Minnesota State Retirement System
State Patrol Retirement Fund

Actuarial Valuation and Review
as of July 1, 2007

SEGAL

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November 29, 2007

Mr. Dave Bergstrom
Minnesota State Retirement System
State Patrol Retirement Fund
60 Empire Drive, Suite 300
St. Paul, Minnesota 55103-3000

Dear Mr. Bergstrom:

We are pleased to submit this Actuarial Valuation and Review as of July 1, 2007. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2008 and analyzes the preceding year's experience.

The census and financial information on which our calculations were based was prepared by the Minnesota State Retirement System. That assistance is gratefully acknowledged. The actuarial calculations were completed under our supervision.

This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions used in the valuation are consistent with those in the statute, and reasonably represent the experience of the plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

THE SEGAL COMPANY

By:

Thomas D. Levy, FSA, MAAA, EA	Andre Latia, FSA, MAAA, EA	Brad E. Ramirez, FSA, MAAA, EA
Senior Vice President and Chief Actuary	Senior Vice President and Consulting Actuary	Consulting Actuary

cc: *Legislative Commission on Pensions and Retirement (3 copies)*
Minnesota Legislative Reference Library (6 copies)
Minnesota Department of Finance (2 copies)

SECTION 1

VALUATION SUMMARY

SECTION 2

VALUATION RESULTS

SECTION 3

SUPPLEMENTAL INFORMATION

SECTION 4

REPORTING INFORMATION

Purpose

This report has been prepared by The Segal Company to present a valuation of the Minnesota State Retirement System (State Patrol Retirement Fund) as of July 1, 2007. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- Applicable Minnesota Statutes;
- The benefit provisions of the Retirement Fund as administered by the Fund;
- The characteristics of covered active participants, inactive vested participants, pensioners and beneficiaries as of July 1, 2007, provided by the Fund;
- The assets of the Fund as of June 30, 2007, provided by the Fund;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The statutory contribution rate under Chapter 352B is equal to 22.70% of payroll compared to the required contribution rate under Chapter 356 of 29.90% of payroll. Therefore, the contribution deficiency is 7.20% of payroll or $4,426,531. Each year that there is a contribution deficiency leads to an increased deficiency in all future years. The FY2007 shortfall increased the required rate for FY2008 (and each succeeding year through FY 2036) by 0.32% of payroll.
- In accordance with the passage of the contribution rate increase bill, projected employee contribution increases are valued in projected refunds. Future statutory contribution rates are as follows:

Effective Date	Employee Rate	Employer Rate
Current	9.10	13.60
July 1, 2008	9.80	14.60
July 1, 2009	10.40	15.60

- The report shows that the statutory funding rate is significantly less than the required rate. In the absence of exceptionally favorable future experience, this difference is expected to increase over time. We strongly recommend that this shortfall be addressed promptly, so that the funded position does not continue to deteriorate.
- There were no changes in plan provisions or actuarial assumptions since the prior valuation.
- The only change in actuarial cost methods since the prior valuation was a modification to the asset valuation method, effective with the July 1, 2007 valuation. Assets allocated to the Minnesota Post Retirement Investment Fund (MPRIF) must equal the Market Value of Assets on the valuation date. This change resulted in a decrease to the Actuarial Value of Assets and increase to the Unfunded Actuarial Accrued Liability of $32,234,769. The Supplemental Contribution increased by $1,771,130, which directly impacted the Contribution Deficiency, resulting in total deficiency of 7.20% of payroll.
- The actuarial accrued liability funded ratio based on the actuarial value of assets under the new asset method as of July 1, 2007 is 91.75% compared to 96.49% as of July 1, 2006. The funded ratio based on this calculation under the old asset valuation method would have increased to 96.54% as of July 1, 2007, hence the decrease in the funded ratio from 96.54% to 91.75% is entirely attributable to the asset valuation method change. This ratio is a measure of funding status, and its history is a measure of funding progress.

Summary of Key Valuation Results

	2007*	2006
Contributions (% of payroll) for plan year beginning July 1:		
Statutory – Chapter 352B	22.70%	21.00%
Required – Chapter 356	29.90%	26.69%
Sufficiency/(Deficiency)	-7.20%	-5.69%
Funding elements for plan year beginning July 1:		
Normal cost	$15,219,351	$14,098,467
Market value of assets	649,181,278	633,419,202
Actuarial value of assets (AVA)	617,900,887	618,990,349
Actuarial accrued liability (AAL)	673,443,671	641,479,078
Unfunded/(Overfunded) actuarial accrued liability	55,542,784	22,488,729
Funded ratios:		
Accrued Benefit Funded Ratio	95.43%	98.33%
Current assets (AVA)	$617,900,887	$618,990,349
Current benefit obligations	647,476,418	629,477,444
Projected Benefit Funded Ratio	90.25%	92.23%
Current and expected future assets	$746,429,658	$723,936,494
Current and expected future benefit obligations (Present Value of Benefits)	827,049,179	784,943,000
GASB 25/27 for plan year beginning July 1:		
Annual required employer contributions	$11,426,961	$6,741,285
Accrued Liability Funded Ratio (AVA/AAL)	91.75%	96.49%
Covered payroll	$61,497,551	$57,765,450
Demographic data for plan year beginning July 1:		
Number of pensioners and beneficiaries	876	846
Number of vested terminated participants	32	33
Number of other non-vested terminated participants	8	8
Number of active participants	844	851
Total projected payroll	$61,497,551	$57,765,450
Average projected payroll	72,864	67,879

**The 2007 results reflect a change in the Asset Valuation Method, with MPRIF Reserves equal to Market Value.*

A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, vested terminated participants, pensioners and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A through F.

A historical perspective of how the participant population has changed over the past several valuations can be seen in this chart.

CHART 1

Participant Population: 2002 – 2007

Year Ended June 30	Active Participants	Vested Terminated Participants*	Pensioners and Beneficiaries	Ratio of Non-Actives to Actives
2002	810	27	762	0.97
2003	805	20	785	1.00
2004	834	27	804	1.00
2005	831	34	825	1.03
2006	851	33	846	1.03
2007	844	32	876	1.08

* *Excluded terminated participants due a refund of employee contributions.*

Active Participants
Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 844 active participants with an average age of 41.0, average years of service of 12.0 years and average projected payroll of $72,864. The 851 active participants in the prior valuation had an average age of 41.0, average service of 12.3 years and average projected payroll of $67,879.

Inactive Participants
In this year's valuation, there were 32 participants with a vested right to a deferred or immediate vested benefit.

In addition, there were 8 other non-vested terminated participants entitled to a refund of employee contributions.

These graphs show a distribution of active participants by age and by years of service.

CHART 2

Distribution of Active Participants by Age as of June 30, 2007

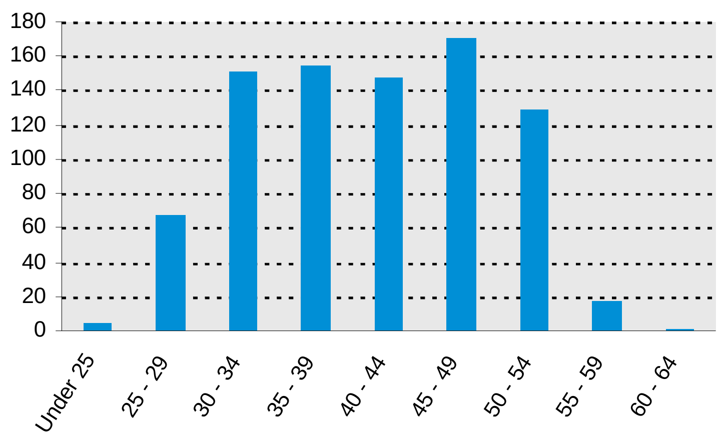
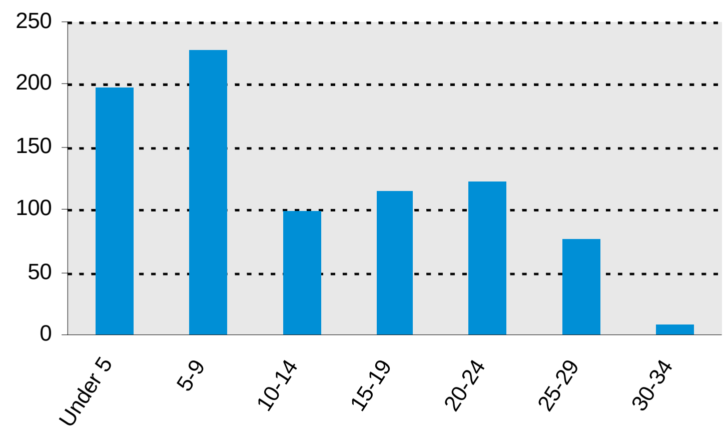


CHART 3

Distribution of Active Participants by Years of Service as of June 30, 2007



Pensioners and Beneficiaries
As of June 30, 2007, 686 pensioners (645 retired and 41 disabled participants) and 190 beneficiaries were receiving average monthly benefits of $3,946. For comparison, in the previous valuation, there were 667 pensioners (626 retired and 41 disabled participants) and 179 beneficiaries receiving average monthly benefits of $3,894.

These graphs show a distribution of the current pensioners and beneficiaries based on their monthly amount and age, by type of pension.

CHART 4

Distribution of Pensioners and Beneficiaries by Type and by Monthly Amount as of June 30, 2007

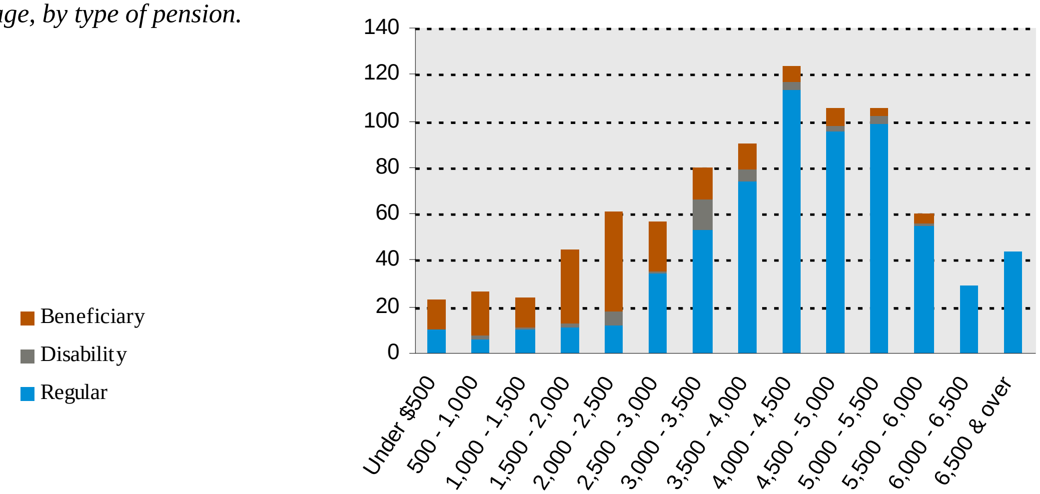
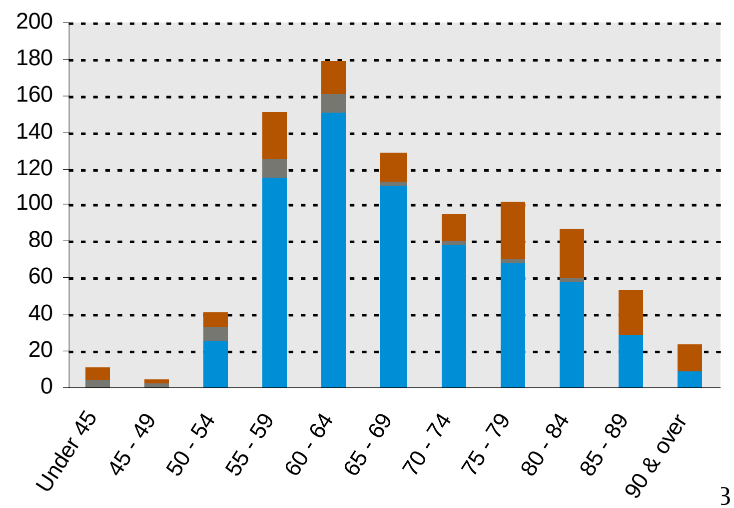


CHART 5

Distribution of Pensioners and Beneficiaries by Type and by Age as of June 30, 2007



B. FINANCIAL INFORMATION

It is desirable to have level and predictable plan costs from one year to the next. For this reason, Minnesota Statutes require an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

Both the actuarial value and market value of assets are representations of the Fund's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. Actuarial asset value is significant because the Fund's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

Effective with the July 1, 2007 valuation, the Asset Valuation Method was changed such that assets allocated to the Minnesota Post Retirement Investment Fund (MPRIF) must equal the Market Value of Assets on the valuation date. The next page summarizes the determination of the Actuarial Value of Assets for the Year ended June 30, 2007, before and after this method change.

The chart shows the determination of the actuarial value of assets as of the valuation date, before the asset valuation method change.

CHART 6A

Determination of Actuarial Value of Assets for Year Ended June 30, 2007 – Before Asset Valuation Method Change

1.	Market value of assets available for benefits			$681,416,046
		Original Amount	% Not Recognized	
2.	Calculation of unrecognized return			
	(a) Year ended June 30, 2007	$24,934,310	80%	$19,947,448
	(b) Year ended June 30, 2006	10,479,965	60%	6,287,979
	(c) Year ended June 30, 2005	4,925,230	40%	1,970,092
	(d) Year ended June 30, 2004	15,374,357	20%	3,074,871
	(e) Total unrecognized return			31,280,391
3.	Actuarial value of assets (“Current Assets”): (1) – (2e)			$650,135,655
4.	Actuarial value as percent of market value			95.4%

The chart shows the determination of the actuarial value of assets as of the valuation date, after the asset valuation method change.

CHART 6B

Determination of Actuarial Value of Assets for Year Ended June 30, 2007 – After Asset Valuation Method Change

1.	Market value of assets available for benefits			$649,181,278
		Original Amount	% Not Recognized	
2.	Calculation of unrecognized return			
	(a) Year ended June 30, 2007	$24,934,310	80%	$19,947,448
	(b) Year ended June 30, 2006	10,479,965	60%	6,287,979
	(c) Year ended June 30, 2005	4,925,230	40%	1,970,092
	(d) Year ended June 30, 2004	15,374,357	20%	3,074,871
	(e) Total unrecognized return			31,280,391
3.	Actuarial value of assets (“Current Assets”): (1) – (2e)			$617,900,887
4.	Actuarial value as percent of market value			95.2%

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

For the plan year ended June 30, 2007, the total gain is $3,411,867, including a gain of $5,126,728 from investments and a loss of $1,714,862 from all other sources. The net experience variation from individual sources other than investments was 0.25% of the actuarial accrued liability.

This chart provides a summary of the actuarial experience during the past year.

CHART 7

Actuarial Experience for Year Ended June 30, 2007

1.	Net gain from investments	$5,126,728
2.	Net (loss) from salary experience	-215,396
3.	Net (loss) from other experience	-1,499,466
4.	Net experience gain: (1) + (2) + (3)	$3,411,867

D. INFORMATION REQUIRED BY THE GASB

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded in accordance with the GASB actuarially required contributions. Section 4, Exhibit III presents a schedule of this information for the Fund.

The other critical piece of information regarding the Fund's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the plan as calculated under GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other changes.

GASB requires that the actuarial value of assets be used to determine the funded ratio, as shown in Section 4, Exhibit IV.

EXHIBIT A
Table of Plan Coverage

	Year Ended June 30		
Category	**2007**	**2006**	**Change From Prior Year**
Active participants in valuation:			
Number	844	851	-0.8%
Average age	41.0	41.0	N/A
Average service	12.0	12.3	N/A
Total projected payroll	$61,497,551	$57,765,450	6.5%
Average projected payroll	72,864	67,879	7.3%
Total active vested participants	724	697	-3.9%
Vested terminated participants	32	33	-3.0%
Retired participants:			
Number in pay status	645	626	3.0%
Average age	67.8	67.7	N/A
Average monthly benefit	$4,463	$4,389	1.7%
Disabled participants:			
Number in pay status	41	41	0.0%
Average age	58.5	58.4	N/A
Average monthly benefit	$3,303	$3,282	0.6%
Beneficiaries:			
Number in pay status	190	179	6.1%
Average age	73.3	73.2	N/A
Average monthly benefit	$2,336	$2,262	3.1%
Other non-vested terminated participants	8	8	0.0%

EXHIBIT B

Participants in Active Service as of June 30, 2007
By Age, Years of Service, and Average Payroll

		Years of Service									
Age	**Total**	**Under 5**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40 & over**	**Unknown**
Under 25	5	5	- -	- -	- -	- -	- -	- -	- -	- -	- -
	$40,300	$40,300	- -	- -	- -	- -	- -	- -	- -	- -	- -
25 - 29	67	60	7	- -	- -	- -	- -	- -	- -	- -	- -
	58,408	57,067	$69,899	- -	- -	- -	- -	- -	- -	- -	- -
30 - 34	151	69	76	6	- -	- -	- -	- -	- -	- -	- -
	65,223	56,299	71,979	$82,280	- -	- -	- -	- -	- -	- -	- -
35 - 39	155	30	77	33	15	- -	- -	- -	- -	- -	- -
	71,106	58,284	73,619	74,494	$76,394	- -	- -	- -	- -	- -	- -
40 - 44	147	13	39	31	43	21	- -	- -	- -	- -	- -
	76,197	54,871	77,052	75,590	79,775	$81,377	- -	- -	- -	- -	- -
45 - 49	171	11	18	24	36	63	19	- -	- -	- -	- -
	78,631	66,180	75,886	73,458	75,775	82,076	$88,965	- -	- -	- -	- -
50 - 54	129	7	9	4	16	36	51	6	- -	- -	- -
	80,330	46,009	79,788	77,382	76,211	84,041	83,866	$81,800	- -	- -	- -
55 - 59	18	2	2	- -	4	1	7	2	- -	- -	- -
	79,664	50,286	84,238	- -	81,330	90,239	82,071	87,421	- -	- -	- -
60 - 64	1	- -	- -	- -	- -	1	- -	- -	- -	- -	- -
	69,305	- -	- -	- -	- -	69,305	- -	- -	- -	- -	- -
Total	844	197	228	98	114	122	77	8	- -	- -	- -
	$72,864	$56,460	$74,061	$75,182	$77,621	$82,498	$84,961	$83,206	$0	$0	$0

EXHIBIT C

Retired Participants as of June 30, 2007
By Age, Years Since Retirement, and Average Annual Benefit

		Years Since Retirement							
Age	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over
Under 45	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -
45 - 49	- -	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -	- -
50 - 54	32	2	2	1	5	9	12	1	- -
	$41,589	$3,957	$12,075	$24,148	$38,794	$38,250	$56,240	$61,523	- -
55 - 59	126	1	3	4	14	24	48	32	- -
	48,664	10,121	9,307	20,215	34,730	41,880	52,273	62,884	- -
60 - 64	153	3	- -	3	10	17	59	60	1
	53,025	3,439	- -	24,412	35,948	45,244	55,935	59,242	$46,017
65 - 69	103	2	1	3	4	13	44	33	3
	56,560	5,877	12,625	13,863	40,401	47,472	58,355	68,146	54,845
70 - 74	73	1	2	2	3	9	28	28	- -
	60,544	5,928	11,665	25,291	37,472	50,590	61,017	73,704	- -
75 - 79	67	1	- -	4	2	12	23	22	3
	57,295	2,955	- -	22,341	38,200	46,206	56,869	71,903	75,252
80 - 84	57	1	- -	3	2	16	13	21	1
	55,782	5,145	- -	23,026	48,143	47,415	60,392	66,328	72,422
85 - 89	27	- -	1	2	2	5	8	6	3
	50,423	- -	17,304	22,433	21,642	44,596	51,433	71,120	64,936
90 & Over	7	- -	- -	- -	- -	3	2	2	- -
	48,899	- -	- -	- -	- -	40,669	55,005	55,138	- -
Total	645	11	9	22	42	108	237	205	11
	$53,555	$4,921	$11,703	$21,533	$36,421	$44,899	$56,434	$65,622	$63,958

EXHIBIT D

Disabled Participants as of June 30, 2007
By Age, Years Since Disability, and Average Annual Benefit

		Years Since Disability						
Age	**Total**	**Under 5**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30 & Over**
Under 45	5	- -	1	- -	1	3	- -	- -
	$37,148	- -	$38,264	- -	$26,523	$40,317	- -	- -
45 - 49	1	- -	- -	- -	- -	1	- -	- -
	52,007	- -	- -	- -	- -	52,007	- -	- -
50 - 54	12	- -	2	2	2	4	1	1
	36,673	- -	17,958	$39,402	30,901	36,305	$55,345	$62,987
55 - 59	6	1	1	- -	1	1	1	1
	34,329	$8,483	10,244	- -	28,019	53,801	37,482	67,945
60 - 64	9	- -	- -	1	1	6	1	- -
	44,795	- -	- -	36,225	40,568	43,530	65,187	- -
65 - 69	2	- -	- -	1	- -	1	- -	- -
	38,957	- -	- -	38,054	- -	39,859	- -	- -
70 - 74	2	- -	- -	- -	- -	- -	2	- -
	55,056	- -	- -	- -	- -	- -	55,056	- -
75 - 79	2	- -	- -	- -	1	1	- -	- -
	39,843	- -	- -	- -	32,623	47,062	- -	- -
80 - 84	2	- -	- -	- -	2	- -	- -	- -
	35,090	- -	- -	- -	35,090	- -	- -	- -
85 - 89	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -
90 & over	- -	- -	- -	- -	- -	- -	- -	- -
	- -	- -	- -	- -	- -	- -	- -	- -
Total	41	1	4	4	8	17	5	2
	$39,630	$8,483	$21,106	$38,271	$32,464	$42,357	$53,625	$65,466

EXHIBIT E

Beneficiaries as of June 30, 2007
By Age, Years Since Death, and Average Annual Benefit

		Years Since Death							
Age	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over
Under 45	3	- -	- -	1	- -	- -	- -	2	- -
	$17,689	- -	- -	$28,008	- -	- -	- -	$12,530	- -
45 - 49	2	- -	- -	1	- -	- -	1	- -	- -
	33,018	- -	- -	53,742	- -	- -	$12,294	- -	- -
50 - 54	9	1	- -	- -	1	4	1	2	- -
	25,210	$33,611	- -	- -	$14,126	$25,642	41,432	17,577	- -
55 - 59	27	5	5	4	1	5	2	4	1
	13,588	5,364	$7,292	7,936	19,297	17,641	26,784	21,508	$24,731
60 - 64	17	- -	1	- -	- -	1	10	2	3
	31,708	- -	54,992	- -	- -	28,237	32,723	24,452	26,556
65 - 69	14	2	- -	- -	1	2	6	2	1
	34,179	17,510	- -	- -	14,067	32,484	39,607	34,740	57,326
70 - 74	18	1	1	1	2	6	3	4	- -
	34,312	66,205	18,961	24,642	26,941	33,563	27,190	42,747	- -
75 - 79	35	2	- -	3	4	8	10	7	1
	32,764	16,806	- -	13,742	19,393	30,866	40,880	43,025	37,429
80 - 84	22	- -	1	2	- -	5	8	6	- -
	34,150	- -	9,871	32,130	- -	28,570	34,418	43,164	- -
85 - 89	25	1	- -	1	3	1	10	7	2
	25,236	5,723	- -	5,750	23,597	30,464	23,167	32,007	31,230
90 & over	18	1	1	1	5	1	- -	7	2
	25,033	25,980	31,589	9,643	17,784	19,495	- -	30,314	31,381
Total	190	13	9	14	17	33	51	43	10
	$28,040	$17,459	$16,875	$18,501	$19,921	$28,033	$32,736	$33,303	$32,437

EXHIBIT F

Reconciliation of Participant Data

	Active Participants	Vested Former Participants	Other Non-Vested Terminated Participants	Disableds	Retired Participants	Beneficiaries	Total
Number as of July 1, 2005	851	33	9	41	626	179	1,739
New participants	29	N/A	0	N/A	N/A	N/A	29
Terminations – with vested rights	-1	2	0	0	0	0	1
Terminations – other non-vested	-3	N/A	4	N/A	N/A	N/A	1
Terminated – refund	0	0	0	0	0	0	0
Transferred to fund	0	0	0	0	0	0	0
Retirements	-30	-2	0	N/A	32	N/A	0
New disabilities	-1	0	0	1	N/A	N/A	0
Died with beneficiary	0	0	0	0	-18	18	0
Died without beneficiary	-1	0	0	-1	-13	-5	-20
Rehired	1	-1	0	0	0	N/A	0
Data adjustments	-1	0	-5	0	18	-2	10
Valuation number as of July 1, 2006	844	32	8	41	645	190	1,760

EXHIBIT G

Summary Statement of Income and Expenses on a Market Value Basis for Year Ended June 30, 2007

				Non-MPRIF Assets	MPRIF Reserve	Market Value
A.	Assets available at beginning of year (BOY)			$220,263,702	$413,155,500	$633,419,202
B.	Operating revenues:					
	1.	Member contributions		$4,986,736	-	$4,986,736
	2.	Employer contributions		7,461,442	-	7,461,442
	3.	MPRIF income		-	$33,240,304	33,240,304
	4.	Net investment income				
		(a)	Interest and dividends	$33,931,544	-	$33,931,544
		(b)	Net appreciation/(depreciation)	9,598,711	-	9,598,711
		(c)	Investment expenses	-300,118	-	-300,118
		(d)	Net subtotal	$43,230,137	-	$43,230,137
	5.	Other		2,889	-	2,889
	6.	Total additions		$55,681,204	$33,240,304	$88,921,508
C.	Operating expenses:					
	1.	Benefits		-	$40,581,617	$40,581,617
	2.	Refunds		$133,059	-	133,059
	3.	Administrative expenses		112,090	-	112,090
	4.	Other		97,897	-	97,897
	5.	Total operating expenses		$343,046	$40,581,617	$40,924,663
D.	Other changes in reserves:					
	1.	Annuities awarded		-$22,074,477	$22,074,477	-
	2.	Mortality gain/(loss)		-4,080,438	4,080,438	-
	3.	Change in MPRIF asset valuation method		-	-32,234,769	-32,234,769
	4.	Total other changes		-$26,154,915	-$6,079,854	-$32,234,769
E.	Assets available at end of year (EOY)			$249,446,945	$399,734,333	$649,181,278
F.	Determination of current year unrecognized asset return (UAR)					
	1.	Average balance:				
		(a)	Non-MPRIF assets available at BOY: (A)			$220,263,702
		(b)	Non-MPRIF assets available at EOY*: (E) – (D.2)			253,527,383
		(c)	Average balance: [(F.1.a) + (F.1.b) – (B.4.d) – (B.5)]/2			215,279,029
	2.	Expected return: 8.50% x (F.1.c)				18,298,717
	3.	Actual return: (B.4.d) + (B.5)				43,233,027
	4.	Current year UAR: (F.3) – (F.2)				$24,934,310

** Before adjustment for MPRIF Mortality Gain/Loss*

EXHIBIT H

Table of Financial Information for Year Ended June 30, 2007

	Market Value	Cost Value
Assets in trust		
Cash, equivalents, short-term securities:	$2,936,261	$2,936,261
Fixed income	56,063,722	58,415,006
Equity	194,039,530	174,100,345
Equity in MPRIF*	399,734,332	399,734,332
Total assets in trust	$652,773,845	$635,185,944
Assets receivable	$662,490	$662,490
Total assets	$653,436,335	$635,848,434
Amounts currently payable	-$4,255,057	-$4,255,057
Assets available for benefits		
MPRIF reserves	$399,734,332	$399,734,332
Member reserves	47,365,321	47,365,321
Other non-MPRIF reserves	202,081,625	216,728,493
Net assets at Market/Cost Value	$649,181,278	$663,828,146
Net assets at Actuarial Value	$649,181,278	$663,828,146

**The Cost Value of the Equity in the MPRIF is stated as Market Value in the MPRIF. The actual liability of the MPRIF Reserve is $431,969,101.*

EXHIBIT I

Actuarial Value of Assets Calculation History Through June 30, 2007

Year Ended June 30	Employer Contributions	Employee Contributions	Net Investment Return*	Change in Asset Method	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
2003	$6,826,000	$4,555,000	$23,178,000	- -	$94,000	$34,327,000	$591,521,000
2004	6,504,011	4,493,495	27,879,769	- -	94,988	35,518,013	594,785,274
2005	6,670,272	4,517,186	32,301,242	- -	93,386	36,960,407	601,220,181
2006	7,055,235	4,719,380	44,915,724	- -	100,637	38,819,534	618,990,349
2007	7,461,442	4,986,736	59,523,895	-$32,234,769	112,090	40,714,676	617,900,887

* *Net Investment Return on an Actuarial Value of Assets basis and net of investment fees.*

EXHIBIT J

Development of Unfunded/(Overfunded) Actuarial Accrued Liability for Year Ended June 30, 2007

1.	Unfunded/(Overfunded) actuarial accrued liability at beginning of year		$22,488,729
2.	Normal cost at beginning of year		14,098,467
3.	Total contributions		-12,448,178
4.	Interest		2,580,864
5.	Expected unfunded/(Overfunded) actuarial accrued liability (1) + (2) – (3) + (4)		$26,719,882
6.	Changes due to:		
	(a) Investments	-$5,126,728	
	(b) MPRIF mortality	4,080,438	
	(c) Salary experience	215,396	
	(d) Other experience	-2,580,973	
	(e) Total changes		-$3,411,867
7.	Changes due to change in asset valuation method		$32,234,769
8.	Unfunded/(Overfunded) actuarial accrued liability at end of year		$55,542,784

EXHIBIT K

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions: The estimates on which the cost of the Fund is calculated including:

(a) Investment return — the rate of investment yield that the Fund will earn over the long-term future;

(b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;

(c) Retirement rates — the rate or probability of retirement at a given age;

(d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost: The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability For Actives: The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability For Pensioners: The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued Liability: The extent to which the actuarial accrued liability of the Fund exceeds the assets of the Fund. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

Amortization of the Unfunded Actuarial Accrued Liability: Payments made over a period of years equal in value to the Fund's unfunded actuarial accrued liability.

Investment Return: The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

Accrued Benefit Funded Ratio: A current year funded status that measures the percent of benefits covered by Current Assets. This ratio is based on benefits earned to the valuation date (accrued service) and includes future salary increases to retirement. The liability for these benefits is defined as the Current Benefit Obligations. The Accrued Benefit Funded Ratio is calculated as the Actuarial Value of Assets (Current Assets) divided by the Current Benefit Obligations.

Projected Benefit Funded Ratio: A projected funded status that measures contribution sufficiency/deficiency, which is based on a present value of all plan benefits for the lifetime of all plan members. The liability for these benefits is defined as the Current and Expected Future Benefit Obligations, or Present Value of Benefits. The Current and Expected Future Assets are determined as the sum of the Actuarial Value of Assets (Current Assets), the Present Value of Expected Future Statutory Supplemental Contributions and the Present Value of Future Normal Costs. The Projected Benefit Funded Ratio is calculated as the Current and Expected Future Assets divided by the Current and Expected Future Benefit Obligations. If the ratio is equal to or more than 100%, there is a contribution sufficiency, and if it is less than 100% there is a contribution deficiency.

EXHIBIT IA

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1.	Pensioners as of the valuation date (including 190 beneficiaries in pay status)		876
2.	Participants inactive during year ended June 30, 2007 with vested rights		32
3.	Participants active during the year ended June 30, 2007		844
	Fully vested	724	
	Not vested	120	

The actuarial factors as of the valuation date are as follows:

1.	Normal cost		$15,219,351
2.	Present value of future benefits		827,049,179
3.	Present value of future normal costs		153,605,508
4.	Actuarial accrued liability		673,443,671
	Pensioners and beneficiaries	$432,215,192	
	Inactive participants with vested rights	4,939,962	
	Participants due refunds	18,041	
	Active participants	236,270,476	
5.	Actuarial value of assets ($649,181,278 at market value)		$617,900,887
6.	Unfunded actuarial accrued liability		$55,542,784

EXHIBIT IB

Summary of Actuarial Valuation Results (Before Asset Valuation Method Change)

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
A. Determination of Actuarial Accrued Liability			
1. Active participants:			
(a) Death benefits	$9,748,482	$6,559,863	$3,188,619
(b) Disability benefits	25,800,079	14,853,728	10,946,351
(c) Withdrawal benefits	4,267,292	2,907,161	1,360,161
(d) Retirement benefits	349,920,704	128,693,176	221,227,528
(e) Refunds	139,427	591,580	-452,153
(f) Total	$389,875,984	$153,605,508	$236,270,476
2. Vested terminated participants	$4,939,962	-	$4,939,962
3. Other non-vested terminated participants	18,041	-	18,041
4. Annuitants in MPRIF	431,969,101	-	431,969,101
5. Annuitants not in MPRIF	246,091	-	246,091
6. Total	$827,049,179	$153,605,508	$673,443,671

B. Determination of Unfunded Actuarial Accrued Liability	
1. Actuarial Accrued Liability	$673,443,671
2. Actuarial Value of Assets	650,135,665
3. Unfunded Actuarial Accrued Liability: (B.1) - (B.2)	$23,308,016
C. Determination of Supplemental Contribution Rate	
1. Present value of future payrolls through the amortization date of July 1, 2036	$1,119,497,190
2. Supplemental contribution rate: (B.3) / (C.1)	2.08%

EXHIBIT IC

Summary of Actuarial Valuation Results (After Asset Valuation Method Change)

	Actuarial Present Value of Projected Benefits	Actuarial Present Value of Future Normal Costs	Actuarial Accrued Liability
A. Determination of Actuarial Accrued Liability			
1. Active participants:			
(a) Death benefits	$9,748,482	$6,559,863	$3,188,619
(b) Disability benefits	25,800,079	14,853,728	10,946,351
(c) Withdrawal benefits	4,267,292	2,907,161	1,360,161
(d) Retirement benefits	349,920,704	128,693,176	221,227,528
(e) Refunds	139,427	591,580	-452,153
(f) Total	$389,875,984	$153,605,508	$236,270,476
2. Vested terminated participants	$4,939,962	-	$4,939,962
3. Other non-vested terminated participants	18,041	-	18,041
4. Annuitants in MPRIF	431,969,101	-	431,969,101
5. Annuitants not in MPRIF	246,091	-	246,091
6. Total	$827,049,179	$153,605,508	$673,443,671
B. Determination of Unfunded Actuarial Accrued Liability			
1. Actuarial Accrued Liability			$673,443,671
2. Actuarial Value of Assets			617,900,887
3. Unfunded Actuarial Accrued Liability: (B.1) - (B.2)			$55,542,784
C. Determination of Supplemental Contribution Rate			
1. Present value of future payrolls through the amortization date of July 1, 2036			$1,119,497,190
2. Supplemental contribution rate: (B.3) / (C.1)			4.96%

EXHIBIT II

Actuarial Balance Sheet

A. Current Assets				$617,900,887
B. Expected Future Assets				
1. Present Value of Expected Future Statutory Supplemental Contributions				-$25,076,737
2. Present Value of Future Normal Costs				153,605,508
3. Total Expected Future Assets				$128,528,771
C. Total Current and Expected Future Assets				$746,429,658
D. Current Benefit Obligations	**Non-Vested**	**Vested**	**Total**	
1. Benefit recipients:				
(a) Retirement annuities	-	$364,618,538	$364,618,538	
(b) Disability benefits	-	19,772,069	19,772,069	
(c) Beneficiaries	-	47,824,585	47,824,585	
2. Vested terminated participants	-	4,939,962	4,939,962	
3. Other non-vested terminated participants	-	18,041	18,041	
4. Active participants	$2,558,957	207,744,266	210,303,223	
5. Total Current Benefit Obligations	$2,558,957	$644,917,461	$647,476,418	
E. Expected Future Benefit Obligations				179,572,761
F. Total Current and Expected Future Benefit Obligations - Present Value of Benefits: (D.5 + E)				$827,049,179
G. Current Unfunded Actuarial Liability (D.5 - A)				$29,575,531
H. Current and Future Unfunded Actuarial Liability (F - C)				$80,619,521

EXHIBIT III

Supplementary Information Required by the GASB – Schedule of Employer Contributions

Year Ended June 30	Actuarially Required Contribution Rate (a)	Actual Covered Payroll (b)	Actual Member Contributions (c)	Annual Required Employer Contributions [(a) x (b)] – (c) = (d)	Actual Employer Contributions[1] (e)	Percentage Contributed (e) / (d)
1991	22.15%	$32,365,000	$2,751,000	$4,418,000	$4,825,000	109.21%
1992	22.58%	32,882,000	2,795,000	4,630,000	4,893,000	105.68%
1993	22.27%	35,765,000	3,040,000	4,925,000	5,288,000	107.37%
1994	21.94%	35,341,000	3,004,000	4,750,000	5,159,000	108.61%
1995	21.79%	37,518,000	3,189,000	4,986,000	5,583,000	111.97%
1996	21.34%	41,476,000	3,484,000	5,367,000	5,742,000	106.99%
1997	21.33%	41,996,000	3,746,000	5,212,000	6,151,000	118.02%
1998	15.67%	43,456,000	3,634,000	3,176,000	5,475,000	172.39%
1999	14.14%	45,333,000	3,850,000	2,560,000	5,712,000	223.13%
2000	15.17%[2]	48,167,000	4,044,000	3,263,000	6,069,000	185.99%
2001	15.48%[3]	48,935,000	4,145,000	3,430,000	6,166,000	179.77%
2002	14.00%	49,278,000	4,215,000	2,684,000	6,209,000	231.33%
2003	14.34%[4]	54,175,000	4,555,000	3,214,000	6,826,000	212.38%
2004	17.81%	51,619,135	4,493,495	4,699,873	6,504,011	138.39%
2005	18.15%	55,142,064	4,517,186	5,491,099	6,670,272	121.47%
2006	19.84%	57,765,450	4,719,380	6,741,285	7,055,235	104.66%
2007	26.69%[5]	61,497,551	4,986,736	11,426,961	7,461,442	65.30%
2008	29.90%[6]					

(1) *Includes contributions from other sources (if applicable).*

(2) *Actuarially Required Contribution Rate calculated according to parameters of GASB 25 using a 30-year amortization of the negative unfunded accrued liability.*

(3) *Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 15.15%.*

(4) *Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 14.20%.*

(5) *Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 21.76%.*

(6) *Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 27.02%.*

EXHIBIT IV

Supplementary Information Required by the GASB – Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded 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	$200,068,000	$224,033,000	$23,965,000	89.30%	$32,365,000	74.05%
07/01/1992	222,314,000	233,656,000	11,342,000	95.15%	32,882,000	34.49%
07/01/1993	244,352,000	258,202,000	13,850,000	94.64%	35,765,000	38.73%
07/01/1994	262,570,000	275,377,000	12,807,000	95.35%	35,341,000	36.24%
07/01/1995	284,918,000	283,078,000	-1,840,000	100.65%	37,518,000	-4.90%
07/01/1996	323,868,000	303,941,000	-19,927,000	106.56%	41,476,000	-48.04%
07/01/1997	375,650,000	332,427,000	-43,223,000	113.00%	41,996,000	-102.92%
07/01/1998	430,011,000	371,369,000	-58,642,000	115.79%	43,456,000	-134.95%
07/01/1999	472,687,000	406,215,000	-66,472,000	116.36%	45,333,000	-146.63%
07/01/2000	528,573,000	458,384,000	-70,189,000	115.31%	48,167,000	-145.72%
07/01/2001	572,815,000	489,483,000	-83,332,000	117.02%	48,935,000	-170.29%
07/01/2002	591,383,000	510,344,000	-81,039,000	115.88%	49,278,000	-164.45%
07/01/2003	591,521,000	538,980,000	-52,541,000	109.75%	54,175,000	-96.98%
07/01/2004	594,785,274	545,243,508	-49,541,766	109.09%	51,619,135	-95.98%
07/01/2005	601,220,181	566,763,689	-34,456,492	106.08%	55,142,064	-62.49%
07/01/2006	618,990,349	641,479,078	22,488,729	96.49%	57,765,450	38.93%
07/01/2007	617,900,887	673,443,671	55,542,784	91.75%	61,497,551	90.32%

EXHIBIT VA

Determination of Contribution Sufficiency (Before Asset Valuation Method Change)

		July 1, 2007	
A.	**Statutory Contributions – Chapter 352B**	**Percent of Payroll**	**Dollar Amount**
1.	Member Contributions	9.10%	$5,596,277
2.	Employer Contributions	13.60%	8,363,667
3.	Total	22.70%	$13,959,944
B.	**Required Contributions – Chapter 356**		
1.	Normal Cost		
	(a) Retirement Benefits	20.68%	$12,716,574
	(b) Disability Benefits	2.46%	1,512,347
	(c) Survivors	1.00%	613,302
	(d) Deferred Retirement Benefits	0.49%	303,802
	(e) Refunds	0.12%	73,327
	(f) Total	24.75%	$15,219,351
2.	Amortization of Supplemental Contribution UAAL	2.08%	1,279,149
3.	Allowance for Expenses	0.19%	116,845
4.	Total	27.02%	$16,615,345
C.	**Contribution Sufficiency (Deficiency) (A.3 – B.4)**	-4.32%	-$2,655,401
D.	**Projected annual payroll for fiscal year beginning on the valuation date**		$61,497,551

EXHIBIT VB

Determination of Contribution Sufficiency (After Asset Valuation Method Change)

	July 1, 2007	
A. Statutory Contributions – Chapter 352B	**Percent of Payroll**	**Dollar Amount**
1. Member Contributions	9.10%	$5,596,277
2. Employer Contributions	13.60%	8,363,667
3. Total	22.70%	$13,959,944
B. Required Contributions – Chapter 356		
1. Normal Cost		
(a) Retirement Benefits	20.68%	$12,716,574
(b) Disability Benefits	2.46%	1,512,347
(c) Survivors	1.00%	613,302
(d) Deferred Retirement Benefits	0.49%	303,802
(e) Refunds	0.12%	73,327
(f) Total	24.75%	$15,219,351
2. Amortization of Supplemental Contribution UAAL		
(a) Before change in Asset Valuation Method	2.08%	$1,279,149
(b) Cost Impact due to change in Asset Valuation Method	2.88%	1,771,130
3. Allowance for Expenses	0.19%	116,845
4. Total	29.90%	$18,386,475
C. Contribution Sufficiency (Deficiency) (A.3 – B.4)	-7.20%	-$4,426,531
D. Projected annual payroll for fiscal year beginning on the valuation date		$61,497,551

EXHIBIT VI

Supplementary Information Required by the GASB

Valuation date	July 1, 2007
Actuarial cost method	Entry Age Normal
Amortization method	Level percentage of payroll
Remaining amortization period	29 years remaining as of July 1, 2007
Asset valuation method	MPRIF Reserve: Market Value
	Non-MPRIF Assets: Market Value, adjusted for amortization obligations receivable at the end of each fiscal year, less a percentage of the Unrecognized Asset Return determined at the close of each of the four preceding fiscal years. Unrecognized Asset Return is the difference between actual net return on Market Value of Assets and the asset return expected during that fiscal year (based on the assumed interest rate employed in the July 1 Actuarial Valuation of the fiscal year).
Actuarial assumptions:	
Investment rate of return:	
Pre-retirement	8.50% per annum
Post-retirement	6.00% per annum
Projected payroll increases	6.00% per annum
Plan membership:	
Pensioners and beneficiaries receiving benefits	876
Terminated participants entitled to, but not yet receiving benefits	32
Other non-vested terminated participants due a refund of contributions	8
Active participants	844
Total	1,760

EXHIBIT VII
Actuarial Assumptions and Actuarial Cost Method

Net Investment Return:

Pre-Retirement:	8.50% per annum.
Post-Retirement:	8.50% per annum.

Benefit Increases After Retirement: Payment of earnings on retired reserves in excess of 6.00% accounted for by using a 6.00% post-retirement assumptions.

Mortality Rates:

Healthy Pre-Retirement:	Male:	1983 Group Annuity Mortality Table for males set back five years.
	Female:	1983 Group Annuity Mortality Table for females set back two years.
Healthy Post-Retirement:	Male:	1983 Group Annuity Mortality Table for males set back two years.
	Female:	1983 Group Annuity Mortality Table for females set back one year.
Disabled:	Male:	Combined Annuity Mortality.
	Female:	Combined Annuity Mortality.

Retirement Rates:	Age-related table as follows: Ages: 50-54 7.00% 55 60.00 56 40.00 57-59 20.00 60 & over 100.00
Withdrawal Rates:	Graded rates starting at 0.0147 at age 20 and decreasing to 0.002 at age 49 with rates equal to 0.025 for the first three years of employment.
Disability Rates:	Rates adopted by MSRS as shown in rate table.
Allowance for Combined Service Annuity:	Liabilities for active members are increased by 0.00% and 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 expenses expressed as percentage of prior year payroll.
Return of Contributions:	All employees withdrawing after becoming eligible for a deferred benefit take the larger of their contributions accumulated with interest or the value of their deferred benefit.
Percent Married:	100.00% of members are assumed to married.
Age of Spouse:	Females are assumed to be three years younger than males.
Eligible Children:	Each member is assumed to have two children whose ages are dependent upon the member's age. Assumed first child is born at member's age 28 and second child is born at member's age 31.
Social Security:	N/A

Special Consideration:	Married members assumed to elect subsidized joint and survivor form of annuity as follows: Males - 25.00% elect 50% J&S option 25.00% elect 100% J&S option Females - 5.00% elect 50% J&S option 5.00% elect 100% J&S option
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are expressed as a level percentage of payroll with Normal Cost determined as if the current benefit accrual rate had always been in effect. The actuarial cost method was changed as of July 1, 1997 to permit negative amortization of supplemental contribution surpluses.
Asset Valuation Method:	MPRIF Reserve: Market Value Non-MPRIF Assets: Market Value less a percentage of the Unrecognized Asset Return determined at the close of each of the four preceding fiscal years. Unrecognized Asset Return is the difference between actual net return on Market Value of Assets and the asset return expected during the fiscal year (based on the assumed interest rate employed in the July 1 Actuarial Valuation of the fiscal year). Transition rules apply between July 1, 2000 and July 1, 2003, when the method is fully in effect.
Payment on the Unfunded Actuarial Accrued Liability:	A level percentage of payroll each year to the statutory amortization date assuming payroll increases of 5.00% 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.

Summary of Rates: Shown below for selected ages:

	Rates (%)							
	Healthy Pre-Retirement Mortality		Healthy Post-Retirement Mortality		Disabled Mortality		Withdrawal	
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
20	0.03%	0.02%	0.04%	0.02%	0.21%	0.21%	1.47%	1.47%
25	0.04	0.02	0.04	0.02	0.22	0.22	1.13	1.13
30	0.05	0.03	0.05	0.03	0.24	0.24	0.80	0.80
35	0.06	0.04	0.07	0.04	0.34	0.34	0.47	0.47
40	0.09	0.06	0.10	0.06	0.50	0.50	0.40	0.40
45	0.12	0.08	0.17	0.09	0.75	0.75	0.40	0.40
50	0.22	0.14	0.31	0.15	1.12	1.12	0.00	0.00
55	0.39	0.21	0.52	0.23	1.67	1.67	0.00	0.00
60	0.61	0.34	0.77	0.38	2.49	2.49	0.00	0.00
65	0.92	0.58	1.24	0.64	3.71	3.71	0.00	0.00
70	1.56	0.97	2.22	1.09	5.50	5.50	0.00	0.00

Salary Increases: Reported salary for at valuation date increased according to the rate table below, to current fiscal year and annually for each future year. Prior fiscal year salary is annualized for new members.

Summary of Rates: (continued) Shown below for selected ages:

	Rates (%)				
	Disability		**Retirement**		**Salary Increases**
Age	**Male**	**Female**	**Male**	**Female**	
20	0.04%	0.04%	0.00%	0.00%	7.75%
25	0.06	0.06	0.00	0.00	7.00
30	0.08	0.08	0.00	0.00	7.00
35	0.11	0.11	0.00	0.00	7.00
40	0.18	0.18	0.00	0.00	6.50
45	0.29	0.29	0.00	0.00	5.75
50	0.50	0.50	7.00	7.00	5.50
55	0.88	0.88	60.00	60.00	5.25
60	1.41	1.41	100.00	100.00	5.25
65	0.00	0.00	100.00	100.00	5.25
70	0.00	0.00	100.00	100.00	5.25

Changes in Actuarial Assumptions and Actuarial Cost Methods:

There have been no changes made to the actuarial assumptions since the prior valuation.

The only change in actuarial cost methods since the last valuation was a modification to the asset valuation method, effective with the July 1, 2007 valuation. Assets allocated to the Minnesota Post Retirement Investment Fund (MPRIF) must equal the Market Value of Assets as of the valuation date.

EXHIBIT VIII

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 trooper, conservation officers and certain crime bureau officers.

Contributions:

Effective Date	Employee Rate	Employer Rate
Current	9.10	13.60
July 1, 2008	9.80	14.60
July 1, 2009	10.40	15.60

Allowable Service: Service during which member contributions were deducted. Includes period receiving temporary Workers' Compensation.

Salary: Salaries excluding lump sum payments at separation.

Average Salary: Average of the five highest successive years of salary. Average Salary is based on all Allowable Service if less than five years.

Retirement:

Normal Retirement Benefit:

Age/Service Requirement: Age 55 and three years of Allowable Service.

Amount: 3.00% of Average Salary for each year of Allowable Service.

Early Retirement Benefit:

Age/Service Requirement: Age 50 and three years of Allowable Service.

Amount:	Normal Retirement Benefit based on Allowable Service and Average Salary at retirement reduced by 1/10% for each month that the member is under age 55**.**
Form of Payment:	Life annuity. Actuarially equivalent options are: 50% or 100% joint and survivor with bounce back feature without additional reduction.
Benefit Increases:	Benefits may be increased each January 1 depending on the investment performance of the Minnesota Post Retirement Investment Fund (MPRIF). A benefit recipient who has been receiving a benefit for at least 12 full months as of June 30 will receive a full increase. Benefit recipients receiving benefits for at least one full month but less than 12 full months will receive a partial increase. For members retired under laws in effect before June 1, 1973 receive an additional 6.00% supplement through July 1, 1994. For each of those years, the supplement increases by 6.00% of the total annuity, which includes both MPRIF and supplemental amounts. Thereafter, regular MPRIF increases apply. Members retired under laws in effect before June 1, 1973 receive an additional lump sum payment each year. In 1989, this lump sum payment is $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 will increase by the same percentage increase that is applied to regular annuities paid from MPRIF. Effective January 1, 2002, annual lump sum payment is divided by 12 and paid as a monthly life annuity in the annuity form elected.

Disability:

Occupational Disability Benefit:

Age/Service Requirement:	Member who cannot perform his duties because of a disability directly resulting from an act of duty.
Amount:	60.00% of Average Salary plus 3.00% of Average Salary for each year in excess of 20 years of Allowable Service (pro rata for completed months).

	Payments cease at age 65 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.
	If a member became disabled prior to July 1, 1997 but was not eligible to commence their benefit before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Non-Duty Disability Benefit:	
Age/Service Requirement:	At least one year of Allowable Service and disability not related to covered employment.
Amount:	Normal Retirement Benefit based on Allowable Service (minimum of 15 years) and Average Salary at disability without reduction for commencement before age 55.
	Payments cease at age 65 or earlier if disability ceases or death occurs. Benefits may be paid upon re-employment but salary plus benefit cannot exceed current salary of position held at time of disability.
	If a member became disabled prior to July 1, 1997 but was not eligible to commence their benefit before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Form of Payment:	Same as for retirement.
Benefit Increases:	Adjusted by MSRS to provide same increase as MPRIF.
Retirement After Disability:	
Age/Service Requirement:	Age 65 with continued disability.
Amount:	Optional annuity continues. Otherwise, a normal retirement annuity equal to the disability benefit paid, or an actuarially equivalent option.
Form of Payment:	Same as for retirement.
Benefit Increases:	Same as for retirement.

Death:

Surviving Spouse Benefit:

Age/Service Requirement:	Member who is active or receiving a disability benefit.
Amount:	50.00% of Annual Salary if member was active or occupational disability and either had less then three years of Allowable Service or was under age 55. Payment for life. Surviving spouse receives the 100% joint and survivor benefit commencing on the member's 55th birthday if member was active or a disability with three years of Allowable Service. A spouse who had been receiving the 50.00% benefit shall be entitled to the larger of the two. Payment for life. If a member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Benefit Increases:	Adjusted MSRS to provide same increase as MPRIF.

Surviving Dependent Children's Benefit:

Age/Service Requirement:	Member who is active or receiving a disability benefit. Child must be unmarried, under age 18 (or 23 if full-time student) and dependent upon the member.
Amount:	10.00% of Average Salary for each child and $20 per month prorated among all dependent children. Benefit must not be less than 50.00% nor exceed 70.00% of Average Salary. If a member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.

Refund of Contributions:

Age/Service Requirement:	Member dies before receiving any retirement benefits and survivor benefits are not payable.
Amount:	Member's contributions with 5.00% interest if death occurred before May 16, 1989, and 6.00% interest if death occurred on or after May 16, 1989.

Termination:	
<u>Refund of Contributions</u>:	
Age/Service Requirement:	Termination of state service.
Amount:	Member's contributions with 5.00% interest compounded annually if termination occurred before May 16, 1989 and 6.00% interest if termination occurred on or after May 16, 1989.
<u>Deferred Benefit</u>:	
Age/Service Requirement:	Three years of Allowable Service.
Amount:	Benefit computed under law in effect at termination and increased by the following annual percentage: (1) 0.00% before July 1, 1971; (2) 5.00% from July 1, 1971 to January 1, 1981; and (3) 3.00% thereafter until the annuity begins. Amount is payable as a normal or early retirement. If a member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Changes in Plan Provisions:	The only change in plan provisions since the prior valuation is the future employee and employer contribution rates previously stated.

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