State Employees Retirement Fund

Actuarial Valuation and Review
as of July 1, 2004

SEGAL

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February 7, 2005

Mr. Dave Bergstrom
Minnesota State Retirement System
State Employees 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, 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 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.

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*

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SECTION 1

VALUATION SUMMARY

SECTION 2

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SECTION 3

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SECTION 4

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Purpose

This report has been prepared by The Segal Company to present a valuation of the Minnesota State Retirement System (State Employees Retirement 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 Retirement 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 352 is equal to 8.00% of payroll compared to the required contribution rate under Chapter 356 of 9.33% of payroll. Therefore, the contribution deficiency is expected to be 1.33% of payroll or $27,413,741.
- The actuarial accrued liability funded ratio based on the actuarial value of assets over the actuarial accrued liability as of July 1, 2004 is 100.08% compared to 99.06% 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 indicated on page 4 of this report, the total unrecognized investment loss as of June 30, 2004 is approximately $323 million. 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 352	8.00%	8.00%
Required – Chapter 356	9.33%	9.43%
Sufficiency/(Deficiency)	-1.33%	-1.43%
Funding elements for plan year beginning July 1:		
Normal cost	$188,614,832	$193,153,000
Market value of assets	7,562,021,093	6,883,753,000
Actuarial value of assets (AVA)	7,884,984,028	7,757,292,000
Actuarial accrued liability (AAL)	7,878,362,792	7,830,671,000
Unfunded/(Overfunded) actuarial accrued liability	-6,621,236	73,379,000
Funded ratios:		
Accrued Benefit Funded Ratio	101.78%	105.49%
Current assets (AVA)	$7,884,984,028	$7,757,292,000
Current benefit obligations	7,746,988,644	7,353,692,000
Projected Benefit Funded Ratio	94.61%	94.13%
Current and expected future assets	$8,972,089,575	$8,911,232,000
Current and expected future benefit obligations (Present Value of Benefits)	9,483,678,289	9,467,413,000
GASB 25/27 for plan year beginning July 1:		
Annual required employer contributions	$103,248,458	$83,782,000
Accrued Liability Funded Ratio (AVA/AAL)	100.08%	99.06%
Covered actual payroll	$1,965,546,000	$2,009,975,000
Demographic data for plan year beginning July 1:		
Number of pensioners and beneficiaries	22,654	21,454
Number of vested terminated participants	13,784	12,679
Number of other non-vested terminated participants	12,741	8,626
Number of active participants	46,899	48,136
Total projected payroll	$2,066,680,651	$2,138,858,000
Average projected payroll	44,067	44,434

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	49,099	11,939	20,805	0.67
2003	48,136	12,679	21,454	0.71
2004	46,899	13,784	22,654	0.78

* *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 46,899 active participants with an average age of 46.0, average years of service of 12.7 years and average projected payroll of $44,067. The 48,136 active participants in the prior valuation had an average age of 45.4, average service of 12.3 years and average projected payroll of $44,434.

Inactive Participants
In this year's valuation, there were 13,784 participants with a vested right to a deferred or immediate vested benefit.

In addition, there were 12,741 other non-vested terminated participants entitled to a refund 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

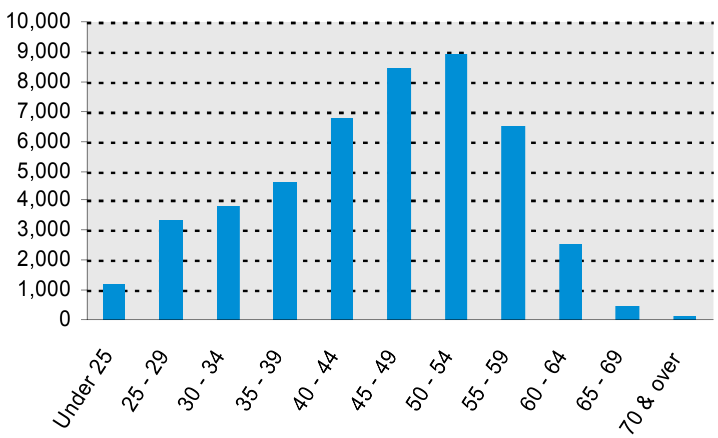
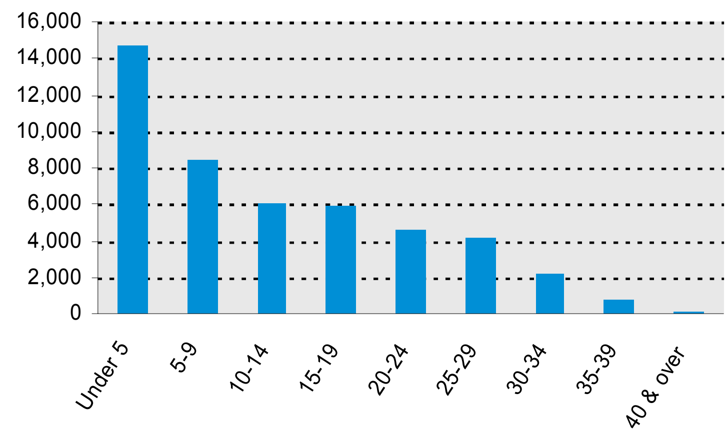


CHART 3

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



Pensioners and Beneficiaries

As of June 30, 2004, 20,069 pensioners (18,672 retired and 1,397 disabled participants) and 2,585 beneficiaries were receiving average monthly benefits of $1,232. For comparison, in the previous valuation, there were 19,049 pensioners (17,774 retired and 1,275 disabled participants) and 2,405 beneficiaries receiving average monthly benefits of $1,199.

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

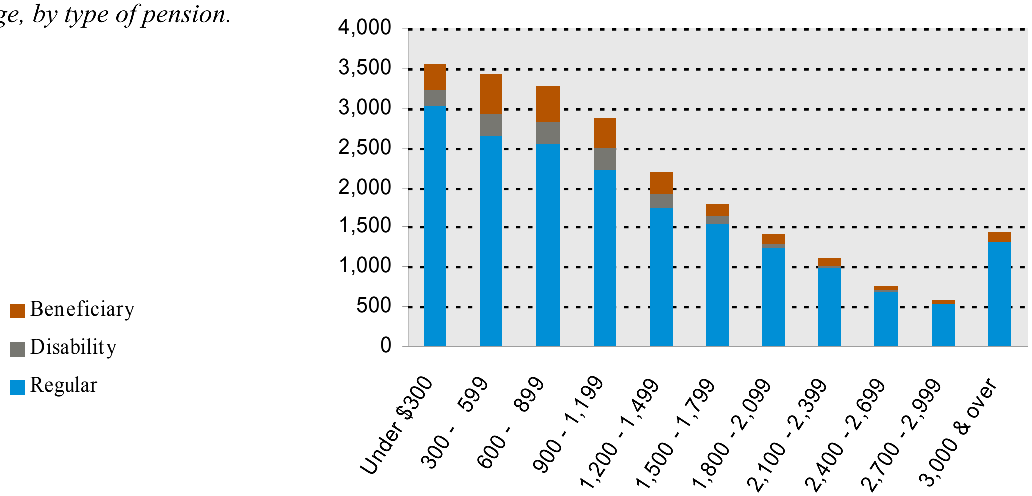
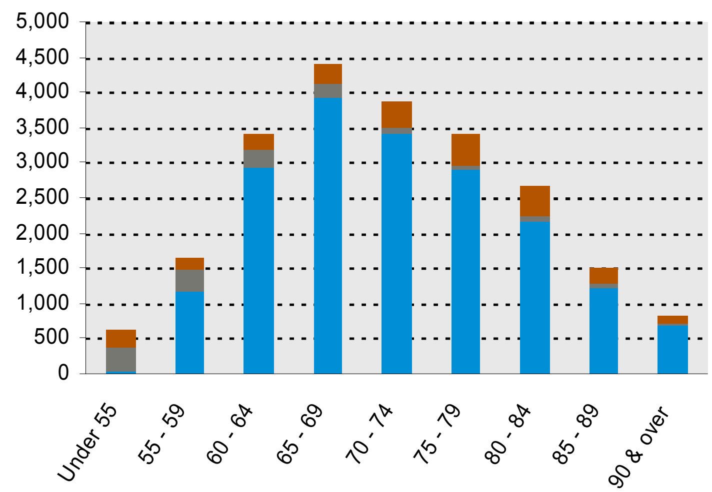


CHART 5

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



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			$7,562,021,093
		Original Amount	% Not Recognized	
2.	Calculation of unrecognized return			
	(a) Year ended June 30, 2004	$298,717,581	80%	$238,974,065
	(b) Year ended June 30, 2003	-239,289,000	60%	-143,573,400
	(c) Year ended June 30, 2002	-685,390,000	40%	-274,156,000
	(d) Year ended June 30, 2001	-721,038,000	20%	-144,207,600
	(e) Total unrecognized return			-$322,962,935
3.	Actuarial value of assets ("Current Assets"): (1) – (2e)			$7,884,984,028

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, 2004 the total gain is $128,253,312, including a loss of $274,167,788 from investments and a gain of $402,421,100 from all other sources. The net experience variation from individual sources other than investments was 5.11% 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	-$274,167,788
2.	Net gain/(loss) from other experience	402,421,100
3.	Net experience gain/(loss): (1) + (2)	$128,253,312

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 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

Category	Year Ended June 30: 2004	2003	Change From Prior Year
Active participants in valuation:			
Number	46,899	48,136	-2.6%
Average age	46.0	45.4	N/A
Average service	12.7	12.3	N/A
Total projected payroll	$2,066,680,651	$2,138,858,000	-3.4%
Average projected payroll	44,067	44,434	-0.8%
Total active vested participants	38,182	37,113	2.9%
Vested terminated participants	13,784	12,679	8.7%
Retired participants:			
Number in pay status	18,672	17,774	5.1%
Average age	72.1	72.4	N/A
Average monthly benefit	$1,273	$1,235	3.1%
Disabled participants:			
Number in pay status	1,397	1,275	9.6%
Average age	61.3	61.5	N/A
Average monthly benefit	$912	$904	0.9%
Beneficiaries:			
Number in pay status	2,585	2,405	7.5%
Average age	71.9	71.8	N/A
Average monthly benefit	$1,107	$1,094	1.2%
Other non-vested terminated participants	12,741	8,626	47.7%

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	35-39	40 & over
Under 25	1,211	1,188	23	- -	- -	- -	- -	- -	- -	- -
	$24,479	$24,332	$32,108	- -	- -	- -	- -	- -	- -	- -
25 - 29	3,337	2,812	515	10	- -	- -	- -	- -	- -	- -
	32,119	30,987	38,171	$38,592	- -	- -	- -	- -	- -	- -
30 - 34	3,821	2,302	1,273	233	13	- -	- -	- -	- -	- -
	36,840	33,335	41,893	43,854	$36,785	- -	- -	- -	- -	- -
35 - 39	4,663	1,840	1,469	908	404	42	- -	- -	- -	- -
	41,383	35,120	43,625	47,766	47,144	$43,909	- -	- -	- -	- -
40 - 44	6,752	1,915	1,406	1,282	1,267	789	93	- -	- -	- -
	44,488	35,667	45,084	48,562	51,040	47,699	$44,435	- -	- -	- -
45 - 49	8,437	1,729	1,406	1,266	1,507	1,381	1,029	119	- -	- -
	46,453	35,847	44,671	48,903	51,520	51,191	49,671	$48,558	- -	- -
50 - 54	8,962	1,472	1,162	1,139	1,332	1,258	1,589	914	96	- -
	48,281	35,938	44,557	48,754	51,211	51,537	55,069	51,557	$50,176	- -
55 - 59	6,543	834	758	770	945	783	1,093	931	410	19
	49,679	35,100	44,967	48,587	48,826	50,466	55,114	58,361	56,000	$57,512
60 - 64	2,535	404	302	357	373	328	323	184	189	75
	48,009	32,689	42,757	49,185	49,247	48,116	52,943	59,626	59,721	60,207
65 - 69	475	122	66	80	67	49	39	24	16	12
	41,036	25,714	39,012	48,391	45,683	45,752	47,309	54,069	49,439	56,040
70 & over	163	66	17	20	15	14	12	6	2	11
	30,006	17,405	19,270	38,844	36,621	37,949	45,032	43,878	53,198	58,828
Total	46,899	14,684	8,397	6,065	5,923	4,644	4,178	2,178	713	117
	$44,067	$33,189	$43,549	$48,358	$50,341	$50,189	$53,249	$54,990	$56,047	$59,212

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	48,136	12,679	8,626	1,275	17,774	2,405	90,895
Changes	-1,237	1,105	4,115	122	898	180	5,183
Number as of July 1, 2004	46,899	13,784	12,741	1,397	18,672	2,585	96,078

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			$3,767,761,000	$3,115,992,000	$6,883,753,000
B.	Operating revenues:					
	1.	Member contributions		$82,102,530	$0	$82,102,530
	2.	Employer contributions		78,621,829	0	78,621,829
	3.	MPRIF income		0	251,011,171	251,011,171
	4.	Net investment income				
		(a)	Interest and dividends	$766,075,822	$0	$766,075,822
		(b)	Net appreciation/(depreciation)	-156,474,336	0	-156,474,336
		(c)	Investment expenses	-5,253,228	0	-5,253,228
		(d)	Net subtotal	$604,348,258	$0	$604,348,258
	5.	Other		7,875,908	0	7,875,908
	6.	Total additions		$772,948,525	$251,011,171	$1,023,959,696
C.	Operating expenses:					
	1.	Benefits		$0	$328,545,403	$328,545,403
	2.	Refunds		10,777,121	0	10,777,121
	3.	Administrative expenses		4,673,250	0	4,673,250
	4.	Other		1,695,829	0	1,695,829
	5.	Total operating expenses		$17,146,200	$328,545,403	$345,691,603
D.	Other changes in reserves:					
	1.	Annuities awarded		-$302,474,623	$302,474,623	$0
	2.	Mortality gain/(loss)		53,709,413	-53,709,413	0
	3.	Change in MPRIF assumptions		0	0	0
	4.	Total other changes		-$248,765,210	$248,765,210	$0
E.	Assets available at end of period			$4,274,798,115	$3,287,222,978	$7,562,021,093
F.	Determination of current year unrecognized asset return (UAR)					
	1.	Average Balance:				
		(a)	Non-MPRIF assets available at BOY: (A)			$3,767,761,000
		(b)	Non-MPRIF assets available at EOY*: (E) – (D.2)			4,221,088,702
		(c)	Average balance: [(F.1.a) + (F.1.b) – (B.4.d) – (B.5)]/2			3,688,312,768
	2.	Expected return: 8.50% x (F.1.c)				313,506,585
	3.	Actual return: (B.4.d) + (B.5)				612,224,166
	4.	Current year UAR: (F.3) – (F.2)				$298,717,581

**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	$169,560,069	$169,560,069
Fixed income	878,163,587	905,125,459
Equity	3,162,923,681	3,166,754,999
Equity in MPRIF	3,287,222,978	3,287,222,978
Other	6,207,389	6,207,389
Total assets in trust	$7,504,077,704	$7,534,870,894
Assets receivable	$66,003,570	$66,003,570
Total assets	$7,570,081,274	$7,600,874,464
Amounts currently payable	-$8,060,181	-$8,060,181
Assets available for benefits		
MPRIF reserves	$3,287,222,978	$3,287,222,978
Member reserves	888,027,811	888,027,811
Other non-MPRIF reserves	3,386,770,304	3,417,563,494
Net assets at Market/Cost Value	$7,562,021,093	$7,592,814,283
Net assets at Actuarial Value	$7,884,984,028	$7,884,984,028

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
2003	$80,399,000	$83,850,000	$243,874,000	$4,191,000	$319,668,000	$7,757,292,000
2004	78,621,829	82,102,530	310,963,443	4,673,250	339,322,524	7,884,984,028

** 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		$73,379,000
2.	Normal cost at beginning of year		193,153,000
3.	Total contributions		160,724,359
4.	Interest		15,824,435
5.	Expected unfunded/(overfunded) actuarial accrued liability (1) + (2) – (3) + (4)		$121,632,076
6.	Changes due to:		
	(a) Investments	$274,167,788	
	(b) MPRIF mortality	-53,709,413	
	(c) Other experience	-348,711,687	
	(d) Total changes		-128,253,312
7.	Unfunded/(Overfunded) actuarial accrued liability at end of year		-$6,621,236

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 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 I

Special Groups – Military Affairs Calculation

Section 352.85 of Chapter 352 of Minnesota Statutes provides that certain military affairs personnel may retire, with an unreduced benefit, at age 60. In addition, they may receive disability benefits upon being found disqualified for retention in active military duty. To fund these special benefits, employees and employer contribute an extra 1.60% of payroll.

To recognize the effect of the unreduced early retirement benefit available at age 60, we have assumed that all military affairs personnel will retire at age 60, or if over age 60, one year from the valuation date.

	For Year Ended June 30, 2004
1. Number of active participants	3
2. Projected annual earnings	$41,120
3. Normal cost	
(a) Dollar amount	$4,718
(b) Percent of payroll	11.47%

EXHIBIT I (continued)

Special Groups – Pilots Calculation

Section 352.86 of Chapter 352 of Minnesota Statutes provides that certain transportation department pilots may retire with an unreduced benefit at age 62. In addition, they may receive disability benefits upon being found disqualified for retention as pilots. To fund these special benefits, employees and employer contribute an extra 1.60% of payroll.

To recognize the effect of the unreduced early retirement benefit available at age 62, we have assumed that all pilots will retire at age 62, or if over age 62, one year from the valuation date.

	For Year Ended June 30, 2004
1. Number of active participants	4
2. Projected annual earnings	$315,002
3. Normal cost	
(a) Dollar amount	$44,996
(b) Percent of payroll	14.28%

EXHIBIT I (continued)

Special Groups – Fire Marshals Calculation

Section 352.87 of Chapter 352 of Minnesota Statutes provides that deputy state fire marshals may retire with an unreduced benefit (with respect to service after July 1, 1999) at age 55. Credited Service after July 1, 1999 accrues retirement benefits at a rate of 2.00% per year, and disability benefits are based on a minimum of 15 years of service (20 years if duty related.) To fund these special benefits, employees contribute an extra 2.78% of payroll and employers contribute an extra 4.20% of payroll.

To recognize the effect of the unreduced early retirement benefit available at age 55, we have assumed that all fire marshals will retire in accordance with the retirement assumptions which apply to the members of the Correctional Employees Retirement Fund.

	For Year Ended June 30, 2004
1. Number of active participants	10
2. Projected annual earnings	$562,961
3. Normal cost for post July 1, 1999 benefits	
(a) Dollar amount	$91,864
(b) Percent of payroll	16.32%

EXHIBIT I (continued)

Special Groups – Unclassified Plan Contingent Liability Calculation

Section 352D.02 of Chapter 352D of Minnesota Statutes provides that employees credited with employee shares in the unclassified program may elect to terminate participation in the unclassified plan and be covered by the regular plan prior to termination of covered employment.

To recognize the effect of the option to elect coverage under the regular plan, we have assumed that all eligible Unclassified Plan members will elect coverage under the regular plan if such election provides the member with a greater economic present value than the accumulated contribution balance under the Unclassified Plan. The liabilities were measured using the actuarial assumptions which are applied to the State Employees Retirement Fund.

	For Year Ended June 30, 2004
1. Number of active participants	1,908
2. Account balances for active participants	$158,183,616
3. Accrued liability for active participants	171,242,505
4. Number of inactive participants	1,563
5. Account balances for inactive participants	$94,177,723
6. Net assets held in trust for Unclassified Plan participants	259,861,273
7. Contingent liability: (3) + (5) – (6)	5,558,955
8. Projected annual earnings for active participants	119,137,577
9. Normal cost	
(a) Dollar amount	$15,211,551
(b) Percent of payroll	12.77%

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 2,585 beneficiaries in pay status)		22,654
2.	Participants inactive during year ended June 30, 2004 with vested rights		13,784
3.	Participants active during the year ended June 30, 2004		46,899
	Fully vested	38,182	
	Not vested	8,717	

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

1.	Normal cost		$188,614,832
2.	Present value of future benefits		9,483,678,289
3.	Present value of future normal costs		1,605,315,497
4.	Actuarial accrued liability		7,878,362,792
	Pensioners and beneficiaries	$3,287,222,978	
	Inactive participants with vested rights	901,477,604	
	Participants due refunds	20,921,989	
	Active participants	3,663,181,266	
	Unclassified	5,558,955	
5.	Actuarial value of assets ($7,562,021,093 at market value)		7,884,984,028
6.	Unfunded actuarial accrued liability		-$6,621,236

**Does not include the Special Groups.*

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) Death benefits	$147,439,452	$43,087,472	$104,351,980
(b) Disability benefits	206,067,656	84,195,916	121,871,740
(c) Withdrawal benefits	368,566,452	195,103,278	173,463,174
(d) Retirement benefits	4,511,930,612	1,170,272,384	3,341,658,228
(e) Refunds	34,492,591	112,656,447	- 78,163,856
(f) Total	$5,268,496,763	$1,605,315,497	$3,663,181,266
2. Vested terminated participants	$901,477,604	$0	$901,477,604
3. Other non-vested terminated participants	20,921,989	0	20,921,989
4. Annuitants in MPRIF	3,287,222,978	0	3,287,222,978
5. Annuitants not in MPRIF	0	0	0
6. Contingent actuarial accrued liability - Unclassified	5,558,955	0	5,558,955
7. Total	$9,483,678,289	$1,605,315,497	$7,878,362,792
B. Determination of Unfunded Actuarial Accrued Liability			
1. Actuarial accrued liability			$7,878,362,792
2. Actuarial value of assets			7,884,984,028
3. Unfunded actuarial accrued liability: (1) – (2)			-$6,621,236
C. Determination of Supplemental Contribution Rate			
1. Present value of future payrolls through the amortization date of July 1, 2034			$38,385,922,231
2. Supplemental contribution rate: (B.3) / (C.1)			-0.02%

EXHIBIT II
Actuarial Balance Sheet

A.	Current Assets				$7,884,984,028
B.	Expected Future Assets				
	1. Present Value of Expected Future Statutory Supplemental Contributions				-$518,209,950
	2. Present Value of Future Normal Costs				1,605,315,497
	3. Total Expected Future Assets				$1,087,105,547
C.	Total Current and Expected Future Assets				$8,972,089,575
D.	Current Benefit Obligations		**Non-Vested**	**Vested**	**Total**
	1. Benefit recipients:				
	(a) Retirement annuities		$0	$2,809,915,112	$2,809,915,112
	(b) Disability benefits		0	164,341,324	164,341,324
	(c) Beneficiaries		0	312,966,542	312,966,542
	2. Vested terminated participants		0	901,477,604	901,477,604
	3. Other non-vested terminated participants		0	20,921,989	20,921,989
	4. Active participants		40,447,885	3,496,918,188	3,537,366,073
	5. Total Current Benefit Obligations		$40,447,885	$7,706,540,759	$7,746,988,644
E.	Expected Future Benefit Obligations				1,736,689,645
F.	Total Current and Expected Future Benefit Obligations - Present Value of Benefits: (D.5 + E)				$9,483,678,289
G.	Current Unfunded Actuarial Liability (D.5 - A)				-$137,995,384
H.	Current and Future Unfunded Actuarial Liability (F - C)				$511,588,714

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	8.17%	$1,370,964,000	$56,895,000	$55,113,000	$57,986,000	105.21%
1992	7.86%	1,409,108,000	58,478,000	52,278,000	59,244,000	113.33%
1993	8.27%	1,482,005,000	59,132,000	63,430,000	58,982,000	92.99%
1994	8.93%	1,536,978,000	62,555,000	74,697,000	60,741,000	81.32%
1995	9.15%	1,514,177,000	61,627,000	76,920,000	63,161,000	82.11%
1996	8.05%	1,560,369,000	63,507,000	62,103,000	65,557,000	105.56%
1997	7.21%	1,568,747,000	63,848,000	49,259,000	66,568,000	135.14%
1998	7.13%	1,557,880,000	62,901,000	48,176,000	62,315,000	129.35%
1999	6.48%	1,649,469,000	66,823,000	40,063,000	65,979,000	164.69%
2000	6.12%	1,733,054,000	70,378,000	35,685,000	69,322,000	194.26%
2001	7.12%[2]	1,834,042,000	74,364,000	56,220,000	73,362,000	130.49%
2002	6.79%	1,915,350,000	79,487,000	50,565,000	76,614,000	151.52%
2003	8.34%[3]	2,009,975,000	83,850,000	83,782,000	80,399,000	95.96%
2004	9.43%	1,965,546,000	82,102,530	103,248,458	78,621,829	76.15%
2005	9.33%					

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

(2) *Actuarially Required Contribution Rate prior to change in Actuarial Assumptions and Asset Valuation Method is 5.72%.*

(3) *Actuarially Required Contribution Rate prior to change in Actuarial Assumptions is 7.22%.*

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	$2,304,311,000	$2,883,603,000	$579,292,000	79.91%	$1,370,964,000	42.25%
07/01/1992	2,613,472,000	3,125,299,000	511,827,000	83.62%	1,409,108,000	36.32%
07/01/1993	2,905,578,000	3,563,492,000	657,914,000	81.54%	1,482,005,000	44.39%
07/01/1994	3,158,068,000	3,876,584,000	718,516,000	81.47%	1,536,978,000	46.75%
07/01/1995	3,462,098,000	3,795,926,000	333,828,000	91.21%	1,514,177,000	22.05%
07/01/1996	3,975,832,000	4,087,273,000	111,441,000	97.27%	1,560,369,000	7.14%
07/01/1997	4,664,519,000	4,519,542,000	-144,977,000	103.21%	1,568,747,000	-9.24%
07/01/1998	5,390,526,000	5,005,165,000	-385,361,000	107.70%	1,557,880,000	-24.74%
07/01/1999	5,968,692,000	5,464,207,000	-504,485,000	109.23%	1,649,469,000	-30.58%
07/01/2000	6,744,165,000	6,105,703,000	-638,462,000	110.46%	1,733,054,000	-36.84%
07/01/2001	7,366,673,000	6,573,193,000	-793,480,000	112.07%	1,834,042,000	-43.26%
07/01/2002	7,673,028,000	7,340,397,000	-332,631,000	104.53%	1,915,350,000	-17.37%
07/01/2003	7,757,292,000	7,830,671,000	73,379,000	99.06%	2,009,975,000	3.65%
07/01/2004	7,884,984,028	7,878,362,792	-6,621,236	100.08%	1,965,546,000	-0.34%

EXHIBIT V
Determination of Contribution Sufficiency

		July 1, 2004	
A.	**Statutory Contributions – Chapter 352**	**Percent of Payroll**	**Dollar Amount**
1.	Member Contributions	4.00%	$82,667,226
2.	Employer Contributions	4.00%	82,667,226
3.	Total	8.00%	$165,334,452
B.	**Required Contributions – Chapter 356**		
1.	Normal Cost		
	(a) Retirement Benefits	6.85%	$141,578,242
	(b) Disability Benefits	0.45%	9,293,234
	(c) Survivors	0.23%	4,727,264
	(d) Deferred Retirement Benefits	1.00%	20,647,848
	(e) Refunds	0.60%	12,368,244
	(f) Total	9.13%	$188,614,832
2.	Amortization of Supplemental Contribution UAAL	-0.02%	-413,336
3.	Allowance for Expenses	0.22%	4,546,697
4.	Total	9.33%	$192,748,193
C.	**Contribution Sufficiency (Deficiency) (A.3 – B.4)**	-1.33%	-$27,413,741
D.	**Projected annual payroll for fiscal year beginning on the valuation date**		$2,066,680,651

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 on earnings on retired reserves in excess of 6.00% accounted for by 6.00% post-retirement assumption)
Plan membership:	
Pensioners and beneficiaries receiving benefits	22,654
Terminated participants entitled to, but not yet receiving benefits	13,784
Other non-vested terminated participants due a refund of contributions	12,741
Active participants	46,899
Total	96,078

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 assumptions.	
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 on pages 21 and 22. During a 10-year select period, 0.30% x (10-T) where T is completed years of service is added to the ultimate rate.	
Mortality Rates:		
Healthy Pre-Retirement:	Male:	1983 Group Annuity Mortality Table for males setback 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 setback two years.
	Female:	1983 Group Annuity Mortality Table for females setback one year.
Disabled:	Male:	1965 RRB rates through age 54. For ages 55 to 64, graded rates between 1965 RRB rates and the Healthy Post-Retirement mortality table. For ages 65 and later, the Healthy Post-Retirement mortality table.
	Female:	1965 RRB rates through age 54. For ages 55 to 64, graded rates between 1965 RRB rates and the Healthy Post-Retirement mortality table. For ages 65 and later, the Healthy Post-Retirement mortality table.

Retirement Rates:	Graded rates beginning at age 55 as shown in rate table. Members who have attained the highest assumed retirement age will retire in one year.
Withdrawal Rates:	Select and ultimate rates based on recent plan experience. Ultimate rates after the third year are shown in rate table. Select rates are as follows:

	First Year	Second Year	Third Year
Males	0.45	0.14	0.09
Females	0.48	0.15	0.10

Disability:	Rates as shown in rate table.
Allowance for Combined Service Annuity:	Liabilities for active members are increased by 1.20% and liabilities for former members are increased by 40.00% to account for the effect of some participants having eligibility for a Combined Service Annuity.
Expenses:	Prior year administration 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 actuarial value of their deferred benefit.
Percent Married:	85% of members are assumed to be married.
Age of Spouse:	Females are assumed to be three years younger than males.
Special Consideration:	Married members assumed to elect subsidized joint and survivor form of annuity as follows:

Males -	20% elect 50% J&S option
	50% elect 100% J&S option
Females -	10% elect 50% J&S option
	15% 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.
Asset Valuation Method:	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(%)								
	Pre-Retirement Death		Withdrawal		Disability		Retirement		
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Rule of 90 Eligible**	**Other**	**Salary Increases**
20	0.03%	0.02%	6.90%	8.55%	0.01%	0.01%	0.00%	0.00%	6.75%
25	0.04	0.02	5.90	7.80	0.01	0.01	0.00	0.00	6.75
30	0.05	0.03	4.90	7.05	0.01	0.01	0.00	0.00	6.75
35	0.06	0.04	3.90	6.30	0.03	0.03	0.00	0.00	6.75
40	0.09	0.06	3.20	5.55	0.08	0.08	0.00	0.00	6.75
45	0.12	0.08	2.70	4.80	0.13	0.13	0.00	0.00	6.45
50	0.22	0.14	2.20	3.90	0.24	0.24	0.00	0.00	5.95
55	0.39	0.21	0.00	0.00	0.42	0.36	25.00	5.00	5.45
60	0.61	0.34	0.00	0.00	0.65	0.52	25.00	10.00	5.25
65	0.92	0.58	0.00	0.00	0.00	0.00	45.00	45.00	5.25
70	1.56	0.97	0.00	0.00	0.00	0.00	30.00	30.00	5.25

Changes in Actuarial Assumptions and Actuarial Cost Methods: There have been no changes in 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.

Plan Year:	July 1 through June 30
Eligibility:	State employees, non-academic staff of the University of Minnesota and employees of certain Metro level governmental units, unless excluded by law.
Contributions:	
Member:	4.00% of salary.
Employer:	4.00% of salary.
Allowable Service:	Service during which member contributions were made. May also include certain leaves of absence, military service and periods while temporary Worker's Compensation is paid. Excludes lump sum vacation pay at termination.
Salary:	Includes wages, allowances and fees. Excludes lump sum payments at separation, employer contributions to deferred compensation and tax-sheltered annuity plans and benevolent vacation and sick leave donation programs.
Retirement:	
Normal Retirement Benefit:	
Age/Service Requirement:	First hired before July 1, 1989: (a) Age 65 and three years of Allowable Service. (b) Proportionate Retirement Annuity is available at age 65 and one year of Allowable Service.

	First hired after June 30, 1989:
	(a) The greater of age 65 or the age eligible for full Social Security retirement benefits (but not higher than age 66) and three years of Allowable Service.
	(b) Proportionate Retirement Annuity is available at normal retirement age and one year of Allowable Service.
Amount:	1.70% of Average Salary for each year of Allowable Service.
<u>Early Retirement Benefit</u>:	
Age/Service Requirement:	First hired before July 1, 1989:
	(a) Age 55 and three years of Allowable Service.
	(b) Any age with 30 years of Allowable Service.
	(c) Rule of 90: Age plus Allowable Service totals 90.
	First hired after June 30, 1989:
	Age 55 with three years of Allowable Service.
Amount:	First hired before July 1, 1989:
	The greater of (a) or (b):
	(a) 1.20% of Average Salary for each of the first 10 years of Allowable Service and 1.70% of Average Salary for each subsequent year with reduction of 0.25% for each month the member is under age 65 at time of retirement or age 62 if 30 years of Allowable Service. No reduction if age plus years of Allowable Service totals 90.
	(b) 1.70% of Average Salary for each year of Allowable Service assuming augmentation to age 65 at 3.00% per year and actuarial reduction for each month the member is under age 65.
	First hired after June 30, 1989:
	1.70% of Average Salary for each year of Allowable Service assuming augmentation to the age eligible for full Social Security retirement benefit (but not higher than age 66) at 3.00% per year and actuarial reduction for each month the member is under the Social Security retirement age (but not higher than age 66).

Form of Payment:	Life annuity with return on death of any balance of contributions over aggregate monthly payments. Actuarially equivalent options are: 50% or 100% joint and survivor with bounce back feature without additional reduction. 15 year certain and life thereafter.
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 laws 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 $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:

Disability Benefit:	
Age/Service Requirement:	Total and permanent disability before normal retirement age with three years of Allowable Service.
Amount:	Normal retirement benefit based on Allowable Service and Average Salary at disability without reduction for commencement before normal retirement age. 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% Payments stop if disability ceases or death occurs. Payments revert to a retirement annuity at normal retirement age. Benefits may be reduced on resumption of partial employment.

Form of Payment:	Same as for retirement.
Benefit Increases:	Same as for retirement.
Retirement After Disability:	
Age/Service Requirement:	Normal retirement age with continued disability.
Amount:	Any optional annuity continues. Otherwise, a normal retirement benefit equal to the disability benefit paid before normal retirement age, or an actuarially equivalent optional annuity.
Benefit Increases:	Same as for retirement.

Death:

Surviving Spouse Optional Benefit:	
Age/Service Requirement:	Member or former member who dies before retirement or disability benefits commence with three years of Allowable Service. If a former member dies before age 55 and has less than 30 years of Allowable Service, benefits commence when the former member would have been age 55. If an active member dies, benefits may commence immediately, regardless of age.
Amount:	Surviving spouse receives the 100% joint and survivor benefit the member could have elected if terminated. If commencement is prior to age 55, the appropriate early retirement formula described above applies except that one-half the monthly reduction factor is used from age 55 to the commencement age and the Rule of 90 does not apply. In lieu of this benefit, the surviving spouse may elect a refund of contributions with interest or an actuarially equivalent term certain annuity. If a member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit as of July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.
Benefit Increases:	Same as for retirement.

<u>Surviving Dependent Children's Benefit</u>:

Age/Service Requirement:	If no surviving spouse, all dependent children (biological or adopted) below age 20 who are dependent for more than half of their support on deceased member.
Amount:	Actuarially equivalent to surviving spouse 100% joint and survivor annuity payable to the later of age 20 or five years. The amount is to be proportionally divided among surviving children. If a member became deceased prior to July 1, 1997 and the beneficiary was not eligible to commence their survivor benefit as of July 1, 1997, an actuarial increase shall be made for the change in the post-retirement interest rates from 5.00% to 6.00%.

<u>Refund of Contributions</u>:

Age/Service Requirement:	Active employee dies and survivor benefits are not payable, or a former employee dies before annuity begins, or a former employee who is not entitled to an annuity dies.
Amount:	The 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.
Age/Service Requirement:	Retired or disabled annuitant who did not select an optional annuity dies, or the remaining recipient of an option dies.
Amount:	The excess of the member's contributions over all benefits paid.

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 compounded annually if termination occurred on or after May 16, 1989. A deferred annuity may be elected in lieu of a refund.

<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 percentage: (a) 0.00% before July 1, 1971; (b) 5.00% from July 1, 1971 to January 1, 1981; (c) 3.00% thereafter until January 1 of the year following attainment of age 55; and (d) 5.00% hereafter 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:	There have been no changes in plan provisions since the prior valuation.