December 2011

Judges Retirement Fund

Actuarial Valuation Report as of July 1, 2011

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Contents

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December 2011

Minnesota State Retirement System
Judges Retirement Fund
St. Paul MN

Dear Board of Directors:

Submitted in this report are the July 1, 2011 actuarial valuation results for the Judges 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 actuarially required contribution for the fiscal year beginning July 1, 2011.

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 exception 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, 2011**	**July 1, 2010**
Statutory Contributions – Chapter 490 (% of Payroll)	27.98%*	28.04%
Required Contributions – Chapter 356 (% of Payroll)	33.15%	31.66%
Sufficiency / (Deficiency)	(5.17%)	(3.62%)

The contribution deficiency increased from (3.62%) of payroll to (5.17%) of payroll. The primary reason for the increase in contribution deficiency is the recognition of deferred investment losses in the actuarial value of assets, which was partially offset by actuarial gains due to lower than expected salary increases. 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 23.3% for the plan year ending June 30, 2011. The AVA earned 5.4% for the plan year ending June 30, 2011 as compared to the assumed rate of 8.5%, as required by Minnesota Statute.

The contribution received for the prior year were less than the amount actuarially required. This resulted in an increase of approximately $1.5 million in unfunded liability and an increase of approximately 0.23% of payroll in this year's required contributions.

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).

* *Statutory contributions reflect the fact that member contributions for Judges at the maximum benefit level are directed to the Unclassified Employees Retirement Plan. If these contributions were not directed to the Unclassified Employees Retirement Plan, the statutory contribution rate would be 28.50% instead of 27.98%.*

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, 2011	**July 1, 2010**
Contributions *(% of Payroll)*		
Statutory – Chapter 490*	27.98%	28.04%
Required – Chapter 356	33.15%	31.66%
Sufficiency / (Deficiency)	(5.17%)	(3.62%)
Funding Ratios *(dollars in thousands)*		
Accrued Liability Funding Ratio		
– Current assets (AVA)	$ 145,996	$ 144,728
– Current assets (MVA)	148,504	126,201
– Actuarial accrued liability	248,630	240,579
– Funding ratio (AVA)	58.72%	60.16%
– Funding ratio (MVA)	59.73%	52.46%
Projected Benefit Funding Ratio		
– Current and expected future assets (AVA)	$ 260,738	$ 262,256
– Current and expected future benefit obligations	294,248	286,233
– Projected benefit funding ratio (AVA)	88.61%	91.62%
Participant Data		
Active members		
– Number	308	312
– Projected annual earnings *(000s)*	$ 41,211	$ 41,366
– Average annual earnings *(projected)*	$ 133,802	$ 132,582
– Average age	57.3	57.1
– Average service	11.1	11.1
Service retirements	176	170
Survivors	96	94
Disability retirements	25	27
Deferred retirements	18	18
Terminated other non-vested	0	0
Total	**623**	**621**

* *Statutory contributions reflect the fact that employee contributions for Judges at the maximum benefit level are directed to the Unclassified Employees Retirement Plan. If these contributions were not directed to the Unclassified Employees Retirement Plan, the statutory contribution rate would be 28.50%.*

Principal Valuation Results

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 accrued liability funding ratio (on a market value of assets basis and assuming 2.0% post-retirement benefit increases in all future years) is currently 59.7%. If the plan reaches a funding ratio of 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 2011 valuation results as a baseline and assuming future experience follows the valuation assumptions (including future investment returns of 8.5%). In addition, the projection utilized the following methods and assumptions:

- Liabilities and normal cost assume future COLAs at 2.5% level payable for all years
- Cash flow assuming future COLAs at current 2.0% level
- Level normal cost as a percent of pay (assuming total payroll increases as assumed in the valuation for purposes of amortizing the unfunded liability).
- Current statutory contribution levels (i.e. not including potential contribution increases under the contribution stabilizer statutes).

Based on these assumptions and methods, the projection indicates that the funded status of this plan is not expected to reach 90% within the next 15 years of the projection.

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 actuarial accrued liability would be $257 million instead of $249 million, resulting in a funded ratio of 57.7% (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 actuarially required contribution rate for the fiscal year beginning July 1, 2011.

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.

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

Important Notices

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.

The calculation of actuarial liabilities for valuation purposes is based on a current estimate of future benefit payments. The calculation includes a computation of the "present value" of those estimated future benefit payments using an assumed discount rate; the higher the discount rate assumption, the lower the estimated liability will be. For purposes of estimating the liabilities (future and accrued) in this report, you selected an assumption based on the expected long term rate of return on plan investments. Using a lower discount rate assumption, such as a rate based on long-term bond yields, could substantially increase the estimated present value of future and accrued liabilities.

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* sections 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 Minnesota 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

Important Notices

comprehensiveness of this information. If any data or plan provisions supplied are not accurate and complete, the valuation results may 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 Minnesota State Retirement System and the Minnesota State Board of Investments. The assets represent the portion of total fund liabilities that has been funded.

- **Membership data** presents and describes the membership data used in the valuation.

- **Development of costs** shows the liabilities for plan benefits and the derivation of the contribution amount.

- **Actuarial basis** describes the plan provisions, as well as the methods and assumptions used to value the plan. The valuation is based on the premise that the plan is ongoing.

- **Plan accounting under GASB 25 (as amended by GASB 50)** shows the disclosures required by GASB Statement No. 25 as amended by GASB Statement No. 50.

- **Glossary** defines the terms used in this report.

Plan Assets

Statement of Plan Net Assets as of June 30, 2011 *(Dollars in Thousands)*

		Market Value
Assets in Trust		
▪ Cash, equivalents, short term securities	$	4,448
▪ Fixed income		32,657
▪ Equity		111,138
▪ Other*		10,134
Total assets in trust	**$**	**158,377**
Assets Receivable		383
Total Assets	**$**	**158,760**
Amounts Payable*		(10,256)
Net assets held in trust for pension benefits	**$**	**148,504**

* *Includes $10,134 in Securities Lending Collateral.*

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, 2010 to June 30, 2011.

Change in Assets *(dollars in thousands)*		**Market Value**
1. Fund balance at market value at July 1, 2010	$	126,201
2. Contributions		
a. Member		3,010
b. Employer		8,297
c. Other sources		0
d. Total contributions	$	11,307
3. Investment income		
a. Investment income/(loss)	$	28,850
b. Investment expenses		(206)
c. Total investment income/(loss)	$	28,644
4. Other		0
5. Total income *(2.d. + 3.c. + 4)*	$	**39,951**
6. Benefits Paid		
a. Annuity benefits	$	(17,585)
b. Refunds		(30)
c. Total benefits paid	$	(17,615)
7. Expenses		
a. Other	$	(1)
b. Administrative		(32)
c. Total expenses	$	(33)
8. Total disbursements *(6.c. + 7.c.)*	$	**(17,648)**
9. Fund balance at market value at June 30, 2011 *(1. + 5. + 8.)*	$	**148,504**

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Plan Assets

Actuarial Asset Value *(Dollars in Thousands)*

				June 30, 2011
1. Market value of assets available for benefits				$ 148,504
2. Determination of average balance				
a. Assets available at July 1, 2010				126,201
b. Assets available at June 30, 2011				148,504
c. Net investment income for fiscal year ending June 30, 2011				28,644
d. Average balance *[a. + b. – c.] / 2*				123,031
3. Expected return *[8.5% * 2.d.]*				10,458
4. Actual return				28,644
5. Current year unrecognized asset return				18,186
6. Unrecognized asset returns*				
	Original Amount	**% Not Recognized**		
a. Year ended June 30, 2011	$ 18,186	80%		$ 14,549
b. Year ended June 30, 2010	7,838	60%		4,703
c. Year ended June 30, 2009	(38,483)	40%		(15,393)
d. Year ended June 30, 2008	(6,753)	20%		(1,351)
e. Total unrecognized return				$ 2,508
7. Actuarial value at June 30, 2011 *(1. – 6.e.)*				**$ 145,996**

**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, 2011						
Age	**< 1****	**1 – 4****	**5 - 9**	**10 - 14**	**15 - 19**	**20+**	**Total**
< 25							**0**
Avg. Earnings							**N/A**
25 – 29							**0**
Avg. Earnings							**N/A**
30 – 34							**0**
Avg. Earnings							**N/A**
35 – 39	4	1					**5**
Avg. Earnings	66,416	145,981					**82,329**
40 – 44	1	12	3				**16**
Avg. Earnings	64,808	129,155	131,933				**125,654**
45 – 49	1	13	18				**32**
Avg. Earnings	63,819	130,154	131,808				**129,011**
50 – 54	2	16	17	13	5		**53**
Avg. Earnings	64,314	129,031	130,116	130,917	124,671		**126,988**
55 – 59	3	13	20	22	14	4	**76**
Avg. Earnings	63,819	127,978	130,004	130,287	122,182	131,231	**125,750**
60 – 64		11	10	17	19	32	**89**
Avg. Earnings		129,169	130,810	130,000	130,486	125,755	**128,565**
65 – 69		1	5	13	5	13	**37**
Avg. Earnings		129,124	130,810	129,621	138,048	129,772	**130,960**
70+							**0**
Avg. Earnings							**N/A**
Total	**11**	**67**	**73**	**65**	**43**	**49**	**308**
Avg. Earnings	**64,943**	**129,344**	**130,720**	**130,205**	**127,985**	**127,267**	**127,032**

* *Includes 20 judges who have reached the maximum benefit formula (employee contributions are directed to the Unclassified Employees Retirement Plan).*

** *This exhibit does not reflect service earned in other MSRS plans or Combined Service Annuity benefits. It should not be relied upon as an indicator of non-vested status.*

In each cell, the top number is the count of active participants for the age/service combination and the bottom number is average actual earnings for the fiscal year ending on the valuation date.

Membership Data

Distribution of Service Retirements

	Years Retired as of June 30, 2011							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 +**	**Total**
<50								**0**
Avg. Benefit								**N/A**
50 – 54								**0**
Avg. Benefit								**N/A**
55 – 59								**0**
Avg. Benefit								**N/A**
60 – 64	4	5						**9**
Avg. Benefit	49,031	63,786						**57,228**
65 – 69	11	23	6					**40**
Avg. Benefit	70,593	65,980	54,853					**65,579**
70 – 74	2	17	19	5				**43**
Avg. Benefit	54,215	61,042	61,037	52,727				**59,755**
75 – 79			13	15	1			**29**
Avg. Benefit			62,054	69,914	32,018			**65,084**
80 – 84				13	13	3		**29**
Avg. Benefit				59,821	75,635	73,659		**68,341**
85 – 89					12	9	1	**22**
Avg. Benefit					83,298	69,257	20,498	**74,699**
90+						1	3	**4**
Avg. Benefit						52,401	99,569	**87,777**
Total	**17**	**45**	**38**	**33**	**26**	**13**	**4**	**176**
Avg. Benefit	**63,593**	**63,871**	**60,408**	**63,334**	**77,494**	**68,976**	**79,802**	**65,747**

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

Membership Data

Distribution of Disability Retirements

	Years Retired as of June 30, 2011							
Age	**< 1**	**1 – 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25+**	**Total**
<55								**0**
Avg. Benefit								**N/A**
55 – 59			2					**2**
Avg. Benefit			47,538					**47,538**
60 – 64		1	2					**3**
Avg. Benefit		69,177	59,907					**62,997**
65 – 69		2	4					**6**
Avg. Benefit		62,324	63,942					**63,402**
70 – 74			3	2	1			**6**
Avg. Benefit			62,260	49,331	104,987			**65,071**
75 – 79				3				**3**
Avg. Benefit				94,570				**94,570**
80 – 84								**0**
Avg. Benefit								**N/A**
85 – 89						4	1	**5**
Avg. Benefit						91,527	68,479	**86,917**
90+								**0**
Avg. Benefit								**N/A**
Total	**0**	**3**	**11**	**5**	**1**	**4**	**1**	**25**
Avg. Benefit	**N/A**	**64,608**	**59,767**	**76,474**	**104,987**	**91,527**	**68,479**	**70,928**

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

Distribution of Survivors

	Years Since Death of Member as of June 30, 2011							
Age	**<1**	**1 - 4**	**5 - 9**	**10 - 14**	**15 - 19**	**20 - 24**	**25 +**	**Total**
<55	1							**1**
Avg. Benefits	20,727							**20,727**
55 – 59		2	1	2	1	1		**7**
Avg. Benefit		43,037	41,194	34,924	50,927	53,783		**43,118**
60 – 64	2	6	2	1			1	**12**
Avg. Benefit	43,228	41,724	36,732	16,965			57,908	**40,428**
65 – 69		3	1	2		2		**8**
Avg. Benefit		40,382	47,897	58,825		65,575		**52,231**
70 – 74	2	3	1	1		2		**9**
Avg. Benefit	52,474	36,449	9,157	53,650		46,410		**41,103**
75 – 79	2	3		3	1			**9**
Avg. Benefit	45,338	62,712		39,093	63,819			**51,101**
80 – 84		4	6	2	5	3	4	**24**
Avg. Benefit		49,943	40,938	74,122	39,447	44,974	36,576	**44,671**
85 – 89	1	2	3	5	3		1	**15**
Avg. Benefit	38,031	54,869	41,425	40,084	47,555		27,548	**42,845**
90+			3	2	3	1	2	**11**
Avg. Benefit			49,614	87,314	36,344	60,827	80,663	**59,514**
Total	**8**	**23**	**17**	**18**	**13**	**9**	**8**	**96**
Avg. Benefit	**42,605**	**46,285**	**40,615**	**49,927**	**43,360**	**52,611**	**49,136**	**46,092**

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

Reconciliation of Members

		Terminated		Recipients			
	Actives*	Deferred Retirement	Other Non-Vested	Service Retirement	Disability Retirement	Survivors	Total
Members on 7/1/2010	**312**	**18**	**0**	**170**	**27**	**94**	**621**
New members	16	0	0	0	0	0	**16**
Return to active	0	0	0	0	0	0	**0**
Terminated non-vested	0	0	0	0	0	0	**0**
Service retirements	(16)	(1)	0	17	0	0	**0**
Terminated deferred	(2)	2	0	0	0	0	**0**
Terminated refund/transfer	(2)	0	0	0	0	0	**(2)**
Deaths	0	(1)	0	(11)	(2)	(6)	**(20)**
New beneficiary	0	0	0	0	0	8	**8**
Disabled	0	0	0	0	0	0	**0**
Data correction	0	0	0	0	0	0	**0**
Net change	(4)	0	0	6	(2)	2	**2**
Members on 6/30/2011	**308**	**18**	**0**	**176**	**25**	**96**	**623**

Terminated Member Statistics	**Deferred Retirement**	**Other Non-Vested**	**Total**
Number	18	0	18
Average Age	57.5	N/A	57.5
Average Service	9.7	N/A	9.7
Average annual benefits, with 30% CSA load**	$ 42,115	N/A	$ 42,115
Average refund value, with 30% CSA load	$ 129,548	N/A	$ 129,548

* *Includes active Judges who have reached the maximum benefit formula (employee contributions are directed to the Unclassified Employees Retirement Plan)*
** *Includes estimated benefits for 4 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 principle that the long-term projected benefit obligations of the plan should be ideally equal to the long-term resources available to fund those obligations. The resources available to meet projected obligations for current members consist of current fund assets plus the present value of anticipated future contributions intended to fund benefits for current members. In the exhibit below, B.2 is the estimated present value of contributions to fund the normal cost rate for current members until their respective termination dates. Item B.1 is the present value of the total 27.98% statutory contribution net of normal cost and anticipated plan expenses during the period from the valuation date to the statutory unfunded amortization date.

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, 2011
A. Actuarial Value of Assets					$	145,996
B. Expected future assets						
1. Present value of expected future statutory supplemental contributions					$	69,124
2. Present value of future normal costs						45,618
3. Total expected future assets *(1. + 2.)*					$	114,742
C. Total current and expected future assets					$	260,738
		Non-Vested		Vested		Total
D. Current benefit obligations						
1. Benefit recipients						
a. Service retirements	$	0	$	95,464	$	95,464
b. Disability		0		14,092		14,092
c. Survivors		0		32,206		32,206
2. Deferred retirements		0		4,543		4,543
3. Former members without vested rights		0		0		0
4. Active members		4,868		89,138		94,006
5. Total Current Benefit Obligations	$	4,868	$	235,443	$	240,311
E. Expected Future Benefit Obligations					$	53,937
F. Total Current and Expected Future Benefit Obligations					$	294,248
G. Unfunded Current Benefit Obligations *(D.5. − A.)*					$	94,315
H. Unfunded Current and Future Benefit Obligations *(F. − C.)*					$	33,510

Development of Costs

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

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
A. Determination of Actuarial Accrued Liability (AAL)			
1. Active members			
a. Retirement annuities	$ 136,051	$ 39,477	$ 96,574
b. Disability benefits	5,200	2,820	2,380
c. Survivor's benefits	6,357	3,186	3,171
d. Deferred retirements	0	0	0
e. Refunds	335	135	200
f. Total	$ 147,943	$ 45,618	$ 102,325
2. Deferred retirements	4,543	0	4,543
3. Former members without vested rights	0	0	0
4. Benefit recipients	141,762	0	141,762
5. Total	$ 294,248	$ 45,618	$ 248,630
B. Determination of Unfunded Actuarial Accrued Liability (UAAL)			
1. Actuarial accrued liability			$ 248,630
2. Current assets (AVA)			145,996
3. Unfunded actuarial accrued liability			$ 102,634
C. Determination of Supplemental Contribution Rate*			
1. Present value of future payrolls through the amortization date of June 30, 2038			$ 647,917
2. Supplemental Contribution Rate *(B.3. / C.1.)*			15.84%**

* *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, 2011 is 15.7221.*

Development of Costs

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

			Year Ending June 30, 2011
A.	Unfunded actuarial accrued liability at beginning of year	$	95,851
B.	Changes due to interest requirements and current rate of funding		
	1. Normal cost and actual administrative expenses	$	7,105
	2. Contributions		(11,307)
	3. Interest on A., B.1. and B.2.		7,969
	4. Total *(B.1. + B.2. + B.3.)*	$	3,767
C.	Expected unfunded actuarial accrued liability at end of year *(A. + B.4.)*	$	99,618
D.	Increase (decrease) due to actuarial losses (gains) because of experience deviations from expected		
	1. Salary increases	$	(3,256)
	2. Investment return (AVA)		4,458
	3. Mortality of benefit recipients		1,630
	4. Other items		184
	5. Total	$	3,016
E.	Unfunded actuarial accrued liability at end of year before plan amendments and changes in actuarial assumptions *(C. + D.5.)*	$	102,634
F.	Change in unfunded actuarial accrued liability due to changes in plan provisions	$	0
G.	Change in unfunded actuarial accrued liability due to changes in actuarial assumptions	$	0
H.	Change in unfunded actuarial accrued liability due to changes in asset methods	$	0
I.	Unfunded actuarial accrued liability at end of year *(E. + F. + G.+ H.)**	$	102,634

** The unfunded actuarial accrued liability on a market value of assets basis is $100,126.*

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.

	Percent of Payroll		Dollar Amount
A. Statutory contributions – Chapter 490			
1. Employee contributions*	7.48%	$	3,082
2. Employer contributions	20.50%		8,448
3. Total	27.98%	$	11,530
B. Required contributions – Chapter 356			
1. Normal cost**			
a. Retirement benefits	14.88%	$	6,131
b. Disability benefits	1.05%		433
c. Survivors	1.25%		515
d. Deferred retirement benefits	0.00%		0
e. Refunds due to death or withdrawal	0.05%		23
f. Total	17.23%	$	7,102
2. Supplemental contribution amortization by July 1, 2038 of Unfunded Actuarial Accrued Liability	15.84%		6,528
3. Allowance for expenses	0.08%	$	33
4. Total	33.15%***	$	13,663
C. Contribution Sufficiency/(Deficiency) *(A.3. – B.4.)*	(5.17%)	$	(2,133)

Note: Projected annual payroll for fiscal year beginning on the valuation date: $41,211.

* *For Judges who have reached the maximum benefit amount, employee contributions equal to 8% of pay are directed to the Unclassified Employees Retirement Plan. The employee contribution amount of $3,082 shown above is equal to 8% of a payroll amount of $38,525, which excludes the payroll for Judges at the maximum level*

** *Normal cost includes ½ year of interest.*

*** *The required contribution on a market value of assets basis is 32.76% of payroll.*

Actuarial Basis

Actuarial Cost Method

Actuarial Accrued Liability and required 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.

Current Benefit Obligation is computed using the Projected Unit Credit cost method.

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 Legislative Commission on Pensions and Retirement 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 plan 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 June 30, 2038 assuming payroll increases of 4.00% 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. Projected payroll is multiplied by 0.957 in the determination of the present value of future payroll to account for timing differences (as required by the Standards for Actuarial Work).

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 2011, 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 2011, the limit is $245,000.

Changes in actuarial methods since prior valuation

None.

Actuarial Basis

Summary of actuarial assumptions

The following assumptions were used in valuing the liabilities and benefits under the plan. All actuarial assumptions are prescribed by Minnesota Statutes, the Legislative Commission on Pensions and Retirement (LCPR), or the MSRS Board of Directors. These parties are responsible for selecting the assumptions used for this valuation. The assumptions prescribed are based on the last experience study, dated December 2007.

The *Allowance for Combined Service Annuity* was based on a recommendation by a former actuary. We are unable to judge the reasonableness of this assumption without performing a substantial amount of additional work beyond the scope of the assignment.

The *Pre-retirement Mortality Rates* are based on a table that is almost 30 years old and the post-retirement mortality rates have not been updated since 2008. Mortality rates have improved since these tables were adopted for use by the plan and are generally expected to continue to improve. Using these tables as is does not comply with the guidance in Actuarial Standards of Practice Number 35 (ASOP 35), which requires an explicit assumption about mortality improvement, and if no mortality improvement is assumed after the valuation date, an explanation as to why. To the extent the rates in this table are too high, i.e. mortality has improved or will in the future, this report understates the plan's liabilities and required contributions.

In the event of a conflict between the Standards for Actuarial Work established by the LCPR and ASOP 35, the Standards require that the actuary for the Fund and the Commission's actuary review the situation to determine the approach to completing the valuations. We discussed this issue with Milliman, acting in their capacity as the Commission’s actuary, and their preferred approach, as followed herein, is to use the prescribed mortality for 2011 valuations with commentary, and update the mortality assumption in 2012. An experience study has been authorized by MSRS and is scheduled to occur in 2012.

Investment return:	6.50% compounded annually post-retirement. 8.50% compounded annually pre-retirement.
Benefit increases after retirement	Payment of 2.0% annual benefit increases after retirement accounted for by using a 6.5% post-retirement assumption, as required by Minnesota Statute.
Salary increases	4.00% annually.
Mortality rates	
Healthy Pre-retirement	1983 Group Annuity Mortality for males set back four years 1983 Group Annuity Mortality for females set back two years
Healthy Post-retirement	RP-2000 Combined Mortality table, projected 8 years, with no collar adjustment
Disabled	Combined Annuity Mortality.
Retirement	Members retiring from active status are assumed to retire according to the following age related rates. Members who have attained the highest assumed retirement age are assumed to retire in one year. Ages: 62-63 10% 64 5% 65-67 20% 68-69 30% 70 100%
Withdrawal	None.

Actuarial Basis

Summary of actuarial assumptions *(continued)*

Disability	Rates based on actual experience, as shown in rate table.
Payroll growth	4.00% per annum.
Commencement of deferred benefits	Members receiving deferred annuities (including current terminated deferred members) are assumed to begin receiving benefits at age 65.
Allowance for Combined Service Annuity	Liabilities for former members are increased by 30.00% to account for the effect of some participants having eligibility for a Combined Service Annuity.
Administrative expenses	Prior year administrative expenses expressed as percentage of prior year payroll.
Form of payment	Members are assumed to elect a life annuity.
Percentage married *Age of spouse*	Marital status as indicated by data. Females are assumed to be three years younger than males.
Unknown data for certain members	To prepare this report, Mercer has used and relied on participant data supplied by the Fund. 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. There are no members reported with missing gender or birth dates. In cases where submitted data was missing or incomplete, the following assumptions were applied: Data for active members: There are 20 members who have reached the 24 year service cap; 18 of these were reported as terminated members. These members are reflected as active members in this valuation. We assumed these members earned $129,124 for the July 1, 2010 to June 30, 2011 plan year. There were no members reported with missing salary or service. Data for terminated members: There were four members reported without a benefit. If available, we calculated benefits for these members using the reported Average Salary and credited service. If Average Salary was also not reported (four members), we assumed a value of $70,000. There were no members reported without credited service or a termination date. Data for members receiving benefits: There were no members reported without a benefit.
Changes in actuarial assumptions	None.

Actuarial Basis

Summary of actuarial assumptions *(continued)*

Summary of Rates

	Rate (%)			
	Pre-retirement Mortality		Disability	
Age	**Male**	**Female**	**Male**	**Female**
20	0.03%	0.02%	0.00%	0.00%
25	0.04	0.02	0.00	0.00
30	0.05	0.03	0.02	0.00
35	0.06	0.04	0.02	0.01
40	0.09	0.06	0.02	0.02
45	0.14	0.08	0.03	0.05
50	0.25	0.14	0.14	0.10
55	0.43	0.21	0.34	0.24
60	0.66	0.34	0.76	0.62
65	1.01	0.58	0.00	0.00
70	1.76	0.97	0.00	0.00

Actuarial Basis

Summary of plan provisions

Following is a summary of the major plan provisions used in the valuation of this report. MSRS is solely responsible for the validity, accuracy and comprehensiveness of this information. If any of the plan provisions shown below are not accurate and complete, the valuation results may differ significantly from those shown in this report and may require a revision of this report. Moreover, these plan provisions may be susceptible to different interpretations, each of which could be reasonable, and that the different interpretations could lead to different valuation results.

Plan year	July 1 through June 30
Eligibility	A judge or justice of any court. If the member was active prior to January 1, 1974, benefits may be computed according to provisions of the prior plan.
Contributions	
Member	8.00% of salary. Contributions after maximum benefit is reached are redirected to the Unclassified Employees Retirement Plan.
Employer	20.50% of salary.
	Member contributions are "picked up" according to the provisions of Internal Revenue Code 414(h).
Allowable service	Service as a judge. Credit may also be earned for uncredited judicial service if the appropriate employee contributions, with interest, are made.
Salary	Salary set by law.
Average salary	Average of the five highest years of salary of the last 10 years prior to termination of judicial service.
Retirement	
Normal retirement benefit	
Age/Service requirements	(a.) Age 65 and five years of Allowable Service.
	(b.) Age 70 (mandatory retirement age)
Amount	2.70% of Average Salary for each year of Allowable Service prior to July 1, 1980 and 3.20% of Average Salary for each year of Allowable Service after June 30, 1980.
	Maximum benefit of 76.80% of Average Salary.
Early retirement benefit	
Age/Service requirements	Age 60 and five years of Allowable Service.
Amount	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement date with reduction of 0.50% for each month the member is under age 65 at time of retirement.
Form of payment	Life annuity. Actuarially equivalent options are:
	(a.) 50%, 75% or 100% joint and survivor with no bounce back feature
	(b.) 50%, 75% or 100% bounce back feature
	(c.) 10 or 15-year certain and life thereafter

Actuarial Basis

Summary of plan provisions *(continued)*

Retirement (continued)	
Benefit increases	Benefit recipients receive future annual 2.0% benefit increases. If the accrued liability 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.
Disability	
Disability benefit	
Age/service requirement	Permanent inability to perform the function of judge.
Amount	No benefit is paid by the Fund. Instead salary is continued for one year but not beyond age 70. Employee contributions continue and Allowable Service is earned. If disability continues after the first year (or at age 70 if earlier), the larger of 25.00% of Average Salary or the Normal Retirement Benefit, without reduction.
Retirement after disability	
Age/service requirement	Member is still disabled after salary payments cease after one year or at age 70, if earlier.
Amount	No change in disability benefit amount from pre-retirement computed benefit amount.
Form of payment	Same as for retirement.
Benefit increases	Same as for retirement.
Death	
Survivor's benefit	
Age/service requirement	Active or disabled member dies before retirement or a former member eligible for a deferred annuity dies.
Amount	Larger of 25% of Average Salary or 60% of Normal Retirement Benefit earned at date of death. If member dies after age 60 with five or more years of service, spouse may receive the 100% joint and survivor benefit the member had earned as of date of death. Benefit paid to spouse for life. If no spouse, benefit is paid to surviving dependent children until child marries, dies, or attains age 18 (age 22 if full-time student).
Benefit increases	Same as for retirement.
Refund of contributions	
Age/service requirement	Member dies prior to retirement or former member eligible for a deferred annuity dies and survivors' benefits are not payable.
Amount	Member contributions with 6.00% annual interest compounded daily until June 30, 2011 and 4.00% thereafter.

Actuarial Basis

Summary of plan provisions *(continued)*

Termination	
Refund of contributions	
Age/service requirement	Termination of service as a judge.
Amount	Member contributions with 6.00% annual interest compounded daily until June 30, 2011, 4.00% thereafter. If a member is vested, a deferred annuity may be elected in lieu of a refund.
Deferred benefit	
Age/service requirement	Five years of Allowable Service.
Amount	Benefit computed under law in effect at termination. 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%.
Form of Payment	Same as for retirement.
Optional form conversion factors	Actuarially equivalent factors based on 1983 Group Annuity Mortality, blended 75% male and 25% female, and 6% interest.
Combined Service Annuity	Members are eligible for combined service benefits if they: (a.) Have sufficient allowable service in total that equals or exceeds the applicable service credit vesting requirement of the retirement plan with the longest applicable service credit vesting requirement; and (b.) Have at least six months of allowable service credit in each plan worked under (c.) Are not in receipt of a benefit from another plan, or have applied for benefits with an effective date within one year. Members who meet the above requirements must have their benefit based on the following: (a.) Allowable service in all covered plans are combined in order to determine eligibility for early retirement. (b.) Average salary is based on the high five consecutive years during their entire service in all covered plans.
Changes in plan provisions	None.

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	$ 33,559	$ 78,429	$ 44,870	42.79%	$ 18,410	243.73%
07/01/1992	37,768	83,969	46,201	44.98%	22,765	202.95%
07/01/1993	44,156	90,509	46,353	48.79%	22,084	209.89%
07/01/1994	50,428	98,313	47,885	51.29%	22,264	215.08%
07/01/1995	56,813	102,238	45,425	55.57%	22,877	198.56%
07/01/1996	64,851	108,150	43,299	59.96%	22,421	193.12%
07/01/1997	74,681	117,714	43,033	63.44%	22,909	187.84%
07/01/1998	86,578	130,727	44,149	66.23%	24,965	176.84%
07/01/1999	97,692	139,649	41,957	69.96%	32,940	127.37%
07/01/2000	111,113	153,660	42,547	72.31%	26,315	161.68%
07/01/2001	123,589	165,244	41,655	74.79%	28,246	147.47%
07/01/2002	131,379	171,921	40,542	76.42%	31,078	130.45%
07/01/2003	134,142	176,291	42,149	76.09%	33,771	124.81%
07/01/2004	138,948	190,338	51,390	73.00%	34,683	148.17%
07/01/2005	144,465	191,414	46,949	75.47%	35,941	130.63%
07/01/2006	151,850	202,301	50,451	75.06%	36,529	138.11%
07/01/2007	153,562	214,297	60,735	71.66%	36,195	167.80%
07/01/2008	147,542	231,623	84,081	63.70%	38,296[2]	219.56%
07/01/2009	147,120	241,815	94,695	60.84%	39,444[3]	240.07%
07/01/2010	144,728	240,579	95,851	60.16%	39,291[3]	243.95%
07/01/2011	145,996	248,630	102,634	58.72%	40,473[4]	253.59%

[1] *Information prior to 2008 provided by The Segal Company.*
[2] *Equal to actual earnings for active members as of the valuation date (annualized for members with less than one year of service).*
[3] *Equal to actual earnings for active members as of the valuation date.*
[4] *Assumed equal to actual employer contributions divided by 20.50%.*

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 (as amended by GASB 50) 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	23.59%	$ 18,410	$ 799	$ 3,544	$ 0	0.00%
1992	25.10%	22,765	988	4,726	4,722	99.92%
1993	26.59%	22,084	1,409	4,463	4,845	108.56%
1994	26.29%	22,264	1,416	4,437	4,912	110.71%
1995	28.27%	22,877	1,455	5,012	5,162	102.99%
1996	27.32%	22,421	1,426	4,699	4,972	105.81%
1997	27.01%	22,909	1,457	4,731	6,632	140.18%
1998	27.60%	24,965	1,570	5,320	7,129	134.00%
1999	27.32%	32,940	2,069	6,930	7,051	101.75%
2000	26.75%	26,315	2,107	4,932	7,298	147.97%
2001[3]	24.58%	28,246	2,162	4,781	7,793	163.00%
2002	26.72%	31,078	2,345	5,959	8,369	140.44%
2003[4]	26.82%	33,771	2,574	6,483	6,923	106.79%
2004	26.73%	34,683	2,643	6,628	7,110	107.27%
2005	29.42%	35,941	2,662	7,912	7,225	91.32%
2006	29.14%	36,529	2,866	7,779	7,336	94.30%
2007	30.73%	36,195	2,792	8,331	7,572	90.88%
2008[5]	33.70%	38,296[6]	2,861	10,045	7,936	79.00%
2009[7],[8]	30.33%	39,444[9]	2,978	8,985	8,219	91.47%
2010[10]	31.53%	39,291[9]	2,988	9,400	8,282	88.11%
2011[11]	31.66%	40,473[12]	3,010	9,804	8,297	84.63%
2012	33.15%	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 plan provisions and Asset Valuation Method is 26.81%.*
[4] *Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 26.75%.*
[5] *Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 31.61%.*
[6] *Equal to actual earnings for active members as of the valuation date (annualized for members with less than one year of service).*
[7] *Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 38.78%..*
[8] *2008 results revised as per our December 9, 2009 letter to MSRS' Executive Director.*
[9] *Equal to actual earnings for active members as of the valuation date.*
[10] *Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 32.46%.*
[11] *Actuarially Required Contribution Rate prior to changes in Assumptions and Plan Provisions is 33.56%.*
[12] *Assumed equal to actual employer contributions divided by 20.50%.*

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 Required Contribution (ARC) calculated for plan financial reporting is established by the actuarial cost method and 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 recommended annual contribution to a defined benefit pension plan, calculated in accordance with the parameters of GASB 25 (as amended by GASB 50) or GASB 27. The ARC for a given fiscal reporting period is affected by the specific actuarial cost method selected by the plan sponsor.

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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