Public Employees Police and Fire Fund

Actuarial Valuation and Review
as of July 1, 2004

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January 12, 2005

Ms. Mary Most Vanek
Public Employees Retirement Association of Minnesota
Public Employees Police and Fire Fund
60 Empire Drive, Suite 200
St. Paul, Minnesota 55103-2088

Dear Ms. Most Vanek:

We are pleased to submit this Actuarial Valuation and Review as of July 1, 2004. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2005 and analyzes the preceding year's experience.

The census and financial information on which our calculations were based was prepared by the Fund. 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.

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

Sincerely,

THE SEGAL COMPANY

By: ______________________________ ______________________________

Leslie L. Thompson, FSA, MAAA, EA	*Wally Malles, ASA, MAAA, EA*
Senior Vice President and Actuary	*Associate 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 Public Employees Retirement Association of Minnesota (Public Employees Police and Fire Fund) as of July 1, 2004. 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 Fund, as administered by the Fund;
- The characteristics of covered active participants, inactive vested participants, pensioners and beneficiaries as of July 1, 2004, provided by the Fund;
- The assets of the Fund as of June 30, 2004, 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 353 is equal to 15.50% of payroll compared to the required contribution rate under Chapter 356 of 22.05% of payroll. Therefore, the contribution deficiency is expected to be 6.55% of payroll or $38,924,723.
- The funded ratio based on the actuarial value of assets over the actuarial accrued liability as of July 1, 2004 is 101.16% compared to 107.35% as of July 1, 2003. This ratio is a measure of funding status, and its history is a measure of funding progress, and is the ratio required to be reported under GASB 25.
- As shown on page 4 of this report, the total unrecognized investment loss as of June 30, 2004 is $200,662,280. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience.
- There were no changes in plan provisions, actuarial assumptions or actuarial cost methods since the prior valuation. This is the first year that The Segal Company prepared the actuarial valuation of the Fund.

Summary of Key Valuation Results

	2004	2003
Contributions (% of payroll) for plan year beginning July 1:		
Statutory – Chapter 353	15.50%	15.50%
Required – Chapter 356	22.05%	19.52%
Sufficiency/(Deficiency)	-6.55%	-4.02%
Funding elements for plan year beginning July 1:		
Normal cost	$132,886,767	$128,469,000
Market value of assets	4,546,172,214	4,177,661,000
Actuarial value of assets (AVA)	4,746,834,494	4,713,606,000
Actuarial accrued liability (AAL)	4,692,190,387	4,390,953,000
Unfunded/(Overfunded) actuarial accrued liability	-54,644,107	-322,653,000
Funded ratios:		
Accrued Benefit Funded Ratio	104.40%	111.10%
Current assets (AVA)	$4,746,834,494	$4,713,606,000
Current benefit obligations	4,546,939,738	4,242,759,000
Projected Benefit Funded Ratio	86.81%	91.59%
Current and expected future assets	$5,349,550,221	$5,329,085,000
Current and expected future benefit obligations (Present Value of Benefits)	6,162,396,171	5,818,520,000
GASB 25/27 for plan year beginning July 1:		
Annual required employer contributions	$71,018,586	$35,424,000
Accrued Liability Funded Ratio (AVA/AAL)	101.16%	106.65%
Covered actual payroll	$551,266,068	$560,503,000
Demographic data for plan year beginning July 1:		
Number of pensioners and beneficiaries	6,632	6,208
Number of vested terminated participants	878	758
Number of other non-vested terminated participants	750	740
Number of active participants	10,055	9,948
Total projected payroll	$593,944,656	$582,688,000
Average projected payroll	$59,070	$58,573

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, B, and C.

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

CHART 1

Participant Population: 2002 – 2004

Year Ended June 30	Active Participants	Vested Terminated Participants*	Pensioners and Beneficiaries	Ratio of Non-Actives to Actives
2002	9,940	637	5,971	0.66
2003	9,948	758	6,208	0.70
2004	10,055	878	6,632	0.75

* *Excludes 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 10,055 active participants with an average age of 39.0, average years of service of 11.2 years and average projected payroll of $59,070. The 9,948 active participants in the prior valuation had an average age of 38.8, average service of 11.1 years and average projected payroll of $58,573.

Inactive Participants

In this year's valuation, there were 878 participants with a vested right to a deferred or immediate vested benefit.

In addition there were 750 other non-vested terminated participants entitled to a return of their 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, 2004

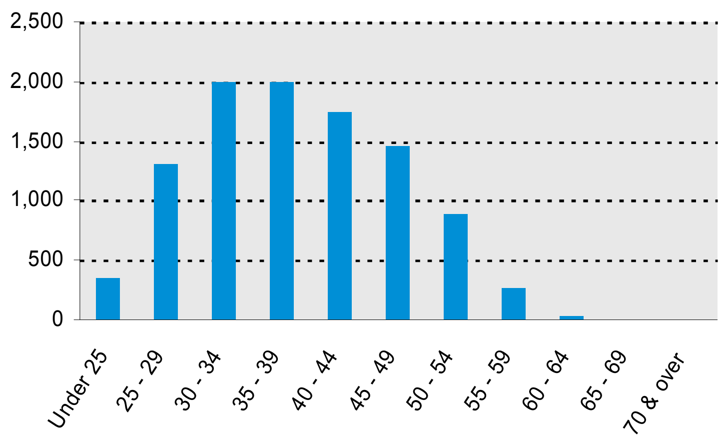
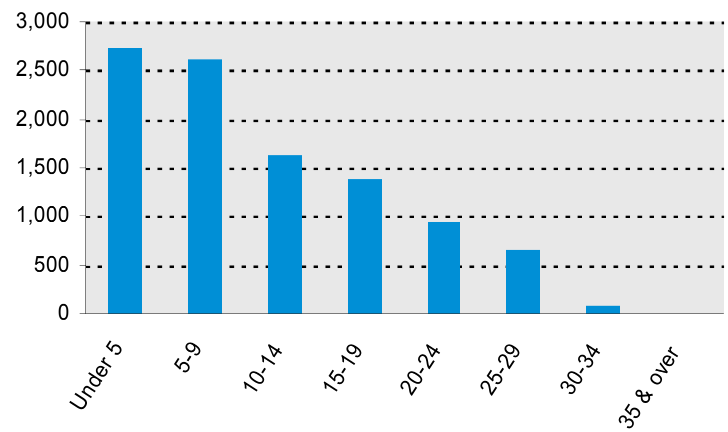


CHART 3

Distribution of Active Participants by Years of Service as of June 30, 2004



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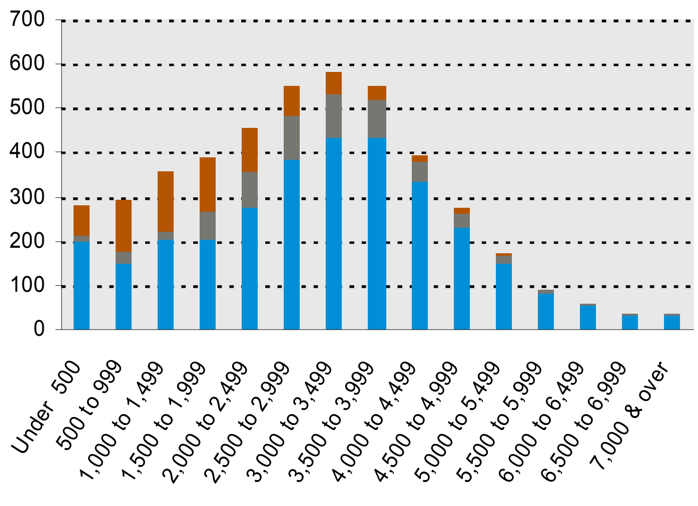
Pensioners and Beneficiaries

As of June 30, 2004, 5,247 pensioners (4,547 retired and 700 disabled participants) and 1,385 beneficiaries were receiving average monthly benefits of $3,001. For comparison, in the previous valuation, there were 4,995 pensioners (4,381 retired and 614 disabled participants) and 1,213 beneficiaries receiving average monthly benefits of $3,083.

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

CHART 4

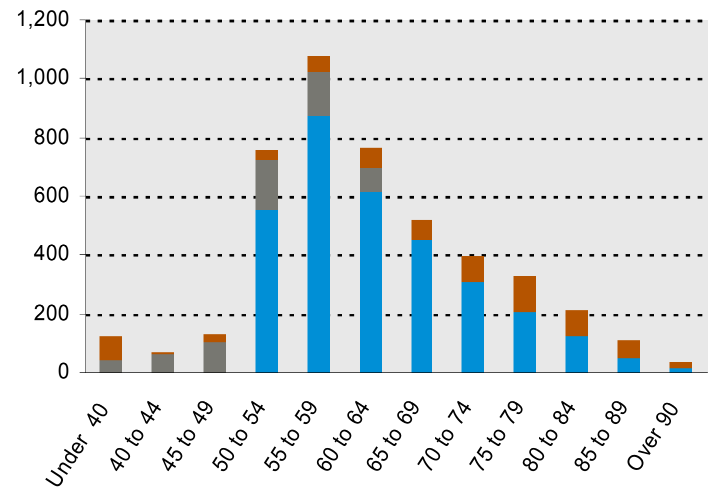
Distribution of Pensioners and Beneficiaries by Type and by Monthly Amount as of June 30, 2004



Beneficiary
Disability
Regular

CHART 5

Distribution of Pensioners and Beneficiaries by Type and by Age as of June 30, 2004



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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. The 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.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 6

Determination of Actuarial Value of Assets for Year Ended June 30, 2004

1.	Market value of assets available for benefits			$4,546,172,214
		Original Amount	% Not Recognized	
2.	Calculation of unrecognized return			
	(a) Year ended June 30, 2004	$181,199,900	80%	$144,959,920
	(b) Year ended June 30, 2003	-152,646,000	60%	-91,587,600
	(c) Year ended June 30, 2002	-428,953,000	40%	-171,581,200
	(d) Year ended June 30, 2001	-412,267,000	20%	-82,453,400
	(e) Total unrecognized return			-$200,662,280
3.	Actuarial value of assets ("Current Assets"): (1) – (2e)			$4,746,834,494

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 year ended June 30, 2004, the total loss is $248,914,079, including a loss of $166,752,878 from investments and a loss of $82,161,201 from all other sources. The net experience variation from individual sources other than investments was 1.75% 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, 2004

1.	Net gain/(loss) from investments	-$166,752,878
2.	Net gain/(loss) from other experience	-82,161,201
3.	Net experience gain/(loss): (1) + (2)	-$248,914,079

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 on an actuarially sound basis and in accordance with the GASB funding requirements. Section 4, Exhibit III presents a schedule of this information of 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

Category	Year Ended June 30 2004	 2003	Change From Prior Year
Active participants in valuation:			
Number	10,055	9,948	1.1%
Average age	39.0	38.8	N/A
Average service	11.2	11.1	N/A
Total projected payroll	$593,944,656	$582,688,000	1.9%
Average projected payroll	$59,070	$58,573	0.8%
Total active vested participants	8,536	8,317	2.6%
Vested terminated participants	878	758	15.8%
Retired participants:			
Number in pay status	4,547	4,381	3.8%
Average age	65.7	65.7	N/A
Average monthly benefit	$3,337	$3,385	-1.4%
Disabled participants:			
Number in pay status	700	614	14.0%
Average age	53.6	52.5	N/A
Average monthly benefit	$3,169	$3,337	-5.0%
Beneficiaries:			
Number in pay status	1,385	1,213	14.2%
Average age	73.9	74.5	N/A
Average monthly benefit	$1,815	$1,865	-2.7%
Other non-vested terminated participants	750	740	1.4%

EXHIBIT B

Participants in Active Service as of June 30, 2004
By Age, Years of Service, and Average Projected Payroll

		Years of Service							
Age	Total	Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35 & over
Under 25	348	348	- -	- -	- -	- -	- -	- -	- -
	$34,040	$34,040	- -	- -	- -	- -	- -	- -	- -
25 - 29	1,307	1,000	307	- -	- -	- -	- -	- -	- -
	48,590	45,905	$57,337	- -	- -	- -	- -	- -	- -
30 - 34	2,002	671	1,148	182	1	- -	- -	- -	- -
	55,424	45,811	59,715	$63,730	$68,062	- -	- -	- -	- -
35 - 39	1,990	365	638	736	251	- -	- -	- -	- -
	60,532	45,923	60,317	65,528	67,674	- -	- -	- -	- -
40 - 44	1,748	167	301	438	629	211	2	- -	- -
	64,269	46,356	59,086	66,038	68,331	$70,031	$67,246	- -	- -
45 - 49	1,467	85	121	180	317	485	278	1	- -
	66,119	43,288	58,271	61,369	66,752	70,574	71,081	$69,711	- -
50 - 54	887	48	75	60	131	200	316	57	- -
	66,358	41,054	58,459	59,012	65,428	69,155	71,500	69,616	- -
55 - 59	264	34	19	23	36	48	69	31	4
	63,522	50,674	58,024	58,372	53,750	64,575	72,611	73,813	$67,256
60 - 64	33	7	6	6	7	3	2	- -	2
	50,029	48,060	47,695	47,597	47,115	45,238	57,196	- -	81,435
65 - 69	8	1	- -	3	2	- -	- -	- -	2
	63,309	82,593	- -	50,029	68,780	- -	- -	- -	68,117
70 & over	1	1	- -	- -	- -	- -	- -	- -	- -
	47,999	47,999	- -	- -	- -	- -	- -	- -	- -
Total	10,055	2,727	2,615	1,628	1,374	947	667	89	8
	$59,070	$44,310	$59,368	$64,568	$67,080	$69,769	$71,385	$71,079	$71,016

EXHIBIT C
Reconciliation of Participant Data

	Active Participants	Vested Terminated Participants	Other Non-Vested Terminated Participants	Disableds	Retired Participants	Beneficiaries	Total
Number as of July 1, 2003	9,948	758	740	614	4,381	1,213	17,654
Changes	107	120	10	86	166	172	661
Number as of July 1, 2004	10,055	878	750	700	4,547	1,385	18,315

EXHIBIT D

Summary Statement of Income and Expenses on a Market Value Basis for Year Ended June 30, 2004

	Non-MPRIF Assets	MPRIF Reserve	Market Value
A. Assets available at beginning of period	$2,068,999,000	$2,108,662,000	$4,177,661,000
B. Operating revenues:			
1. Member contributions	$36,312,917	$0	$36,312,917
2. Employer contributions	52,769,621	0	52,769,621
3. MPRIF income	0	165,782,835	165,782,835
4. Net investment income			
(a) Interest and dividends	$58,102,490	$0	$58,102,490
(b) Net appreciation/(depreciation)	296,165,642	0	296,165,642
(c) Securities lending income	1,343,155	0	1,343,155
(d) Investment expenses	-5,359,190	0	-5,359,190
(e) Net subtotal	$350,252,097	$0	$350,252,097
5. Other	2,733,049	0	2,733,049
6. Total additions	$442,067,684	$165,782,835	$607,850,519
C. Operating expenses:			
1. Service retirements	$37,915,719	$199,526,481	$237,442,200
2. Refunds	643,958	0	643,958
3. Administrative expenses	712,122	0	712,122
4. Other	541,025	0	541,025
5. Total operating expenses	$39,812,824	$199,526,481	$239,339,305
D. Other changes in reserves:			
1. Annuities awarded	-$145,261,929	$145,261,929	$0
2. Mortality gain/(loss)	33,449,285	-33,449,285	0
3. Change in MPRIF assumptions	0	0	0
4. Total other changes	-$111,812,644	$111,812,644	$0
E. Assets available at end of period	$2,359,441,216	$2,186,730,998	$4,546,172,214
F. Determination of current year unrecognized asset return (UAR)			
1. Average balance:			
(a) Non-MPRIF Assets available at BOY: (A)			$2,068,999,000
(b) Non-MPRIF Assets available at EOY*: (E) – (D.2)			2,325,991,931
(c) Average balance: [(F.1(a)) + (F.1(b)) – (B.4(e)) – (B.5)]/2			2,021,002,893
2. Expected return: 8.50% x (F.1(c))			171,785,246
3. Actual return: (B.4(e)) + (B.5)			352,985,146
4. Current year UAR: (F.3) – (F.2)			$181,199,900

* *Before adjustment for MPRIF Mortality Gain / Loss.*

EXHIBIT E

Table of Financial Information for Year Ended June 30, 2004

	Market Value	Cost Value
Assets in trust		
Cash, equivalents, short-term securities	$71,880,126	$71,880,126
Fixed income	483,666,594	499,262,896
Equity	1,452,875,767	1,496,376,676
Equity in MPRIF	2,186,730,998	2,186,730,998
Invested securities lending collateral	456,990,031	456,990,031
SBI alternative	290,022,796	285,271,843
Total assets in trust	$4,942,166,312	$4,996,512,570
Assets receivable	$62,813,225	$62,813,225
Total assets	$5,004,979,537	$5,059,325,795
Amounts currently payable		
Securities lending collateral	-$456,990,031	-$456,990,031
Other	-1,817,292	-1,817,292
Total amounts currently payable	-$458,807,323	-$458,807,323
Assets available for benefits		
MPRIF reserves	$2,186,730,998	$2,186,730,998
Member reserves	342,111,832	342,111,832
Other non-MPRIF reserves	2,017,329,384	2,071,675,642
Net Assets at Market/Cost Value	$4,546,172,214	$4,600,518,472
Net Assets at Actuarial Value	$4,746,834,494	$4,746,834,494

EXHIBIT F

Development of the Fund Through June 30, 2004

Year Ended June 30	Employer Contributions	Employee Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
2002	$90,664,000	$33,801,000	$285,708,000	$647,000	$212,405,000	$4,707,255,000
2003	50,917,000	34,751,000	147,435,000	675,000	226,077,000	4,713,606,000
2004	52,769,621	36,312,917	182,944,236	712,122	238,086,158	4,746,834,494

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

EXHIBIT G

Development of Unfunded/(Overfunded) Actuarial Accrued Liability for Year Ended June 30, 2004

1. Unfunded/(Overfunded) actuarial accrued liability at beginning of year		-$322,653,000
2. Normal cost at beginning of year		128,469,000
3. Total contributions		89,082,538
4. Interest		-20,291,648
5. Expected unfunded/(overfunded) actuarial accrued liability (1) + (2) - (3) + (4)		-$303,558,186
6. Changes due to:		
(a) Salary increases	$17,760	
(b) Investments	166,752,878	
(c) MPRIF mortality	-33,449,285	
(d) Mortality of other benefit recipients	4,208	
(e) Other experience	115,588,518	
(f) Total changes		$248,914,079
7. Unfunded/(Overfunded) actuarial accrued liability at end of year		-$54,644,107

EXHIBIT H
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 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 I

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 1,385 beneficiaries in pay status)		6,632
2.	Participants inactive during year ended June 30, 2004 with vested rights		878
3.	Participants active during the year ended June 30, 2004		10,055
	Fully vested	8,536	
	Not vested	1,519	

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

1.	Normal cost		$129,382,469
2.	Present value of future benefits		6,162,396,171
3.	Present value of future normal costs		1,470,205,784
4.	Actuarial accrued liability		4,692,190,387
	Pensioners and beneficiaries	$2,626,053,420	
	Inactive participants with vested rights	97,925,902	
	Participants due refunds	1,109,234	
	Active participants	1,967,101,831	
5.	Actuarial value of assets ($4,546,172,214 at market value)		$4,746,834,494
6.	Unfunded actuarial accrued liability		-$54,644,107

EXHIBIT I (continued)

Summary of Actuarial Valuation Results

	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) Retirement benefits	$2,805,875,652	$1,097,485,170	$1,708,390,482
(b) Disability benefits	431,442,947	227,250,674	204,192,273
(c) Death benefits	65,162,897	37,405,106	27,757,791
(d) Withdrawal benefits	134,826,119	108,064,834	26,761,285
(e) Total	$3,437,307,615	$1,470,205,784	$1,967,101,831
2. Vested terminated participants	$97,925,902	$0	$97,925,902
3. Other non-vested terminated participants	1,109,234	0	1,109,234
4. Annuitants in MPRIF	2,186,730,998	0	2,186,730,998
5. Annuitants not in MPRIF	439,322,422	0	439,322,422
6. Total	$6,162,396,171	$1,470,205,784	$4,692,190,387
B. Determination of Unfunded Actuarial Accrued Liability			
1. Actuarial Accrued Liability			$4,692,190,387
2. Actuarial Value of Assets			4,746,834,494
3. Unfunded Actuarial Accrued Liability: (1) – (2)			-$54,644,107
C. Determination of Supplemental Contribution Rate			
1. Present value of future payrolls through the amortization date of June 30, 2034			$12,410,444,313
2. Supplemental contribution rate: (B.3) / (C.1)			-0.44%
D. Determination of GASB Amortization Rate			
1. Present value of future payrolls through the amortization date of June 30, 2034			$11,031,754,405
2. Supplemental contribution rate: (B.3) / (D.1)			-0.50%

EXHIBIT II
Actuarial Balance Sheet

		Non-Vested	Vested	Total
A.	Current Assets			$4,746,834,494
B.	Expected Future Assets			
	1. Present Value of Expected Future Statutory Supplemental Contributions			-$867,490,057
	2. Present Value of Future Normal Costs			1,470,205,784
	3. Total Expected Future Assets			$602,715,727
C.	Total Current and Expected Future Assets			$5,349,550,221
D.	Current Benefit Obligations	Non-Vested	Vested	Total
	1. Benefit recipients:			
	(a) Retirement annuities	$0	$2,039,974,822	$2,039,974,822
	(b) Disability benefits	0	318,904,081	318,904,081
	(c) Beneficiaries	0	267,174,517	267,174,517
	2. Vested terminated participants	0	97,925,902	97,925,902
	3. Other non-vested terminated participants	0	1,109,234	1,109,234
	4. Active participants	20,505,753	1,801,345,429	1,821,851,182
	5. Total Current Benefit Obligations	$20,505,753	$4,526,433,985	$4,546,939,738
E.	Expected Future Benefit Obligations			1,615,456,433
F.	Total Current and Expected Future Benefit Obligations - Present Value of Benefits: (D.5 + E)			$6,162,396,171
G.	Current Unfunded Actuarial Liability (D.5 - A)			-$199,894,756
H.	Current and Future Unfunded Actuarial Liability (F - C)			$812,845,950

EXHIBIT III

Supplementary Information Required by the GASB – Schedule of Employer Contributions

Year Ended June 30	Actuarially Required Contribution Rate[1] (a)	Actual Covered Payroll (b)	Actual Member Contributions (c)	Annual Required Employer Contributions [(a) x (b)] – (c) = (d)	Actual Employer Contributions[2] (e)	Percentage Contributed (e) / (d)
1991	17.56%	$238,230,000	$17,636,000	$24,197,000	$26,440,000	109.27%
1992	17.54%	239,158,000	19,217,000	22,731,000	28,766,000	126.55%
1993	18.60%	253,666,000	20,406,000	26,776,000	30,434,000	113.66%
1994	17.45%	277,566,000	21,806,000	26,629,000	32,536,000	122.18%
1995	17.28%	293,919,000	22,356,000	28,433,000	33,548,000	117.99%
1996	16.49%	316,189,000	24,065,000	28,075,000	36,066,000	128.46%
1997	15.11%	346,319,000	26,354,000	25,975,000	39,508,000	152.10%
1998	15.69%[3]	375,131,000	28,552,000	30,306,000	42,786,000	141.18%
1999	12.32%[3]	352,066,000	30,897,000	12,478,000	46,280,000	370.89%
2000	12.87%[3]	392,796,000	31,214,000	19,339,000	53,178,000	274.98%
2001	12.21%[3], [4], [5]	500,839,000	31,341,000	29,811,000	52,960,000	177.65%
2002	12.61%	522,153,000	33,801,000	32,042,000	90,664,000	282.95%
2003	12.52%[3], [5], [6]	560,503,000	34,751,000	35,424,000	50,917,000	143.74%
2004	19.47%[3], [5], [7]	551,266,068	36,312,917	71,018,586	52,769,621	74.30%
2005	21.99%[3]					

(1) Actuarially Required Contributions determined for years ended 1995, 1996, and 1997 did not comply with the parameters of the GASB Statement No. 25 since a one percent growth in covered population is assumed in the amortization calculation.

(2) Includes contributions from other sources (if applicable).

(3) Actuarially Required Contributions calculated according to parameters of GASB 25 with no assumption for growth of covered population.

(4) Actuarially Required Contribution Rate prior to change in Asset Valuation Method is 11.41%.

(5) Excludes amounts receivable from municipalities with positive amortizable bases.

(6) Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 12.33%.

(7) Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 15.36%.

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	$839,560,000	$794,295,000	-$45,265,000	105.70%	$238,230,000	-19.00%
07/01/1992	979,981,000	888,826,000	-91,155,000	110.26%	239,158,000	-38.11%
07/01/1993	1,118,342,000	1,009,226,000	-109,116,000	110.81%	253,666,000	-43.02%
07/01/1994	1,234,961,000	1,099,221,000	-135,740,000	112.35%	277,566,000	-48.90%
07/01/1995	1,385,901,000	1,196,795,000	-189,106,000	115.80%	293,919,000	-64.34%
07/01/1996	1,633,010,000	1,334,202,000	-298,808,000	122.40%	316,189,000	-94.50%
07/01/1997	1,974,635,000	1,556,483,000	-418,152,000	126.87%	346,319,000	-120.74%
07/01/1998	2,337,313,000	1,741,344,000	-595,969,000	134.22%	375,131,000	-158.87%
07/01/1999	3,679,551,000	3,004,637,000	-674,914,000	122.46%	352,066,000	-191.70%
07/01/2000	4,145,351,000	3,383,187,000	-762,164,000	122.53%	392,796,000	-194.04%
07/01/2001	4,472,041,000(1)	3,712,360,000	-759,681,000	120.46%	500,839,000	-151.68%
07/01/2002	4,672,679,000(1)	3,886,311,000	-786,368,000	120.23%	522,153,000	-150.60%
07/01/2003	4,683,115,000(1)	4,390,953,000	-292,162,000	106.65%	560,503,000	-52.12%
07/01/2004	4,746,834,494	4,692,190,387	-54,644,107	101.16%	551,266,068	-9.91%

(1) *Excludes amounts receivable from municipalities with positive amortizable bases.*

EXHIBIT V
Determination of Contribution Sufficiency

	July 1, 2004	
A. Statutory Contributions – Chapter 353	**Percent of Payroll**	**Dollar Amount**
1. Member Contributions	6.20%	$36,824,569
2. Employer Contributions	9.30%	55,236,853
3. Total	15.50%	$92,061,422
B. Required Contributions – Chapter 356		
1. Normal Cost		
(a) Retirement Benefits	16.74%	$99,439,927
(b) Disability Benefits	3.50%	20,786,804
(c) Survivors	0.58%	3,450,211
(d) Deferred Retirement Benefits	1.55%	9,209,825
(e) Total	22.37%	$132,886,767
2. Amortization of Supplemental Contribution UAAL	-0.44%	-2,613,356
3. Allowance for Expenses	0.12%	712,734
4. Total	22.05%	$130,986,145
C. Contribution Sufficiency (Deficiency) (A.3 – B.4)	-6.55%	-$38,924,723
D. Projected annual payroll for fiscal year beginning on the valuation date		$593,944,656

EXHIBIT VI

Supplementary Information Required by the GASB

Valuation date	July 1, 2004
Actuarial cost method	Entry Age Normal
Amortization method	Level percentage of payroll
Remaining amortization period	30 years remaining as of July 1, 2004
Asset valuation method	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	8.50% per annum (payment of earnings on retired reserves or excess of 6.00% accounted for by 6.00% post-retirement assumption)
Plan membership:	
Pensioners and beneficiaries receiving benefits	6,632
Terminated members entitled to, but not yet receiving benefits	878
Other non-vested terminated members	750
Active participants	10,055
Total	18,315

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 6.00% post-retirement assumption.	
Salary Increases:	Reported salary for prior fiscal year, with new hires annualized, increased to current fiscal year and annually for each future year according to the ultimate rate table below.	
Mortality Rates:		
Healthy Pre-Retirement:	Male:	1983 Group Annuity Mortality Table for males set back six years.
	Female:	1983 Group Annuity Mortality Table for females set back six years.
Healthy Post-Retirement:	Male:	1983 Group Annuity Mortality Table for males set back one year.
	Female:	1983 Group Annuity Mortality Table for females set back one year.
Disabled:	Male:	1965 RRB rates up to age 40. For ages 41 to 59, graded rates between 1965 RRB and the Healthy Post-Retirement Mortality Table. For ages 60 and later, the Healthy Post-Retirement Mortality Table.
	Female:	1965 RRB rates up to age 40. For ages 41 to 59, graded rates between 1965 RRB and the Healthy Post-Retirement Mortality Table. For ages 60 and later, the Healthy Post-Retirement Mortality Table.

Retirement Rates:	Rates as shown in table.
Withdrawal Rates:	Select and ultimate rates based on plan experience through June 30, 2002. Ultimate rates after the third year are shown in the rate table. Select rates are as follows: First Year 3.50% Second Year 3.50% Third Year 3.50%
Disability Rates:	Rates as shown in the 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.
Expenses:	Prior year expenses expressed as percentage of prior year payroll.
Return of Contributions:	All employees withdrawing after becoming eligible for a deferred benefit were assumed to take the larger of their contributions accumulated with interest or the value of their deferred benefit.
Percent Married:	85% of male members and 65% of female members are assumed to be married.
Age of Spouse:	Females are assumed to be four years younger than males.
Eligible Children:	Assume members have no children.
Special Consideration:	Married members assumed to elect subsidized joint and survivor form of annuity as follows:

	Males	Females
50% J & S option	40.00%	15.00%
100% J & S option	45.00%	15.00%

Actuarial Cost Method:	Entry Age Normal 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.
Asset Valuation Method:	On and after July 1, 2000, 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 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 6.0% 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 - (%)

Age	Death Male	Death Female	Withdrawal	Disability	Retirement	Ultimate Rate of Salary Increases
20	0.03%	0.01%	6.01%	0.11%	0.00	11.50%
25	0.04	0.02	3.24	0.13	0.00	9.50
30	0.04	0.02	1.90	0.16	0.00	8.00
35	0.06	0.03	1.46	0.19	0.00	7.00
40	0.08	0.04	1.26	0.29	0.00	6.00
45	0.11	0.06	0.91	0.54	0.00	5.50
50	0.19	0.09	0.50	1.04	10.00	5.25
55	0.35	0.15	0.11	2.03	30.00	5.25
60	0.57	0.23	0.00	0.00	25.00	5.25
65	0.84	0.38	0.00	0.00	50.00	5.25
70	1.39	0.64	0.00	0.00	100.00	5.25

Changes in Actuarial Assumptions and Actuarial Cost Methods: There have been no changes made to the actuarial assumptions or actuarial cost methods since the prior valuation.

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.

General:

Eligibility:	All full-time and certain part-time, police officers and fire fighters, who are not contributing to any other local retirement fund.
Contributions:	
Member:	6.20% of salary effective July 1, 1999.
Employer:	9.30% of salary effective July 1, 1999.
Allowable Service:	Police and fire service during which member contributions were deducted. May also include certain leaves of absence and military service.
Salary:	Includes amounts deducted for deferred compensation or supplemental retirement plans, net income from fees and sick leave payments funded by the employer. Excludes lump sum annual leave and sick leave payments and Workers' Compensation benefits.
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. Proportionate Retirement Annuity is available at age 65 and one year 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 date and a 0.10% reduction for each month the member is under age 55.
Form of Payment:	Life annuity with return on death of any balance of contributions over aggregate monthly payments. Actuarially equivalent options are: 25%, 50%, 75%, 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. Members retired under law in effect before July 1, 1973 receive an additional lump sum payment each year. In 1989, this lump sum payment is the greater of $25 times each full year of Allowable Service or the difference between $400 times each full year of Allowable Service and the sum of the benefits paid from any Minnesota public pension plan plus cash payments from the Social Security Administration for the preceding fiscal year July 1, 1988 through June 30, 1989. 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.

[*] Effective July 1, 1999. From July 1, 1996 through June 30, 1999, the reduction is 0.2% for each month the Member is under age 55. Prior to July 1, 1996, an actuarial reduction is used assuming augmentation of the normal benefit to age 55 at 3% per year.

Disability:

<u>*Duty Disability Benefit*</u>*:*

Age/Service Requirement:	Physically or mentally unable to perform duties as a police officer or fire fighter as a direct result of 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. The disability benefit is reduced to that amount which when added to Workers' Compensation and actual earnings, does not exceed salary or 125.00% of pay for an employee at same position. Payments change to retirement annuity at age 65. If a member became disabled prior to July 1, 1997 but did not commence their benefit before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in post-retirement interest rates from 5.00% to 6.00%.

<u>*Non-Duty Disability Benefits*</u>*:*

Age/Service Requirement:	Physically or mentally unable to perform duties as a police officer or fire fighter with one year of Allowable Service.
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 change to retirement annuity at age 65. If a member became disabled prior to July 1, 1997 but did not commence their benefit before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in post-retirement interest rates from 5.00% to 6.00%.
Benefit Increases:	Adjusted by PERA to provide same increase as MPRIF.

<u>*Retirement Benefits*</u>*:*

Age/Service Requirement:	Age 55.
Amount:	Any optional annuity continues. Otherwise, the larger of the disability benefit paid before age 55 or the normal retirement benefit available at age 55, or an actuarially equivalent optional annuity.

Form of Payment:	Same as for retirement.
Benefit Increases:	Same as for retirement.

Death:

Surviving Spouse Benefit:	
Age/Service Requirement:	Active or Disabled member with surviving spouse, married for at least one year unless death in the line of duty.
Amount:	50.00% of salary averaged over last six months. Benefit paid until spouse's death but no payments while spouse is remarried prior to July 1, 1991. If a member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Benefit Increases:	Adjusted by PERA to provide same increase as MPRIF.
Surviving Dependent Child Benefit:	
Age/Service Requirement:	Active or Disabled member with dependent child.
Amount:	10.00% of salary averaged over last six months for each child. Family benefit minimum (including spouse's benefit) of 50.00% of salary and maximum of 70.00% of salary. Benefits paid until child marries, dies, or attains age 18 (age 23 if full-time student). If a member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Surviving Spouse Optional Annuity:	
Age/Service Requirement:	Active or Disable member dies before age 55, benefits commence when member would have been age 55 or as early as age 50 if qualified for early retirement except that benefits commence immediately if member had 30 years of service.

Amount:	Survivor's payment of the 100% joint and survivor benefit the member could have elected if terminated. Alternatively, spouse may elect refund of deceased's contributions with interest if there are no dependent children. If a member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefits before July 1, 1997, the benefit payable is calculated under the laws in effect before July 1, 1997, and an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Benefit Increases:	Adjusted by PERA to provide same increase as MPRIF.

Termination:

Refund of Contributions:	
Age/Service Requirement:	Termination of public 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. A deferred annuity may be elected in lieu of a refund if three or more years of Allowable Service.
Deferred Annuity:	
Age/Service Requirement:	Three years of Allowable Service.
Amount:	Benefit computed under law in effect at termination and increased by the following percentage compounded annually: 0.00% before July 1, 1971; 5.00% from July 1, 1971 to January 1, 1981; and 3.00% thereafter until January of the year following attainment of age 55 and 5.00% thereafter until the annuity begins. Amount is payable at normal or early retirement. If a member terminated employment prior to July 1, 1997 but was not eligible to commence their pension before July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.

Changes in Plan Provisions:	There have been no changes in plan provisions since the prior valuation.