation results may

Important Notices

differ significantly from the results that would be obtained with accurate and complete information; this may require a later revision of this report. Moreover, plan documents may be susceptible to different interpretations, each of which could be reasonable, and that the different interpretations could lead to different valuation results.

MSRS should notify Mercer promptly after receipt of the valuation report if MSRS disagrees with anything contained in the valuation report or is aware of any information that would affect the results of the valuation report that has not been communicated to Mercer or incorporated therein. The valuation report will be deemed final and acceptable to MSRS unless MSRS promptly provides such notice to Mercer.

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.

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. 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, 2010 *(Dollars in Thousands)*

	Market Value	Cost Value
Assets in Trust		
▪ Cash, equivalents, short term securities	$ 165,194	$ 165,194
▪ Fixed income	1,888,987	1,701,974
▪ Equity	5,623,170	5,398,604
▪ Other	5,899	5,899
Total assets in trust	**$ 7,683,250**	**7,271,671**
Assets Receivable	19,043	19,043
Total Assets	**$ 7,702,293**	**$ 7,290,714**
Amounts Payable	(9,762)	(9,762)
Net assets held in trust for pension benefits	**$ 7,692,531**	**$ 7,280,952**

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 for the Plan's Fiscal Year July 1, 2009 to June 30, 2010.

Change in Assets *(dollars in thousands)*		**Market Value**
1. Fund balance at market value at July 1, 2009	**$**	**6,897,118**
2. Contributions		
a. Member		115,180
b. Employer		113,716
c. Other sources		0
d. Total contributions	$	228,896
3. Investment income		
a. Investment income/(loss)	$	1,051,863
b. Investment expenses		(10,990)
c. Total investment income/(loss)	$	1,040,873
4. Other		14,626
5. Total income *(2.d. + 3.c. + 4.)*	**$**	**1,284,395**
6. Benefits Paid		
a. Annuity benefits	$	(473,447)
b. Refunds		(9,733)
c. Total benefits paid	$	(483,180)
7. Expenses		
a. Other	$	(31)
b. Administrative		(5,771)
c. Total expenses	$	(5,802)
8. Total disbursements *(6.c. + 7.c.)*	**$**	**(488,982)**
9. Fund balance at market value at June 30, 2010 *(1. + 5. + 8.)*	**$**	**7,692,531**

Plan Assets

Actuarial Asset Value *(Dollars in Thousands)*

				June 30, 2010
1. Market value of assets available for benefits				$ 7,692,531
2. Determination of average balance				
a. Total assets available at July 1, 2009				6,897,118
b. Total assets available at June 30, 2010				7,692,531
c. Net investment income for fiscal year ending June 30, 2010				1,040,873
d. Average balance *[a. + b. – c.] / 2*				6,774,388
3. Expected return *[8.5% x 2.d.]*				575,823
4. Actual return				1,040,873
5. Current year asset gain/(loss) *[4. – 3.]*				465,050
6. Unrecognized asset returns*				
	Original Amount	**% Not Recognized**		
a. Year ended June 30, 2010	$ 465,050	80%		$ 372,040
b. Year ended June 30, 2009	(2,397,363)	60%		(1,438,417)
c. Year ended June 30, 2008	(747,984)	40%		(299,194)
d. Year ended June 30, 2007	488,554	20%		97,711
e. Total unrecognized return				$ (1,267,860)
7. Actuarial value at June 30, 2010 *(1. – 6.e.)*				**$ 8,960,391**

** Prior to the year ending June 30, 2009, unrecognized asset returns do not include MPRIF gains or losses.*

Membership Data

Distribution of Active Members

	Years of Service as of June 30, 2010										
Age	**<3***	**3 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40+**	**Total**
< 25	1,172	126	21								**1,319**
Avg. Earnings	19,386	29,509	31,844								**20,551**
25 – 29	2,187	1,101	542	15							**3,845**
Avg. Earnings	29,162	37,292	41,494	50,649							**33,312**
30 – 34	1,517	1,064	1,312	385	6						**4,284**
Avg. Earnings	32,171	41,143	44,833	49,406	42,502						**39,841**
35 – 39	1,146	783	1,180	921	168	6					**4,204**
Avg. Earnings	35,297	45,271	47,587	53,800	52,574	45,569					**45,363**
40 – 44	1,084	720	1,154	1,214	698	279	25				**5,174**
Avg. Earnings	34,284	44,295	48,734	54,551	58,734	56,522	54,028				**48,248**
45 – 49	1,119	775	1,215	1,214	934	1,075	633	106			**7,071**
Avg. Earnings	34,774	44,167	49,020	54,842	56,886	59,820	54,554	52,034			**50,455**
50 – 54	965	651	1,178	1,242	964	1,338	1,153	947	102		**8,540**
Avg. Earnings	33,398	45,223	49,112	53,905	56,731	59,239	58,328	55,994	54,948		**52,261**
55 – 59	660	486	998	1,012	881	1,154	980	1,298	675	64	**8,208**
Avg. Earnings	33,935	44,898	50,626	52,659	57,080	58,999	58,447	60,771	58,557	53,842	**54,281**
60 – 64	291	261	545	612	544	692	493	575	477	235	**4,725**
Avg. Earnings	30,211	42,884	48,454	52,944	56,179	57,800	57,751	61,157	63,833	58,838	**54,447**
65 – 69	73	65	135	141	116	122	62	60	59	68	**901**
Avg. Earnings	18,911	35,558	44,705	53,272	55,613	59,271	61,390	61,957	62,762	59,427	**51,263**
70+	27	19	47	29	22	17	15	15	11	21	**223**
Avg. Earnings	9,564	13,553	35,805	43,577	55,701	49,994	50,823	62,417	59,073	58,963	**40,916**
Total	**10,241**	**6,051**	**8,327**	**6,785**	**4,333**	**4,683**	**3,361**	**3,001**	**1,324**	**388**	**48,494**
Avg. Earnings	**30,943**	**42,166**	**47,609**	**53,582**	**56,873**	**58,889**	**57,558**	**59,061**	**60,371**	**58,124**	**47,994**

* *This exhibit does not reflect service earned in other MSRS or Combined Service Annuity benefits. It should not be relied upon as an indicator of non-vested status. Per MSRS, there are 706 members in this category with CSA service that could potentially be vested.*

In each cell, the top number is the count of active participants for the age/service combination and the bottom number is average annual earnings.

Membership Data

Distribution of Service Retirements

	Years Retired as of June 30, 2010							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
<50								**0**
Avg. Benefit								**N/A**
50 – 54	10	18						**28**
Avg. Benefit	22,490	12,710						**16,203**
55 – 59	380	929	28					**1,337**
Avg. Benefit	17,635	14,618	14,898					**15,481**
60 – 64	768	2,263	1,392	30	1			**4,454**
Avg. Benefit	18,016	18,415	15,191	13,912	2,103			**17,305**
65 – 69	405	2,083	2,156	916	5			**5,565**
Avg. Benefit	16,662	16,633	17,517	15,437	29,002			**16,792**
70 – 74	64	348	1,750	1,640	492	4		**4,298**
Avg. Benefit	13,825	13,394	15,369	17,563	19,279	17,116		**16,472**
75 – 79	8	63	248	1,381	1,236	177		**3,113**
Avg. Benefit	12,725	10,845	12,447	16,984	22,102	21,381		**18,769**
80 – 84	8	21	56	219	1,255	716	83	**2,358**
Avg. Benefit	11,764	7,058	13,507	14,279	19,653	20,533	26,751	**19,386**
85 – 89		3	16	37	205	725	456	**1,442**
Avg. Benefit		16,215	19,491	13,862	18,140	17,147	21,038	**18,459**
90+			1	3	13	56	669	**742**
Avg. Benefit			9,081	12,673	21,133	15,025	16,850	**16,760**
Total	**1,643**	**5,728**	**5,647**	**4,226**	**3,207**	**1,678**	**1,208**	**23,337**
Avg. Benefit	**17,402**	**16,702**	**16,006**	**16,681**	**20,458**	**18,968**	**19,111**	**17,383**

In each cell, the top number is the count of retired participants for the age/service combination and the bottom number is the average annual benefit amount.

Membership Data

Distribution of Survivors

	Years Since Death as of June 30, 2010							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Tot**
<45	36	30	32	4	1	1		**104**
Avg. Benefit	7,817	9,224	7,492	5,741	18,365	10,855		**8,174**
45 – 49	5	23	12	5	3			**48**
Avg. Benefit	3,859	11,521	6,143	5,059	2,105			**8,117**
50 – 54	22	39	30	12	5	2		**110**
Avg. Benefit	12,374	12,761	10,011	7,781	3,849	6,684		**10,875**
55 – 59	41	103	84	37	10	3	2	**280**
Avg. Benefit	12,251	12,378	10,592	10,795	7,907	7,253	4,104	**11,341**
60 – 64	32	135	110	45	9	5	1	**337**
Avg. Benefit	12,524	14,862	12,981	13,947	9,993	9,696	5,640	**13,670**
65 – 69	38	128	114	59	34	4	4	**381**
Avg. Benefit	13,393	12,322	12,894	13,967	15,840	10,257	12,345	**13,147**
70 – 74	32	123	130	89	50	11	6	**441**
Avg. Benefit	20,613	17,028	14,975	17,022	14,228	14,325	12,584	**16,236**
75 – 79	39	120	125	81	59	33	10	**467**
Avg. Benefit	20,547	16,634	19,586	17,538	18,028	12,720	15,090	**17,774**
80 – 84	42	132	144	106	72	60	30	**586**
Avg. Benefit	19,279	20,170	18,528	20,691	20,124	16,495	17,708	**19,289**
85 – 89	23	88	99	82	51	22	60	**425**
Avg. Benefit	15,529	16,156	15,546	17,406	16,512	13,439	15,614	**16,046**
90+	6	38	44	47	45	13	42	**235**
Avg. Benefit	27,285	13,833	17,203	21,090	14,775	18,812	15,389	**16,993**
Total	**316**	**959**	**924**	**567**	**339**	**154**	**155**	**3,414**
Avg. Benefit	**15,115**	**15,222**	**14,892**	**16,825**	**16,173**	**14,563**	**15,510**	**15,467**

In each cell, the top number is the count of survivors for the age/years since death combination and the bottom number is the average annual benefit amount.

Membership Data

Distribution of Disability Retirements

	Years Disabled as of June 30, 2010							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
<45	5	14	9	4				**32**
Avg. Benefit	5,400	5,853	4,593	5,816				**5,423**
45 – 49	11	35	25	10	2	1		**84**
Avg. Benefit	11,630	7,663	8,184	7,519	4,226	3,331		**8,187**
50 – 54	24	62	67	29	7	4		**193**
Avg. Benefit	15,040	11,816	10,088	9,419	8,939	4,409		**10,999**
55 – 59	32	140	112	52	18	1		**355**
Avg. Benefit	15,984	15,421	11,567	11,236	9,165	4,659		**13,295**
60 – 64	32	143	177	62	28	5	3	**450**
Avg. Benefit	13,345	15,848	14,407	13,838	12,836	11,366	9,149	**14,544**
65 – 69	1	24	116	78	28	4	4	**255**
Avg. Benefit	7,370	10,802	12,182	13,592	17,311	12,398	12,470	**13,036**
70 – 74		1	31	71	42	14	2	**161**
Avg. Benefit		11,220	12,704	14,566	14,557	10,156	9,685	**13,740**
75 – 79				18	38	12	8	**76**
Avg. Benefit				14,633	13,778	15,440	13,730	**14,238**
80 – 84					11	16	9	**36**
Avg. Benefit					11,644	14,130	12,592	**12,986**
85 – 89						2	25	**27**
Avg. Benefit						7,578	12,622	**12,248**
90+							15	**15**
Avg. Benefit							14,750	**14,750**
Total	**105**	**419**	**537**	**324**	**174**	**59**	**66**	**1,684**
Avg. Benefit	**13,922**	**13,791**	**12,243**	**12,875**	**13,466**	**11,877**	**12,979**	**12,997**

In each cell, the top number is the count of disabled participants for the age/years since disability combination and the bottom number is the average annual benefit amount.

Membership Data

Reconciliation of Members

		Terminated*		Recipients**			
	Actives*	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivor	Total
Members on 7/1/2009	**48,989**	**15,210**	**6,912**	**22,457**	**1,656**	**3,230**	**98,454**
New members	3,134	0	0	0	0	0	**3,134**
Return to active	375	(148)	(115)	0	0	0	**112**
Terminated non-vested	(1,082)	0	1,082	0	0	0	**0**
Service retirements	(1,105)	(476)	0	1,581	0	0	**0**
Terminated deferred	(887)	887	0	0	0	0	**0**
Terminated refund/transfer	(716)	(202)	(1,372)	0	0	0	**(2,290)**
Deaths	(80)	(32)	(2)	(765)	(81)	(133)	**(1,093)**
New beneficiary	0	0	0	0	0	317	**317**
Disabled	(94)	0	0	0	94	0	**0**
Data correction	(40)	149	32	64	15	0	**220**
Net change	(495)	178	(375)	880	28	184	**400**
Members on 6/30/2010	**48,494**	**15,388**	**6,537**	**23,337**	**1,684**	**3,414**	**98,854**

* *Includes members in the General or Military Affairs Plans.*
** *Includes members in the General, Military Affairs, or Unclassified Plans.*

Terminated Member Statistics	Deferred Retirement	Other Non-Vested	Total
Number	15,388	6,537	21,925
Average Age	50.2	37.1	46.3
Average Service	8.6	1.0	6.4
Average annual benefits, with augmentation to Normal Retirement Date and 40% CSA load***	$16,100	N/A	$16,100
Average refund value, with 40% CSA load	$32,574	$2,032	$23,468

*** *Includes estimated benefits for 863 participants who were reported without a benefit amount*

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.

			June 30, 2010
A. Actuarial Value of Assets			$ 8,960,391
B. Expected future assets			
1. Present value of expected future statutory supplemental contributions			$ 870,555
2. Present value of future normal cost contributions			1,369,570
3. Total expected future assets *(1. + 2.)*			$ 2,240,125
C. Total current and expected future assets			$ 11,200,516*
	Non-Vested	Vested	Total
D. Current benefit obligations			
1. Benefit recipients			
a. Service retirements	$ 0	$ 3,931,303	$ 3,931,303
b. Disability	0	194,458	194,458
c. Survivors	0	409,640	409,640
2. Deferred retirements with augmentation	0	1,156,208	1,156,208
3. Former members without vested rights**	13,284	0	13,284
4. Active members	41,243	4,133,617	4,174,860
5. Total Current Benefit Obligations	$ 54,527	$ 9,825,226	$ 9,879,753
E. Expected Future Benefit Obligations			$ 1,753,888
F. Total Current and Expected Future Benefit Obligations			$ 11,633,641
G. Unfunded Current Benefit Obligations *(D.5. − A.)*			$ 919,362
H. Unfunded Current and Future Benefit Obligations *(F. − C.)*			$ 433,125

* *Does not reflect deferred investment losses due to the asset smoothing method. Total expected future assets on a market value basis are $9,932,656,000.*

*** Former members with less than three years of service in this plan that have not collected a refund of member contributions as of the valuation date.*

Development of Costs

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

Baseline Results	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	$ 5,279,481	$ 1,016,194	$ 4,263,287
b. Disability benefits	222,322	76,081	146,241
c. Survivor's benefits	121,014	35,291	85,723
d. Deferred retirements	180,894	121,617	59,277
e. Refunds	98,408	120,387	(21,979)
f. Total	$ 5,902,119	$ 1,369,570	$ 4,532,549
2. Deferred retirements with future augmentation	1,156,208	0	1,156,208
3. Former members without vested rights	13,284	0	13,284
4. Benefit recipients	4,535,401	0	4,535,401
5. Contingent actuarial accrued liability – UNCL Plan	26,629	0	26,629
6. Total	$ 11,633,641	$ 1,369,570	$ 10,264,071
B. Determination of Unfunded Actuarial Accrued Liability (UAAL)			
1. Actuarial accrued liability			$ 10,264,071
2. Current assets (AVA)			8,960,391
3. Unfunded actuarial accrued liability			$ 1,303,680
C. Determination of Supplemental Contribution Rate*			
1. Present value of future payrolls through the amortization date of July 1, 2040			$ 43,578,379
2. Supplemental contribution rate *(B.3. / C.1.)*			2.99%**

* *The amortization of the unfunded actuarial accrued liability (UAAL) using the current amortization method results in initial payments less than the "interest only" payment on the UAAL. Payments less than the interest only amount will result in the UAAL increasing for an initial period of time.*

** *The amortization factor as of July 1, 2010 is 13.5911.*

Development of Costs

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

			Year Ending June 30, 2010
A.	Baseline unfunded actuarial accrued liability at beginning of year	$	1,482,359
B.	Changes due to interest requirements and current rate of funding		
	1. Normal cost and actual administrative expenses	$	201,862
	2. Contributions		(228,896)
	3. Interest on A., B.1. and B.2.		124,852
	4. Total *(B.1. + B.2. + B.3.)*	$	97,818
C.	Expected baseline unfunded actuarial accrued liability at end of year *(A. + B.4.)*	$	1,580,177
D.	Increase (decrease) due to actuarial losses (gains) because of experience deviations from expected		
	1. Salary increases	$	(158,877)
	2. Investment return		572,503
	3. Mortality of benefit recipients		523
	4. Other items		(16,607)
	5. Total	$	397,542
E.	Baseline unfunded actuarial accrued liability at end of year before plan amendments and changes in actuarial assumptions *(C. + D.5.)*	$	1,977,719
F.	Change in baseline unfunded actuarial accrued liability due to changes in plan provisions	$	(650,404)
G.	Change in baseline unfunded actuarial accrued liability due to changes in actuarial assumptions	$	(23,635)
H.	Change in baseline unfunded actuarial accrued liability due to changes in actuarial asset method	$	0
I.	Baseline unfunded actuarial accrued liability at end of year *(E. + F. + G. + H.)*	$	1,303,680

Development of Costs

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

The annual required contribution (ARC) is the sum of normal cost, a supplemental contribution to amortize the UAAL, and an allowance for expenses.

	July 1, 2010		
Baseline Results	**Percent of Payroll**		**Dollar Amount**
A. Statutory contributions – Chapter 352			
1. Employee contributions	5.00%	$	124,176
2. Employer contributions	5.00%		124,176
3. Total	10.00%	$	248,352
B. Required contributions – Chapter 356			
1. Normal cost			
a. Retirement benefits	5.91%	$	146,695
b. Disability benefits	0.41%		10,138
c. Survivors	0.20%		5,070
d. Deferred retirement benefits	0.68%		16,944
e. Refunds	0.57%		14,180
f. Total	7.77%	$	193,027
2. Supplemental contribution amortization by July 1, 2040 of Unfunded Actuarial Accrued Liability	2.99%		74,200
3. Allowance for expenses	0.23%		5,712
4. Total	10.99%	$	272,939
C. Contribution Sufficiency/(Deficiency) *(A.3. – B.4.)*	(0.99%)	$	(24,587)

Note: Projected annual payroll for fiscal year beginning on the valuation date: $2,483,519.

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.

	Year Ending June 30, 2010
A. Projected annual earnings	$ 118,433
B. Total normal cost	
1. Dollar amount	$ 11,244
2. Percent of payroll	9.49%
C. Normal cost of State Employees Retirement Fund (percent of payroll)	7.77%
D. Difference in normal cost *(B. – C.)*	1.72%

Active Military Affairs Member Statistics	**Active Members**
Number	3
Average Age, in years	45.8
Average Service, in years	11.9

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.

This group is closed to new entrants effective June 1, 2008.

		Year Ending June 30, 2010
A. Projected annual earnings	$	343,905
B. Total normal cost		
1. Dollar amount	$	33,792
2. Percent of payroll		9.83%
C. Normal cost of State Employees Retirement Fund (percent of payroll)		7.77%
D. Difference in normal cost (B. – C.)		2.06%

Active Pilots Member Statistics	Active Members
Number	4
Average Age, in years	64.5
Average Service, in years	21.7

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, members 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.

		Year Ending June 30, 2010
A.	Projected annual earnings	$ 769,750
B.	Total normal cost	
	1. Dollar amount	$ 95,637
	2. Percent of payroll	12.42%
C.	Normal cost of State Employees Retirement Fund (percent of payroll)	7.77%
D.	Difference in normal cost (B. – C.)	4.65%

Fire Marshals Member Statistics	Active Members
Number	12
Average Age, in years	51.2
Average Service, in years	14.0

Development of Costs

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

Section 352D.02 of Chapter 352D of Minnesota Statutes provides that members credited with employee shares in the Unclassified Plan may elect to terminate participation in the Unclassified Plan and be covered by the State Employees Retirement Fund (general plan) prior to termination of covered employment assuming that the member has acquired at least 10 years of allowable state service. Unclassified Plan members contribute 5% of payroll and employees contribute 6% of payroll.

To recognize the effect of the option to elect coverage under the general plan, we have assumed that all eligible Unclassified Plan members will elect coverage under the general 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.

The formula used to determine contingent liability was changed in 2010 as directed by MSRS.

			Year Ending June 30, 2010
A.	Number of active members		1,430
B.	Account balances for active members	$	153,549
C.	Accrued liability for active members	$	180,178
D.	Number of inactive members		1,844
E.	Account balances for inactive members	$	98,762
F.	Net assets held in trust for Unclassified Plan members	$	253,388
G.	Contingent liability *(C. – B.)*	$	26,629
H.	Projected annual earnings for active members	$	105,161
I.	Normal cost		
	1. Dollar amount	$	12,118
	2. Percent of payroll		11.52%
J.	Normal cost of State Employee Retirement Fund (percent of payroll)		7.77%
K.	Difference in normal cost *(I. – J.)*		3.75%

Unclassified Member Statistics	Active Members
Number	1,430
Average Age, in years	48.1
Average Service, in years	11.3
Average Unclassified Account Balance	$107,377

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 member's 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 date of retirement termination, disability or death. For valuation purposes, entry age for each member is determined as the age at valuation minus years of service as of the valuation date.

At any given date, a liability is calculated equal to the contributions which would have been accumulated if this method of funding had always been used, the current plan provisions had always been in place, and all assumptions had been precisely accurate. The difference between this liability and the assets (if any) which are held in the fund is the unfunded liability. The unfunded liability is typically funded over a chosen period in accordance with the amortization schedule.

A detailed description of the calculation follows:

The normal cost for each active member 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 future normal costs is the total of the discounted values of all active members' normal cost, assuming these to be paid in each case from the valuation date until retirement (termination, disability or death) date. The discount rate assumptions used in this calculation are 8.5% pre-retirement and 6.5% post-retirement, as described in the *Summary of Actuarial Assumptions.*

- The present value of projected benefits is calculated as the value of all benefit payments expected to be paid to the Plan's current members, 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 costs.

- 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.

Decrement Timing

All decrements are assumed to occur on the anniversary of the valuation date, beginning on the valuation date. Decrement timing is a fundamental part of the computer programming underlying actuarial calculations. Mercer's valuation systems use beginning of year decrements, a generally accepted actuarial practice. The LCPR approved this modification to the Standards for Actuarial Work prior to the preparation of this report in order to ensure consistency and comparability.

Actuarial Basis

Asset Valuation Method

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 market asset value plus the scheduled recognition of investment gains or (losses) during the current and the preceding four fiscal years.

The Minnesota Post Retirement Investment Fund (MPRIF) was dissolved on June 30, 2009. For the purpose of determining the actuarial value of assets, the MPRIF asset loss for the fiscal year ending June 30, 2009 is recognized incrementally over five years at 20% per year, similar to the smoothing described above. Prior to June 30, 2009, MPRIF asset gains and losses were not smoothed.

Payment on the Unfunded Actuarial Accrued Liability

A level percentage of payroll each year to the statutory amortization date of July 1, 2040 (July 1, 2020 last year) assuming payroll increases of 4.50% per annum. If there is a negative Unfunded Actuarial Accrued Liability, the surplus amount shall be amortized over 30 years as a level percentage of payroll.

Alternate actuarial results are prepared assuming payroll increases of 3.75% per annum.

Funding Objective

The fundamental financing objective of the fund is to establish contribution rates which, when expressed as a percentage of active member payroll, will remain approximately level from generation to generation and meet the required deadline for full funding.

Benefits included or excluded

To the best of our knowledge, all material benefits have been included in the liability.

IRC Section 415(b): The limitations of Internal Revenue Code Section 415(b) have been incorporated into our calculations. Annual benefits may not exceed the limits in IRC Section 415. This limit is indexed annually. For 2010, the limit is $195,000.

IRC Section 401(a)17: The limitations of Internal Revenue Code Section 401(a)(17) have been incorporated into our calculations. Compensation for any 12-month period used to determine accrued benefits may not exceed the limits in IRC Section 401(a)(17) for the calendar year in which the 12-month period begins. This limit is indexed annually. For 2010, the limit is $245,000.

Actuarial Basis

Summary of Actuarial Assumptions

The following assumptions were used in valuing the liabilities and benefits under the plan. All assumptions are prescribed by Statutes, the LCPR, or the Board of Trustees.

Investment return:	6.50% compounded annually post-retirement. 8.50% compounded annually pre-retirement.
Benefit increases after retirement	The post-retirement investment return changed from 6.0% to 6.5% to reflect the change in post-retirement benefit increases from 2.5% to 2.0%.
Salary increases	Reported salary for prior fiscal year, with new hires annualized, increased to current fiscal year and annually for each future year according to the ultimate rates in the rate table. During a 5-year select period, 0.6% x (5 – T), where T is completed years of service, is added to the ultimate rate.
Mortality	
Healthy Pre-retirement	RP 2000 non-annuitant generational mortality, white collar adjustment, set forward three years for males and set back one year for females.
Healthy Post-retirement	RP 2000 annuitant generational mortality, white collar adjustment, with no setbacks for males or females.
Disabled	RP 2000 disabled mortality, with no setback for males and a five year set forward for females.
Retirement	Members retiring from active status are assumed to retire according to the age related rates as shown in rate table. Members who have attained the highest assumed retirement age will retire in one year.
Withdrawal	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:
Disability	Age-related rates based on actual experience; see table of sample rates.
Allowance for Combined Service Annuity	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 members having eligibility for a Combined Service Annuity.
Administrative expenses	Prior year administrative expenses expressed as percentage of prior year payroll.
Return of contributions	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.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 65.
Percentage married	85% of active male members are assumed to be married and 70% of active female members are assumed to be married. Actual marital status is provided for members in payment status.
Age of spouse	Male members are assumed to have a beneficiary three years younger and female members are assumed to have a beneficiary two years older.

Withdrawal select rates:

	First Year	Second Year	Third Year
Male	0.45	0.14	0.09
Female	0.48	0.15	0.10

Actuarial Basis

Summary of Actuarial Assumptions *(continued)*

Form of payment	Married members retiring from active status are assumed to elect form of annuity as follows: Males: 25% elect Straight Life 15% elect 50% J&S option 10% elect 75% J&S option 50% elect 100% J&S option Females: 60% elect Straight Life 15% elect 50% J&S option 0% elect 75% J&S option 25% elect 100% J&S option Members receiving deferred annuities (including current terminated deferred members) are assumed to elect a life annuity.
Changes in actuarial assumptions	Healthy pre-retirement mortality was changed from 1983 Group Annuity Mortality set back five years for males and set back two years for females to RP 2000 non-annuitant generational mortality, white collar adjustment, set forward three years for males and set back one year for females. Healthy post-retirement mortality was changed from 1983 Group Annuity Mortality set back two years for males and set back one year for females to RP 2000 annuitant generational mortality, white collar adjustment, with no age set backs. Disabled retired mortality was changed to RP 2000 disabled retiree mortality with no set back for males and set forward five years for females. The previous table was based on 1965 Railroad Retirement Board (RRB) rates through age 54; graded rates for ages 55 to 65, and for ages 65 and later, the healthy postretirement mortality table. The marital status assumption for females was changed from 85% to 70% for active members. The beneficiary age difference was changed from three years older to two years older for active females. The form of benefit assumption for active male members was changed from 30% electing a straight life annuity to 25%, from 20% electing the 50% J&S form to 15% and from 0% electing the 75% J&S form to 10%. The form of benefit assumption for active female members was changed from 75% electing a straight life annuity to 60%, from 10% electing the 50% J&S form to 15% and from 15% electing the 100% J&S form to 25%. The post-retirement investment return changed from 6.0% to 6.5% to reflect the change in post-retirement benefit increases from 2.5% to 2.0%. Retirement rates were reduced at some ages to more closely reflect actual retirement experience.

Actuarial Basis

Summary of Actuarial Assumptions *(continued)*

Summary of Rates

	Mortality Rates (%)					
	Healthy Pre-Retirement *		Healthy Post-Retirement**		Disabled	
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
20	0.0255%	0.0176%	0.0226%	0.0175%	2.2571%	0.7450%
25	0.0297%	0.0186%	0.0270%	0.0193%	2.2571%	0.7450%
30	0.0457%	0.0236%	0.0336%	0.0257%	2.2571%	0.7450%
35	0.0722%	0.0393%	0.0562%	0.0418%	2.2571%	0.7450%
40	0.1066%	0.0515%	0.0821%	0.0554%	2.2571%	0.7450%
45	0.1456%	0.0793%	0.1178%	0.0865%	2.2571%	1.1535%
50	0.1960%	0.1220%	0.4989%	0.2062%	2.8975%	1.6544%
55	0.3017%	0.1977%	0.4484%	0.3219%	3.5442%	2.1839%
60	0.4896%	0.3248%	0.5622%	0.5343%	4.2042%	2.8026%
65	0.7404%	0.5179%	1.0104%	0.8665%	5.0174%	3.7635%
70	2.2964%	0.7785%	1.6571%	1.4443%	6.2583%	5.2230%
75	4.2084%	2.1643%	2.9211%	2.3732%	8.2067%	7.2312%

* *Rates shown are RP 2000 non-annuitant mortality, projected to 2010, white collar adjustment, set forward three years for males and set back one year for females.*

** *Rates shown are RP 2000 annuitant mortality, projected to 2010, white collar adjustment, with no age adjustments.*

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

Actuarial Basis

Summary of Actuarial Assumptions *(continued)*

Summary of Rates

	Retirement	
Age	**Rule of 90 Eligible**	**All Others**
55	20%	5%
56	15	5
57	15	5
58	15	5
59	20	6
60	20	7
61	22	12
62	40	22
63	30	16
64	30	18
65	40	40
66	30	30
67	25	25
68	25	25
69	25	25
70	30	30
71+ .	100	100

Actuarial Basis

Summary of Rates

Salary Scale

Baseline Assumption		Alternative Assumption	
Age	**Salary Increase**	**Service**	**Salary Increase**
20	5.75%	1	10.75%
25	5.75	2	8.35
30	5.75	3	7.15
35	5.75	4	6.45
40	5.75	5	5.95
45	5.75	6	5.55
50	5.45	7	5.25
55	4.95	8	4.95
60	4.45	9	4.75
65	4.25	10	4.65
70	4.25	11	4.45
		12	4.35
		13	4.25
		14	4.05
		15	3.95
		16	3.85
		17+	3.75

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.

Plan year	July 1 through June 30
Eligibility	State employees, non-academic staff of the University of Minnesota and employees of certain Metro level government units, unless excluded by law.
Contributions	Shown as a percent of salary: Employee: 5.00% Employer: 5.00% Employee contributions are "picked up" according to the provisions of Internal Revenue Code 414(h).
Allowable service	Service during which member contributions were made. May also include certain leaves of absence, military service and periods while temporary Worker's Compensation is paid. Excludes lump sum vacation pay at termination.
Average Salary	Average of the five highest years of Salary. Average Salary is based on all Allowable Service if less than five years.
Salary	Includes wages, allowances and fees. Excludes lump sum payments at separation, employer contributions to deferred compensation and tax-sheltered annuity plans and benevolent vacation and sick leave donation programs.
Retirement	
Normal retirement benefit	
Age/Service requirements	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 (five years if hired after June 30, 2010). (b.) Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.
Amount	1.70% of Average Salary for each year of Allowable Service

Actuarial Basis

Summary of Plan Provisions *(continued)*

Retirement *(continued)*

Early retirement

Age/Service requirements

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 (five years if hired after June 30, 2010).

Amount

First hired before July 1, 1989:

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%, 75%, or 100% Joint and Survivor with bounce back feature without additional reduction

15-year Certain and Life thereafter

Benefit increases

Benefit recipients receive future annual 2.0% benefit increases. When the funding ratio reaches 90% (on a Market Value of Assets basis), the benefit increase will revert to 2.5%. A benefit recipient who has been receiving a benefit for at least 18 full months as of December 31 will receive a full increase. Members receiving benefits for at least six full months but less than 18 full months will receive a pro rata increase.

Prior to 2002, members who retired under the laws in effect before July 1, 1973 received an additional lump sum payment each year. In 1989, this lump sum payment was the greater of $25 times each full year of Allowable Service or $400 per full year of service less any Social Security benefits received or annuity from a Minnesota public employee pension plan. In each following year, the lump sum payment was increased by the same percentage increase that was applied to regular annuities paid from the MPRIF. Effective January 1, 2002, the annual lump sum payment was divided by 12 and paid as a monthly life annuity in the annuity form elected.

Actuarial Basis

Summary of Plan Provisions *(continued)*

Disability	
<u>*Disability Benefit*</u>	
Age/Service requirement	Total and permanent disability before normal retirement age with three years of Allowable Service (five years if hired after June 30, 2010).
Amount	Normal Retirement benefit based on Allowable Service and Average Salary at disability without reduction for commencement before normal retirement age. 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.
<u>*Retirement after Disability*</u>	
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.
<u>*Form of Payment*</u>	Same as for retirement.
<u>*Benefit Increases*</u>	Same as for retirement.

Actuarial Basis

Summary of Plan Provisions *(continued)*

Death	
<u>*Surviving spouse optional benefit*</u>	
Age/service requirement	Member or former member who dies before retirement or disability benefits commence with three years of Allowable Service (five years if hired after June 30, 2010). If a former member dies before age 55 and has less than 30 years of Allowable Service, benefits commence when the former member would have been age 55. If an active member dies, benefits may commence immediately, regardless of age.
Amount	Surviving spouse receives the 100% joint and survivor 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 dies prior to July 1, 1997 and the beneficiary was not eligible to commence a 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%.
Benefit increases	Same as for retirement.
<u>*Surviving dependent children's benefit*</u>	
Age/service requirement	If no surviving spouse, all dependent children (biological or adopted) below age 20 who are dependent for more than half of their support on deceased member.
Amount	Actuarially equivalent to surviving spouse 100% joint and survivor annuity payable to the later of age 20 or five years. The amount is proportionally divided among surviving children.
Benefit increases	Same as for retirement.
<u>*Refund of contributions*</u>	
Age/service requirement	Active member dies and survivor benefits are not payable or a former member dies before annuity begins or former member who is not entitled to an annuity dies.
Amount	Member's contributions with 5.00% interest through June 30, 2011 compounded annually if death occurred before May 16, 1989 and 6.00% interest through June 30, 2011 compounded annually if death occurred on or after May 16, 1989. Beginning July 1, 2011, a member's contributions will increase at 4.00% interest compounded annually.
Age/service requirement	Retired or disabled annuitant who did not select an optional annuity dies, or the remaining recipient of an option dies.
Amount	The excess of the member's contributions over all benefits paid.

Actuarial Basis

Summary of Plan Provisions *(continued)*

Unclassified Plan Provision	Members credited with employee shares in the Unclassified Plan may elect to terminate participation in the Unclassified Plan and be covered by the State Employees Retirement Fund prior to termination of covered employment assuming that the member has acquired at least 10 years of allowable state service.
Termination	
<u>*Refund of contributions*</u>	
Age/service requirement	Termination of state service.
Amount	Member's contributions with 5.00% interest through June 30, 2011 compounded annually if termination occurred before May 16, 1989 and 6.00% interest through June 30, 2011 if termination occurred on or after May 16, 1989. Beginning July 1, 2011 a member's contributions will increase at 4.00% interest compounded annually. If a member is vested, a deferred annuity may be elected in lieu of a refund.
<u>*Deferred benefit*</u>	
Age/service requirement	Three years of Allowable Service if hired prior to June 30, 2010, five years of Allowable Service if hired after June 30, 2010.
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 or January 1, 2012, whichever is earlier; and (d.) 5.00% thereafter until the annuity begins (2.50% if hired after June 30, 2006), but before January 1, 2012. Amount is payable as a normal or early retirement; (e.) 2.00% from January 1, 2012 thereafter. Amount is payable at 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: Post-retirement benefit increases change from 2.5% to 2.0% beginning January 1, 2011. When the funded status of the plan reaches 90% (on a Market Value of Assets basis), the benefit increase reverts to 2.5%. The requirement for benefit recipients to receive a full increase in benefits changed from 12 full months receiving as of December 31 to 18 full months and the requirement to receive a partial increase in benefits changed from 0 months receiving as of December 31 to 6 months. Vesting was changed from three years to five years for employees hired after June 30, 2010. The increase on deferred benefits changes to 2% after December 31, 2011. The interest earned on member contributions changes from 6.0% to 4.0% effective as of July 1, 2011.

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[1] *(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%
07/01/2009	9,030,401	10,512,760	1,482,359	85.90%	2,329,499	63.63%
07/01/2010	8,960,391	10,264,071	1,303,680	87.30%	2,327,398	56.01%

[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 Entities[1]
(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	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[3]	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[4]	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[5]	10.11%	2,095,310	89,447	122,389	86,492	70.67%
2008[6]	11.76%[7]	2,256,528	99,280	166,088	96,746	58.25%
2009[8]	12.39%	2,329,499	108,866	179,759	107,211	59.64%
2010[9]	14.85%	2,327,398	115,180	230,439	113,716	49.35%
2011[10]	10.99%	N/A	N/A	N/A	N/A	N/A

[1] *Information prior to 2008 provided by The Segal Company.*
[2] *Includes contributions from other sources (if applicable).*
[3] *Actuarially Required Contribution Rate prior to change in Actuarial Assumptions and Asset Valuation Method is 5.72%.*
[4] *Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 7.22%.*
[5] *Actuarially Required Contribution Rate prior to change in employee contribution rates is approximately 10.06%.*
[6] *Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 10.61%.*
[7] *Actuarially Required Contribution Rate provided by The Segal Company.*
[8] *Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 13.77%.*
[9] *Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 15.88%*
[10] *Actuarially Required Contribution Rate prior to change in Amortization Period, Actuarial Assumptions and Plan Provisions is 18.33%..*

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.

EA. Enrolled Actuary.

FSA. Fellow of the Society of Actuaries.

MAAA. Member of the American Academy 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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