

December 2008

# **Teachers Retirement Association Fund**

Actuarial Valuation Report as of July 1, 2008

## **MERCER**



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## Highlights

This report has been prepared by Mercer for the Teachers Retirement Association of Minnesota to:

- Present the results of a valuation of the Teachers Retirement Association 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 354 (% of Payroll)	11.75%	11.79%
Required Contributions – Chapter 356 (% of Payroll)	15.08%	13.44%
Sufficiency / (Deficiency)	(3.33%)	(1.65%)

The deficiency shown above means that if all actuarial assumptions turn out to be correct in total, the Fund needs to receive 3.33% of pay more in future years than it is currently scheduled to receive. Last year, the deficiency was only half as much. The primary causes of the deficiency are:

- The low returns on assets (see below) for the year just ended, and
- The recognition of the Post Fund deficit in the plan’s financial status

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

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

The “Plan Assets” section provides detail on the plan assets used for the valuation including a development of the actuarial value of assets. The actuarial value of assets earned (4.8%) for the plan year ending June 30, 2008 as compared to the assumed rate of 8.50%. Only 20% of the non-MPRIF asset loss is recognized in the actuarial value of assets. The remainder will be recognized over the next four years. The actuarial value of assets earned 1.8% for the plan year ending June 30, 2008 as compared to the assumed rate of 8.50%.

The integration of the Minneapolis Teacher’s Retirement Fund into this Fund caused this Fund issues in terms of reconciling member demographic data. The Fund believes that no material issues remain, but the results of this valuation may be mildly inconsistent with the prior valuation as a result of the data corrections.

\* Provided by The Segal Company.

## Principal Valuation Results

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

	Actuarial Valuation as of	
	July 1, 2008	July 1, 2007*
<b>Contributions (% of Payroll)</b>		
Statutory – Chapter 354	11.75%	11.79%
Required – Chapter 356	15.08%	13.44%
Sufficiency / (Deficiency)	(3.33%)	(1.65%)
<b>Funding Ratios (dollars in thousands)</b>		
Accrued Benefit Funding Ratio		
– Current assets (AVA)	\$ 18,226,985	\$ 18,794,389
– Current benefit obligations	21,318,311	20,646,891
– Funding ratio	85.50%	91.03%
Accrued Liability Funding Ratio		
– Current assets (AVA)	\$ 18,226,985	\$ 18,794,389
– Actuarial accrued liability	22,230,841	21,470,314
– Funding ratio	81.99%	87.54%
Projected Benefit Funding Ratio		
– Current and expected future assets	\$ 22,654,296	\$ 23,435,933
– Current and expected future benefit obligations	24,993,892	24,602,816
– Funding ratio	90.64%	95.26%
<b>Participant Data</b>		
Active members		
– Number	76,515	77,694
– Projected annual earnings (000s)	3,846,190	3,814,374
– Average annual earnings (projected)	50,267	49,095
– Average age	43.4	43.3
– Average service	11.9	11.7
Service retirements	43,041	42,679
Survivors	3,299	3,223
Disability retirements	641	636
Deferred retirements	12,168	12,636
Terminated other non-vested	22,115	22,914
<b>Total</b>	<b>157,779</b>	<b>159,782</b>

\* Provided by The Segal Company

## Effects of Changes

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

- 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%.
- Retirement rates were increased at ages 56 and 57 for Rule of 90 retirements, and reduced at ages 55 to 59, 61 and 65 for all other retirements.

These assumption changes had the following impact on the valuation results:

- A \$103 million decrease in actuarial accrued liability.
- A decrease in the required contribution of 0.28% of payroll.

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

## Certification

We have prepared an actuarial valuation of the Teachers Retirement Association 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 Teachers Retirement Association of Minnesota 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. Evaluating the effect of changes in assumptions is beyond the scope of this assignment.

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

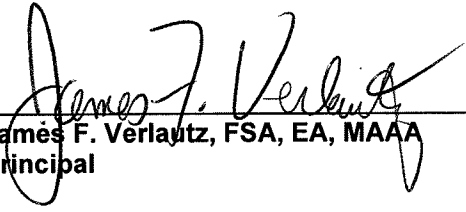
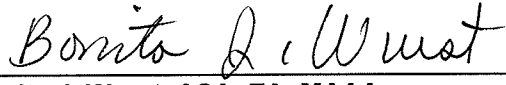
All costs, liabilities and other factors for the Fund were determined in accordance with generally accepted actuarial principles and procedures, in accordance with the provisions of current federal and state statutes and regulations issued thereunder. The economic assumptions are set in Minnesota Statutes,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

 James F. Verlautz, FSA, EA, MAAA Principal	<u>12/9/08</u> Date
 Bonita J. Wurst, ASA, EA, MAAA Principal	<u>12/9/2008</u> Date
Mercer 333 South 7th Street, Suite 1600 Minneapolis, MN 55402-2427 612 642 8600	

## Supplemental Information

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

- **Plan assets** presents information about the plan's assets as reported by the Teachers Retirement Association of Minnesota 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)*

	<b>Market Value</b>
<b>Assets in Trust</b>	
▪ Cash, equivalents, short term securities	\$ 45,283
▪ Fixed income	1,757,336
▪ Equity	5,713,490
▪ Equity in MPRIF	10,635,347
▪ Other	1,860,254
<b>Total assets in trust</b>	<b>\$ 20,011,710</b>
Assets Receivable	17,588
<b>Total Assets</b>	<b>\$ 20,029,298</b>
Amounts Payable	(1,868,885)
Due to MPRIF for Mortality Losses	(53,447)
<b>Net Assets</b>	<b>\$ 18,106,966</b>
<b>Net assets held in trust for pension benefits</b>	
▪ MPRIF reserves	\$ 10,635,347
▪ Member reserves	1,883,372
▪ Other non-MPRIF reserves	5,588,247
<b>Total assets available for benefits</b>	<b>\$ 18,106,966</b>

## Plan Assets

### Reconciliation of Plan Assets

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

Change in Assets <i>(dollars in thousands)</i>	Non-MPRIF Assets	MPRIF Reserve	Market Value
<b>1. Fund balance at market value at July 1, 2007</b>	<b>\$ 8,299,347</b>	<b>\$ 11,639,535</b>	<b>\$ 19,938,882</b>
2. Contributions			
a. Member	209,592	0	209,592
b. Employer	209,717	0	209,717
c. Direct aid (state/city/county)	21,845	0	21,845
d. Earnings Limitation Savings Account (ELSA)	3,554	0	3,554
e. Total contributions	<u>\$ 444,708</u>	<u>\$ 0</u>	<u>\$ 444,708</u>
3. Investment income			
a. Investment income	\$ (367,977)	\$ (525,700)	\$ (893,677)
b. Investment expenses	(13,423)	(18,945)	(32,368)
c. Net subtotal	<u>\$ (381,400)</u>	<u>\$ (544,645)</u>	<u>\$ (926,045)</u>
4. Other	3,976	-	3,976
<b>5. Total income (2.d. + 3.c. + 4.)</b>	<b>\$ 67,284</b>	<b>\$ (544,645)</b>	<b>\$ (477,361)</b>
6. Benefits Paid			
a. Annuity benefits	\$ (13,156)	\$ (1,317,681)	\$ (1,330,837)
b. Refunds	(11,770)	0	(11,770)
c. Total benefits paid	<u>\$ (24,926)</u>	<u>\$ (1,317,681)</u>	<u>\$ (1,342,607)</u>
7. Expenses			
a. Interest paid to Post Fund	\$ (1,687)	\$ 0	\$ (1,687)
b. Administrative	(10,261)	0	(10,261)
c. Total	<u>\$ (11,948)</u>	<u>\$ 0</u>	<u>\$ (11,948)</u>
<b>8. Total disbursements (6.c. + 7.c.)</b>	<b>\$ (36,874)</b>	<b>\$ (1,317,681)</b>	<b>\$ (1,354,555)</b>
9. Other changes in reserves			
a. Annuities awarded	\$ (804,691)	\$ 804,691	\$ 0
b. Mortality gain (loss)	(53,447)	53,447	0
c. Change in assumptions	0	0	0
d. Total other changes	<u>\$ (858,138)</u>	<u>\$ 858,138</u>	<u>\$ 0</u>
<b>10. Fund balance at market value at July 1, 2008</b> <i>(1. + 5. + 8. + 9.d.)</i>	<b>\$ 7,471,619</b>	<b>\$ 10,635,347</b>	<b>\$ 18,106,966</b>

## Plan Assets

### Actuarial Asset Value (Dollars in Thousands)

	<b>June 30, 2008</b>		
<b>1. Market value of assets available for benefits</b>			<b>\$ 18,106,966</b>
2. Determination of average non-MPRIF balance			
a. Non-MPRIF assets available at July 1, 2007			8,299,347
b. Non-MPRIF assets available at June 30, 2008 (before MPRIF mortality adjustment)			7,525,066
c. Net investment income for fiscal year ending June 30, 2008			(377,424)
d. Average balance $[a. + b. - c.] / 2$			8,100,919
3. Expected non-MPRIF return $[8.5% * 2.d.]$			688,578
4. Actual non-MPRIF return			(377,424)
5. Current year unrecognized asset return			(1,066,002)
6. Unrecognized asset recognized asset returns			
	<b>Original Amount</b>	<b>% Not Recognized</b>	
a. Year ended June 30, 2008	\$ (1,066,002)	80%	\$ (852,802)
b. Year ended June 30, 2007	725,920	60%	435,552
c. Year ended June 30, 2006	653,165	40%	261,266
d. Year ended June 30, 2005	179,823	20%	35,965
e. Total unrecognized return			\$ (120,019)
<b>7. Actuarial value at June 30, 2008 (1. - 6.e.)</b>			<b>\$ 18,226,985</b>

## Membership Data

### Distribution of Active Participants\*

Age	Years of Service as of June 30, 2008									Total
	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 +	
0 - 19	3									3
Avg. Earnings	194									194
20 - 24	2,389									2,389
Avg. Earnings	21,109									21,109
25 - 29	7,706	1,746	1							9,450
Avg. Earnings	30,831	43,965	32,773							33,254
30 - 34	3,212	5,352	1,242							9,806
Avg. Earnings	29,537	46,163	55,452							41,894
35 - 39	2,282	2,760	4,375	900						10,317
Avg. Earnings	25,540	46,032	56,445	63,413						47,431
40 - 44	1,948	1,678	2,333	2,919	597					9,475
Avg. Earnings	22,826	45,561	56,108	63,195	66,602					50,242
45 - 49	1,829	1,584	1,514	1,893	2,327	501				9,648
Avg. Earnings	22,078	45,487	54,815	62,204	65,751	66,398				51,766
50 - 54	1,451	1,193	1,484	1,522	1,543	2,223	988			10,404
Avg. Earnings	19,359	43,917	54,466	60,788	65,523	69,891	68,943			54,954
55 - 59	1,130	932	1,133	1,418	1,358	1,497	2,452	501		10,421
Avg. Earnings	18,694	42,055	53,023	60,187	66,350	68,636	69,841	70,307		58,062
60 - 64	639	353	423	523	554	484	299	348	40	3,663
Avg. Earnings	12,674	36,942	50,103	58,631	66,513	68,272	75,064	76,125	73,199	53,167
65 - 69	277	85	67	60	63	48	36	38	22	696
Avg. Earnings	7,275	31,137	48,836	58,542	73,164	75,915	82,066	87,523	77,294	39,770
70 - 74	92	15	10	5	2	5	6	5	5	145
Avg. Earnings	4,265	21,821	43,857	39,686	48,988	71,358	75,459	109,821	66,821	21,706
75+	65	17	8	3	1	1		1	2	98
Avg. Earnings	12,504	41,034	60,524	52,544	36,950	36,374		104,530	95,806	25,731
<b>Total</b>	<b>23,023</b>	<b>15,712</b>	<b>12,590</b>	<b>9,243</b>	<b>6,445</b>	<b>4,759</b>	<b>3,781</b>	<b>893</b>	<b>69</b>	<b>76,515</b>
<b>Avg. Earnings</b>	<b>25,477</b>	<b>45,032</b>	<b>55,285</b>	<b>61,851</b>	<b>66,030</b>	<b>67,617</b>	<b>70,145</b>	<b>73,566</b>	<b>74,698</b>	<b>47,641</b>

\* Reflects active participants as of June 30, 2008. Unlike the exhibit on page 14, counts do not include disabled participants. Exhibit reflects a change in service for one member reported on December 1 and not reflected in the rest of this report.

