



State Employees Retirement System



Annual Actuarial Valuation

June 30, 2002

Missouri State Employees' Retirement System

Annual Actuarial Valuation as of June 30, 2002

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GABRIEL, ROEDER, SMITH & COMPANY

Consultants & Actuaries

One Towne Square • Suite 800 • Southfield, Michigan 48076 • 248-799-9000 • 800-521-0498 • fax 248-799-9020

September 23, 2002

Board of Trustees
Missouri State Employees'
Retirement System
907 Wildwood Drive
Jefferson City, Missouri 65102

Re: **Actuarial Valuation as of June 30, 2002**

Presented in this report are the results of the annual actuarial valuation of the Missouri State Employees' Retirement System. The purpose of the valuation was to measure the System's funding progress and to determine the level cost employer contribution rate for the fiscal year beginning July 1, 2002.

The date of the valuation was **June 30, 2002**.

The valuation was based upon data, furnished by the MOSERS' staff, concerning active, inactive and retired members along with pertinent financial information. The complete cooperation of the MOSERS' staff in furnishing materials requested is hereby acknowledged with appreciation.

Your attention is directed particularly to the presentation of contribution rates on page 7 and the comments on page 11.

To the best of our knowledge, this report is complete and accurate. The valuation was performed by, and under the supervision of, independent actuaries who are members of the American Academy of Actuaries and who have significant experience in performing valuations for public retirement systems.

The valuation was prepared in accordance with the standards of practice prescribed by the Actuarial Standards Board. The actuarial calculations were made by qualified actuaries in accordance with generally accepted actuarial procedures and methods. The calculations are based on the provisions of the System scheduled to be in effect as of July 1, 2002, and on actuarial assumptions that are, individually and in the aggregate, internally consistent and reasonably based on the actual experience of the System.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

Norman L. Jones, F.S.A., M.A.A.A.
Senior Consultant & Actuary

Brad Lee Armstrong, A.S.A., M.A.A.A.
Senior Consultant & Actuary

NLJ:BLA:dks

Financial Principles

Financial Principles and Operational Techniques

Promises Made, and Eventually Paid. As each year is completed, MOSERS in effect hands an "IOU" to each member then acquiring a year of service credit --- the "IOU" says: "The Missouri State Employees' Retirement System owes you certain retirement benefits -- payments in cash commencing when you qualify for retirement."

The related key financial question is, which generation of taxpayers contributes the money to cover the IOU?

The present taxpayers, who receive the benefit of the member's present year of service?

Or the future taxpayers, who happen to be in Missouri at the time the IOU becomes a cash demand?

The law governing MOSERS financing intends that this year's taxpayers contribute the money to cover the IOUs being handed out this year. By following this principle, funds will be accumulated during members' working years, which, combined with income on invested assets, will be sufficient to pay benefits throughout retirement.

An inevitable by-product of this financing design is the accumulation of reserve assets, for decades, and the income produced when the assets are invested. Over time, *investment income becomes the largest contributor* toward benefits, and directly influences the contribution amount required from the employer.

In actuarial terminology, the minimum level percent of payroll contribution rate consists of:

Normal Cost (the cost of members' service being rendered this year)

... plus ...

Interest on Unfunded Actuarial Accrued Liabilities (unfunded actuarial accrued liabilities are the difference between: actuarial liabilities for members' service already rendered; and the actuarial value of MOSERS' accrued assets).

Computing Contributions To Support Funded Benefits. From a given schedule of benefits and from the member data and asset data provided, the actuary determines the contribution rates to support the benefits, by means of *an actuarial valuation and a funding method.*

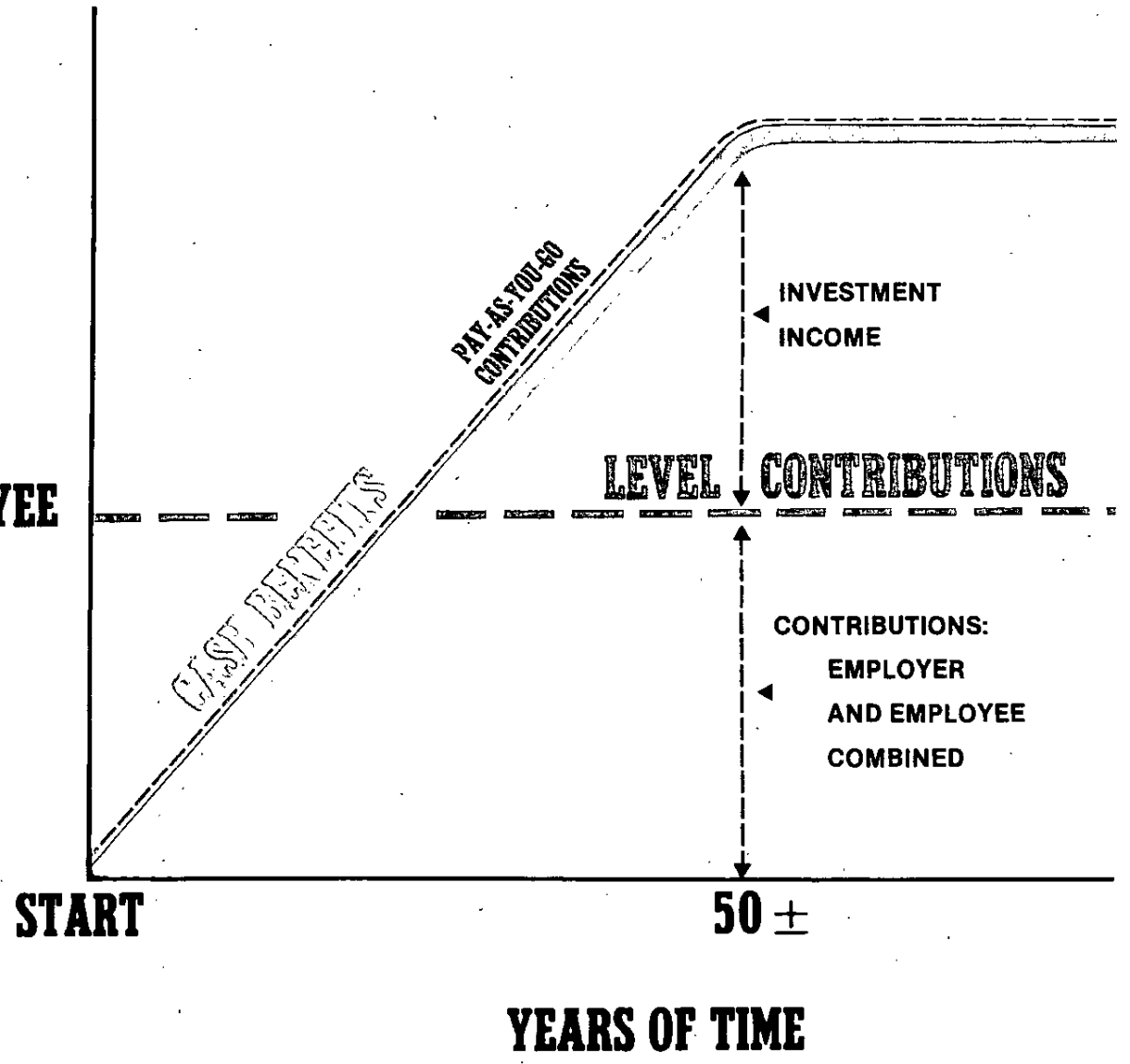
An actuarial valuation has a number of ingredients such as: the rate of investment income which plan assets will earn; the rates of withdrawal of active members who leave covered employment before qualifying for any monthly benefit; the rates of mortality; the rates of disability; the rates of salary increases; and the assumed age or ages at actual retirement.

In an actuarial valuation, assumptions are made as to what the above rates will be, for the next year and for decades in the future. Only the subsequent actual experience of the plan can indicate the degree of accuracy of the assumptions.

Reconciling Differences Between Assumed Experience and Actual Experience. Once actual experience has occurred and been observed, it will not coincide exactly with assumed experience, regardless of the wisdom of those who developed the assumptions, or the skill of the actuary and the many calculations made. The future cannot be predicted with precision.

MOSERS copes with these continually changing differences by having annual actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is *continuing adjustments in financial position, and contribution rates.*

**% OF
ACTIVE
EMPLOYEE
PAYS**



CASH BENEFITS LINE. This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

LEVEL CONTRIBUTION LINE. Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

Economic Risk Areas

- Rates of investment return
- Rates of pay increase
- Changes in active member group size

Non-Economic Risk Areas

- Ages at actual retirement
- Rates of mortality
- Rates of withdrawal of active members (turnover)
- Rates of disability

The Actuarial Valuation Process

An *actuarial valuation* is the mathematical process by which actuarial present values and contribution rates are determined. The flow of activity constituting the valuation may be summarized as follows:

- A. ***Census Data***, furnished by the system administrative staff, including:
 - Retired lives now receiving benefits
 - Former members with vested benefits not yet payable
 - Active members
- + B. ***Benefit Provisions*** governing future payments from the retirement system.
- + C. ***Asset data*** (cash & investments), furnished by the system administrative staff.
- + D. ***Assumptions concerning future experiences*** in various risk areas, which assumptions are established by the Board of Trustees after consulting with the actuary.
- + E. ***The funding method*** for employer contributions (the long-term planned pattern for employer contributions).
- + F. ***Mathematically combining the assumptions, the funding method, and the data.***
- = G. Determination of:
 - Plan financial position*** and
 - The employer contribution rate.***

Meaning Of "Unfunded Actuarial Accrued Liabilities"

"*Actuarial accrued liabilities*" are *the portion of the present value of plan promises to pay benefits in the future which are not covered by future normal cost contributions* --- a liability has been established ("accrued") because the service has been rendered but the resulting monthly cash benefit may not be payable until years in the future. Actuarial accrued liabilities are the result of complex mathematical calculations, which are made annually by the plan's actuary.

If "actuarial accrued liabilities" at any time exceed the actuarial value of the plan's accrued assets, the difference is "*unfunded actuarial accrued liabilities*." This is the common condition. If the plan's assets equaled the plan's "actuarial accrued liabilities," the plan would be termed "fully funded."

Each time a plan adds a new benefit which applies to service already rendered, an "actuarial accrued liability" is created, which is also an "unfunded actuarial accrued liability" because the plan can't print instant cash to cover the value of the new benefit promises. Payment for such unfunded actuarial accrued liabilities is spread over a period of years, commonly in the 20-30 year range.

Unfunded actuarial accrued liabilities can occur in another way: if actual financial experience is less favorable than assumed financial experience, the difference is added to unfunded actuarial accrued liabilities. In plans where benefits are directly related to an employee's pay near time of retirement, unfunded actuarial accrued liabilities increase when unexpected rates of pay increase create additional actuarial accrued liabilities which are not offset by favorable experience in other areas.

The existence of unfunded actuarial accrued liabilities is not bad, but the changes from year to year in amount of unfunded actuarial accrued liabilities are important and should be monitored.

Unfunded actuarial accrued liabilities are not a bill payable immediately but it is important that policy-makers prevent the amount from becoming unreasonably high and *it is vital for plans to have a sound method for making payments toward them* so that they will be controlled.

Valuation Results

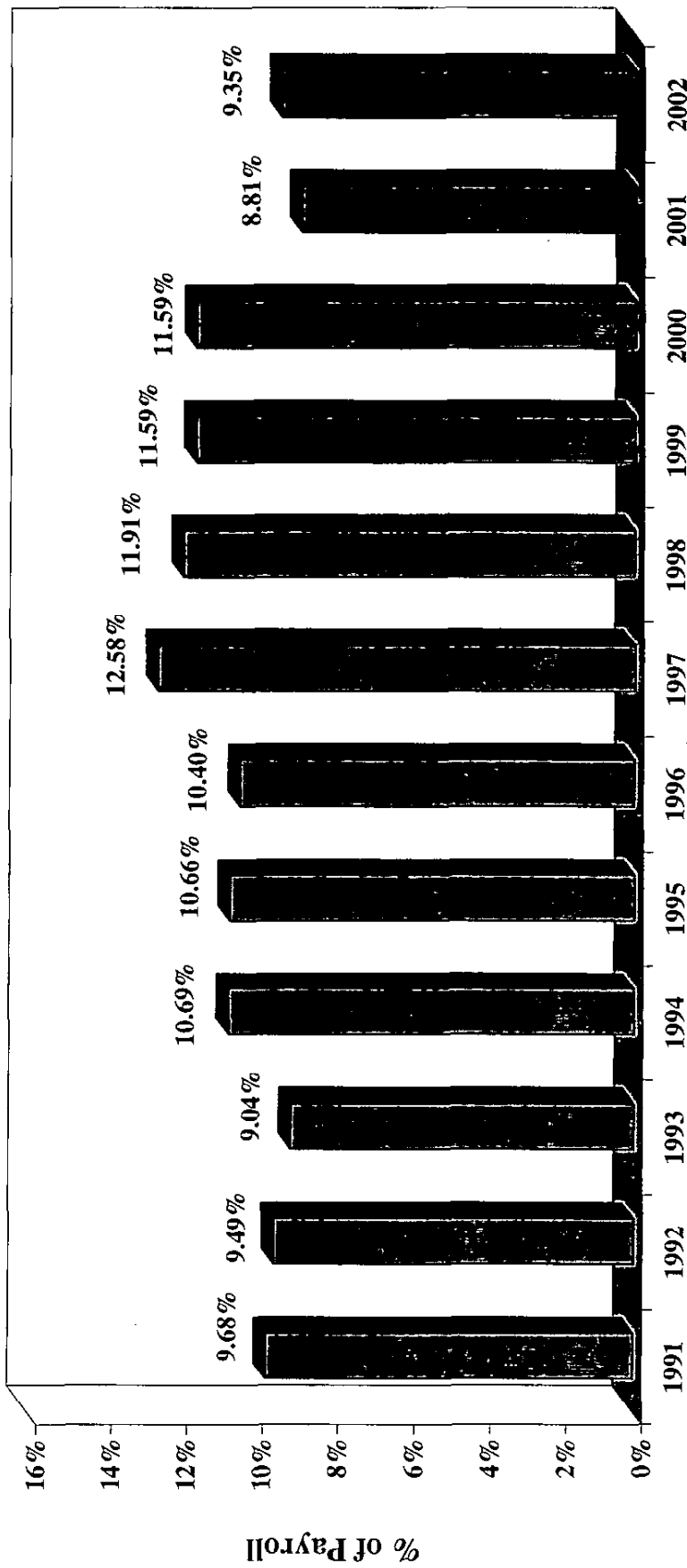


Computed Employer Contribution Rate
Expressed as Percents of Active Member Payroll
June 30, 2002

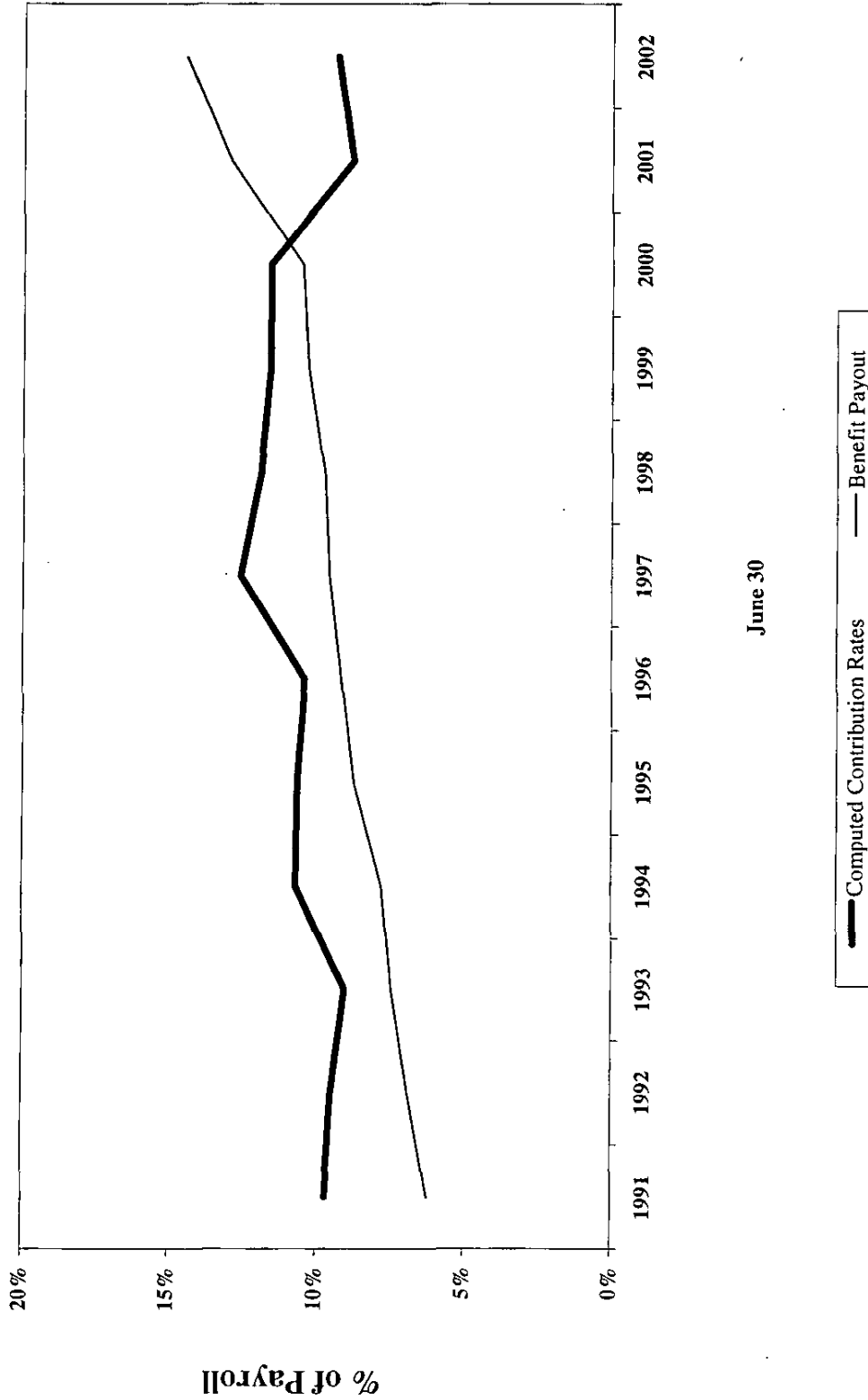
Contributions for	Contribution Expressed as Percents of Payroll
Normal Cost	
Service retirement benefits	7.50 %
Disability benefits	0.32
Survivor benefits	0.33
Administrative expenses	0.32
Total	<u>8.47</u>
Unfunded Actuarial Accrued Liabilities(UAAL) (33 year level percent-of-payroll amortization*)	<u>0.88</u>
TOTAL COMPUTED EMPLOYER CONTRIBUTION RATE	9.35 %

* This corresponds to an amortization factor of 16.79839 assuming that the first year of payroll growth is 0% followed by 32 years at 4% per year. Amortization period a year ago was 34 years.

Missouri State Employees' Retirement System Computed Contribution Rates



Missouri State Employees' Retirement System Contribution Rates Vs. Benefit Payout



Actuarial Present Values June 30, 2002

Actuarial Present Value, June 30, for	(1) Actuarial Present Value	(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1) - (2)
Active Members			
Service retirement benefits based on service rendered before and likely to be rendered after valuation date	\$ 3,589,762,636	\$ 775,172,992	\$ 2,814,589,644
Disability benefits likely to be paid present active members who become totally and permanently disabled	91,394,069	42,041,347	49,352,722
Survivor benefits likely to be paid to widows and children of present active members who die before retiring	141,937,176	43,981,233	97,955,943
Separation benefits likely to be paid present active members			
Refunds of member contributions	0		
Deferred benefits	405,027,885		
Total	<u>405,027,885</u>	<u>202,134,549</u>	<u>202,893,336</u>
Active Member Totals	\$ 4,228,121,766	\$ 1,063,330,121	\$ 3,164,791,645
Members on Leave of Absence & LTD			
Service retirement benefits based on service rendered before the valuation date			85,778,750
Terminated Vested Members			
Service retirement benefits based on service rendered before the valuation date			327,244,847
Retired Lives			2,715,873,070
BackDROP Installment Payments Incurred, but not yet paid			<u>583,963</u>
TOTAL ACTUARIAL ACCRUED LIABILITY			\$ 6,294,272,275
ACTUARIAL VALUE OF ASSETS			<u>6,033,133,598</u>
UNFUNDED ACTUARIAL ACCRUED LIABILITY			<u>\$ 261,138,677</u>

Actuarial Valuation as of June 30, 2002 Comments

The contribution rate for the fiscal year beginning July 1, 2003 was computed to be 9.35% of payroll, based upon an amortization period for the unfunded actuarial accrued liabilities (UAAL) of 33 years. This represents an increase of 0.54% in the rate computed for the fiscal year beginning July 1, 2002. Of this change, (0.35)% was attributable to recognizing the State pay freeze on across-the-board increases for the fiscal year ending June 30, 2003 and 0.89% is attributable to plan experience for the year ending June 30, 2002.

There were no changes in benefit provisions or assumptions that affected this year's valuation.

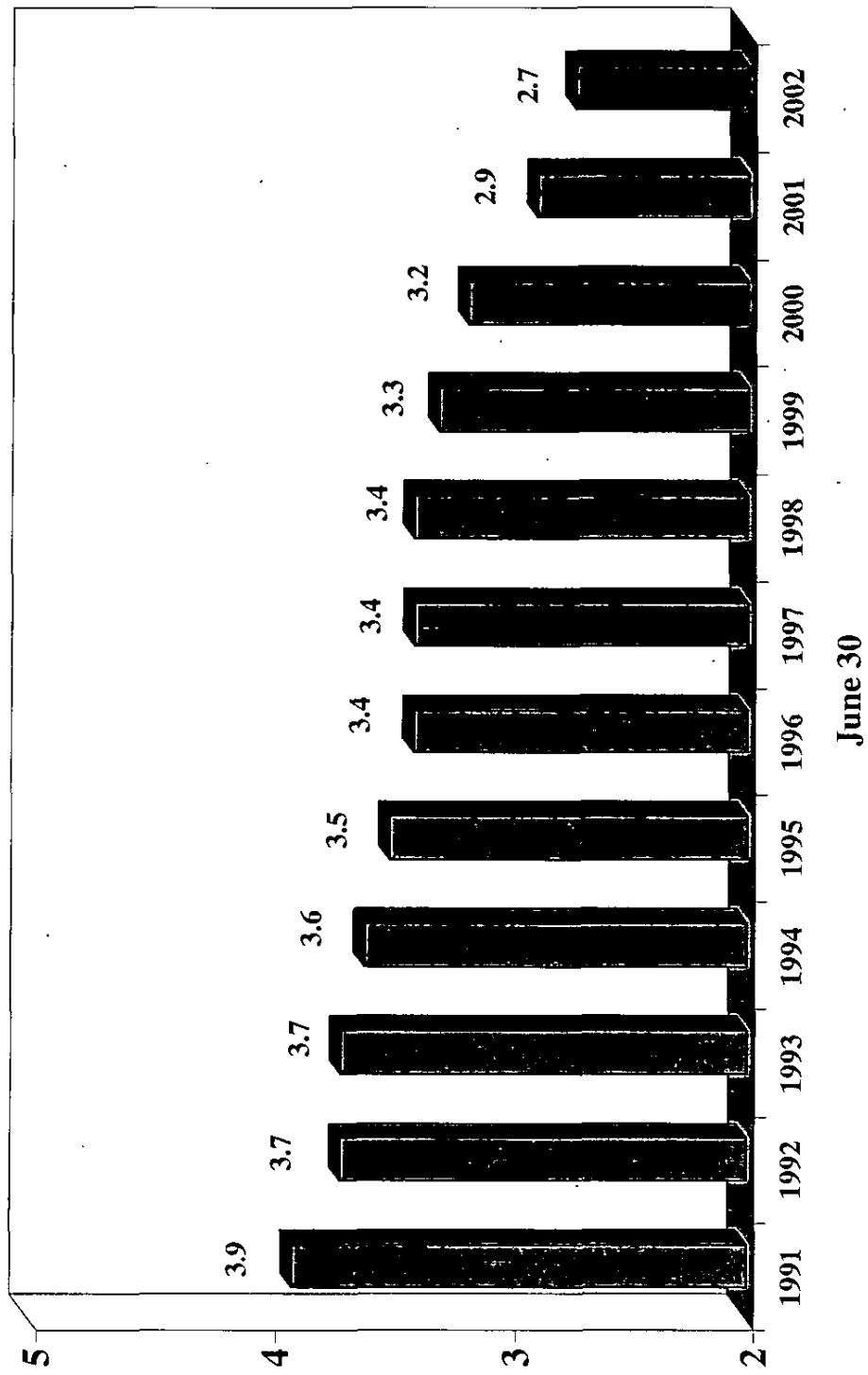
Active and retired member data was reported as of May 31, 2002. It was brought forward to June 30, 2002 by adding one month of service for all active members and the June COLA for certain retired members, and otherwise making no other adjustments. It is expected that this procedure resulted in a slight overstatement of total liabilities as of June 30, 2002. Financial information continues to be reported as of June 30. This procedure was instituted to provide sufficient time for the Board of Trustees to certify the appropriate contribution rate prior to the October 1 statutory deadline.

Comparative Schedule

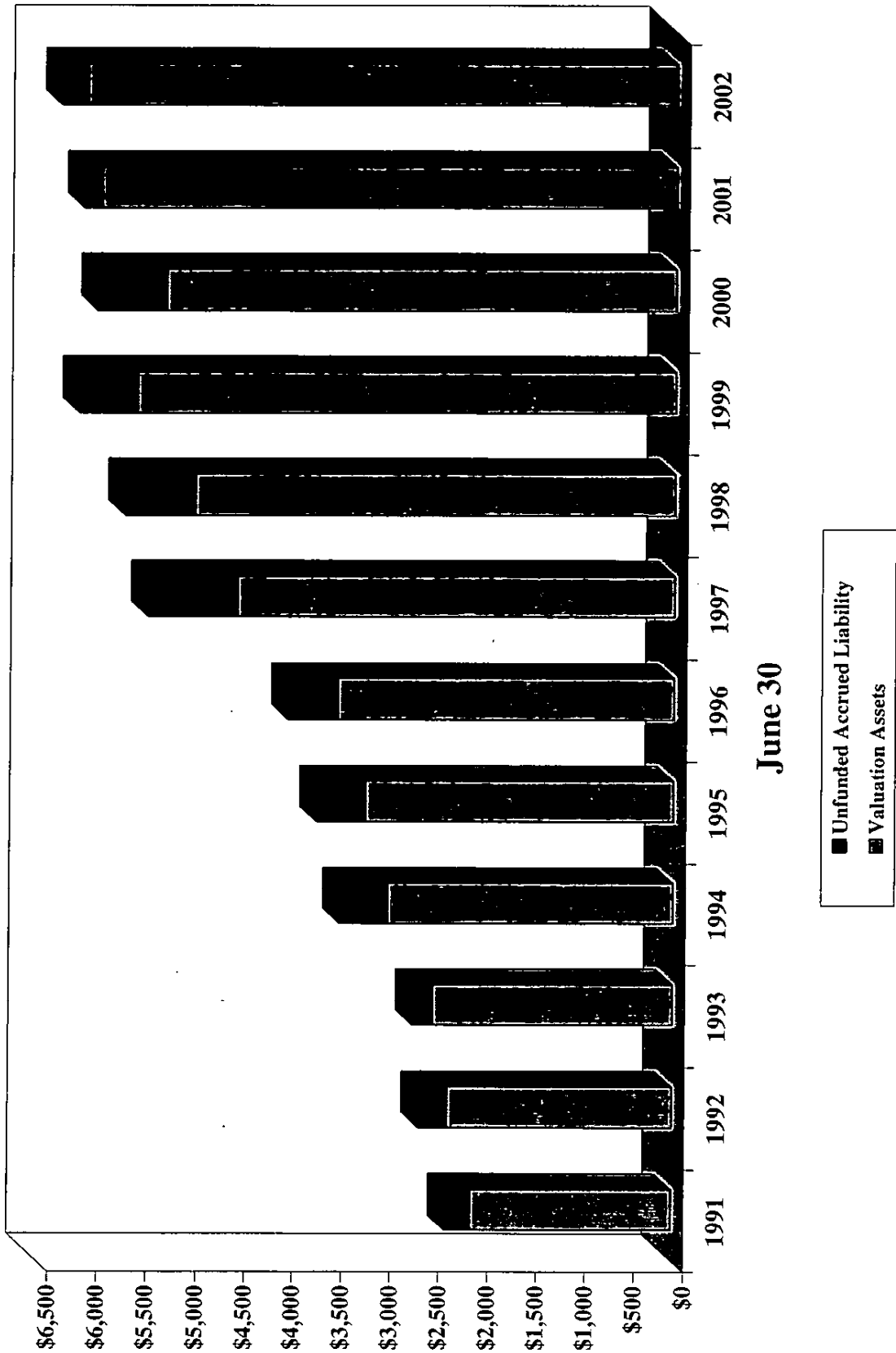
Valuation Date June 30	Active Members				Retired Lives				UAAL		
	Number	Payroll \$ Millions	Average Salary		Retired	Retired	Annual Benefits \$ Million	% of Payroll		Accrued Valuation Liability Assets	
			\$	% Incr.							Number
1989 (2)	43,787	\$895	\$20,444	4.0 %	11,090	4.0	\$52.6	5.9 %	\$1,782	\$1,418	\$364
1990 (1)	46,834	994	21,229	3.8	11,495	4.1	57.3	5.8	1,861	1,587	274
1991 (2)	46,725	1,028	21,995	3.6	11,995	3.9	64.0	6.2	2,053	1,793	260
1992 (1)(2)	46,616	1,030	22,101	0.5	12,552	3.7	71.0	6.9	2,291	1,991	300
1993	47,954	1,063	22,172	0.3	13,115	3.7	79.4	7.5	2,447	2,237	210
1994	49,436	1,125	22,754	2.6	13,651	3.6	87.4	7.8	2,559	2,425	134
1994 (2)	49,436	1,125	22,754	2.6	13,651	3.6	96.2 (est.)	8.6 (est.)	2,919	2,425	494
1995	50,524	1,199	23,730	4.3	14,384	3.5	104.9	8.8	3,151	2,649	502
1996 (1)	51,425	1,268	24,650	3.9	15,004	3.4	116.2	9.2	3,440	2,928	512
1997 (1)(2)(3)	52,737	1,360	25,782	4.6	15,609	3.4	130.4 (est.)	9.6 (est.)	4,484	3,581	903
1998	54,544	1,460	26,762	3.8	16,251	3.4	142.4	9.8	4,919	4,211	708
1999 (2)	56,158	1,565	27,860	4.1	17,117	3.3	161.3 (est.)	10.3 (est.)	5,506	4,909	597
2000 (1)	57,774	1,684	29,143	4.6	18,196	3.2	177.0	10.5	5,921	5,217	704
2001 (1)	58,431	1,758	30,090	3.3	20,237	2.9	227.4	12.9	6,065	5,881	184
2002	58,616	1,773	30,253	0.5	21,502	2.7	256.6	14.5	6,294	6,033	261

- (1) After changes in assumptions.
- (2) After changes in benefit provisions.
- (3) After changes in asset valuation method.

Number of Active Members Per Benefit Recipient

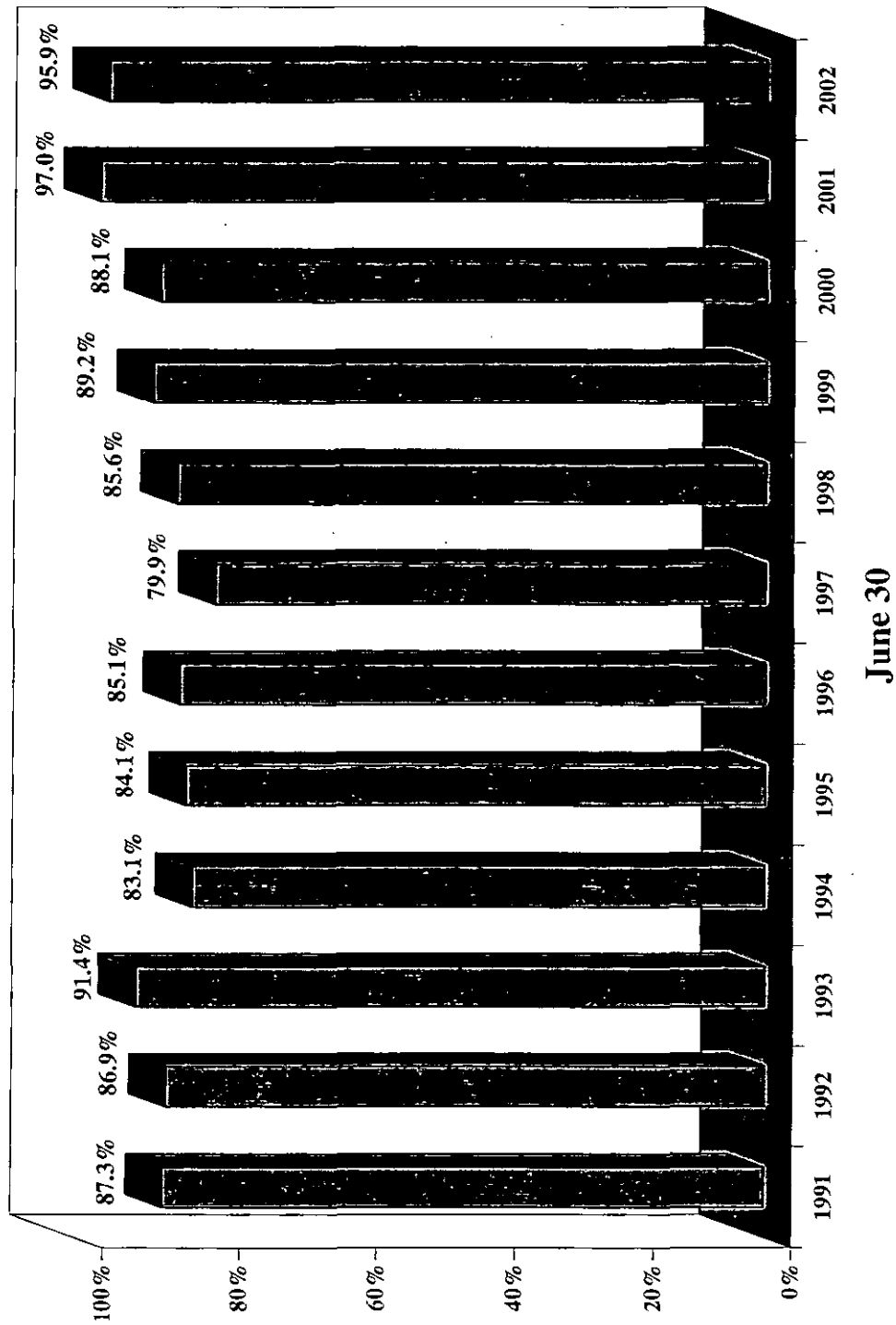


**Missouri State Employees' Retirement System
Actuarial Value of Assets and Actuarial Accrued Liabilities
(\$ in millions)**



June 30

Actuarial Value of Assets as Percents of Accrued Liabilities (Funded Ratio)



June 30

Gain Loss Analysis



Gain/Loss Analysis of Experience During Last Year

COMMENTS

Purpose of Gain/Loss Analysis. Regular actuarial valuations provide valuable information about the composite change in unfunded actuarial accrued liabilities – whether or not the liabilities are increasing or decreasing, and by how much. However, valuations do not show the portion of the change attributable to each risk area within the retirement system financial mechanism: the rate of investment income on plan assets; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of salary increases; and the assumed ages at actual retirement. In an actuarial valuation, assumptions are made as to what these rates will be for the next year and for decades in the future.

The objective of a gain and loss analysis is to determine the portion of the change in unfunded actuarial accrued liabilities attributable to each risk area.

The fact that actual experience differs from assumed experience is to be expected – the future cannot be predicted with precision. Changes in the valuation assumed experience for a risk area should be made when the differences between assumed and actual experience have been observed to be sizeable and persistent. One year's gain and loss analysis may or may not be indicative of *long-term trends, which are the basis of financial assumptions.*

2001 and 2002 Data. For the 2001 and 2002 valuations, active and retired member data was reported as of May 31. It was brought forward to June 30 by adding one month of service for all active members, adding the June COLA for certain retirees, and otherwise making no other adjustments. It was assumed for valuation purposes that there was no turnover among members and no new entrants during the month of June. Financial information was reported as of June 30. It is believed that this procedure resulted in a slight overstatement of total liabilities as of June 30, 2001 and June 30, 2002.

The expected and actual numbers of retirements, deaths, and terminations found on pages 24 through 29 reflect experience over the 12 month period from May 31, 2001 through May 31, 2002.

Results From 2002 Plan Year. There was a net experience loss this year, with the largest single identifiable source being investment income less than assumed. The table below summarizes historical MOSERS economic experience:

Period	Inflation As Measured By		Interest Credited to MOSERS Funds	Real Rate of Return	
	CPI	Increase in Average Salary		Relative to CPI	Relative to Salaries
July 1, 2001 - June 30, 2002	1.1 %	(2.1) %	(6.4) *%	(7.5) %	(4.3) %
July 1, 2000 - June 30, 2001	3.2	5.1	(2.0) *	(5.2) %	(7.1)
July 1, 1999 - June 30, 2000	3.7	5.6	7.9 *	4.2	2.3
July 1, 1998 - June 30, 1999	2.0	5.4	10.9 *	8.9	5.5
July 1, 1997 - June 30, 2002	2.3	3.6	5.5 *	3.2	1.9
January 1, 1977 - December 31, 2001@	4.5	5.3	12.8	8.3	7.5

* MOSERS approximate rate of return based on market value.

@ This information is based on national average earnings and based on market indices roughly approximating MOSERS' current investment mix. TIPS were treated as government/corporate hybrids.

The dollar amount of unfunded actuarial accrued liabilities (UAAL) is large in absolute dollars. However, the size should be viewed in the light of MOSERS' overall financial program. **The ratio of unfunded actuarial accrued liabilities divided by active member payroll is significant.** UAAL represent plan debt, while active member payroll is indicative of the state's capacity to amortize the UAAL – **the ratio thus provides an index of relative condition.** The smaller the ratio, the stronger the financial condition.

	<u>UAAL/Active Member Payroll</u>
June 30, 1994 before HB 1149	.12
June 30, 1994 after HB 1149	.44
June 30, 1995	.42
June 30, 1996 before assumption changes	.39
June 30, 1996 after assumption changes	.40
June 30, 1997 before changes in benefits, assumptions, methods	.23
June 30, 1997 after changes in benefits, assumptions, methods	.66
June 30, 1998	.49
June 30, 1999 before MSEP 2000	.30
June 30, 1999 after MSEP 2000	.38
June 30, 2000 before changes in assumptions	.26
June 30, 2000 after changes in assumptions	.42
June 30, 2001 before changes in assumptions	.34
June 30, 2001 after changes in assumptions	.10
June 30, 2002	.15

Derivation of Experience Gain (Loss)

Year Ended June 30, 2002

Actual experience will never coincide exactly with assumed experience (except by coincidence). Gains and losses may offset each other over a period of years, but sizeable year-to-year variations from assumed experience are common. Detail on the derivation of the experience gain (loss) is shown below.

	Funded Benefits \$Millions
(1) UAAL* at start of year	\$183.9
(2) Normal cost from last valuation	144.5
(3) Actual employer contributions	209.5
(4) Interest accrual: $(1) \times .085 + [(2) - (3)] \times (.085 / 2)$	12.9
(5) Expected UAAL before changes: $(1) + (2) - (3) + (4)$	131.8
(6) Change from any changes in benefits, assumptions, or methods	(103.5)
(7) Expected UAAL after changes: $(5) + (6)$	28.3
(8) Actual UAAL at end of year	261.1
(9) Gain(loss): $(7) - (8)$	(232.8)
(10) Gain (loss) as percent of actuarial accrued liabilities at start of year (\$6,065)	(3.8) %

* *Unfunded actuarial accrued liabilities.*

Valuation Date June 30	Actuarial Gain (Loss) As a % of Beginning Accrued Liabilities
1994	2.9 %
1995	0.6
1996	0.4
1997	5.5
1998	5.5
1999	4.7
2000	2.7
2001	(4.4)
2002	(3.8)

Gains & Losses in Actuarial Accrued Liabilities During Plan 2001 - 2002

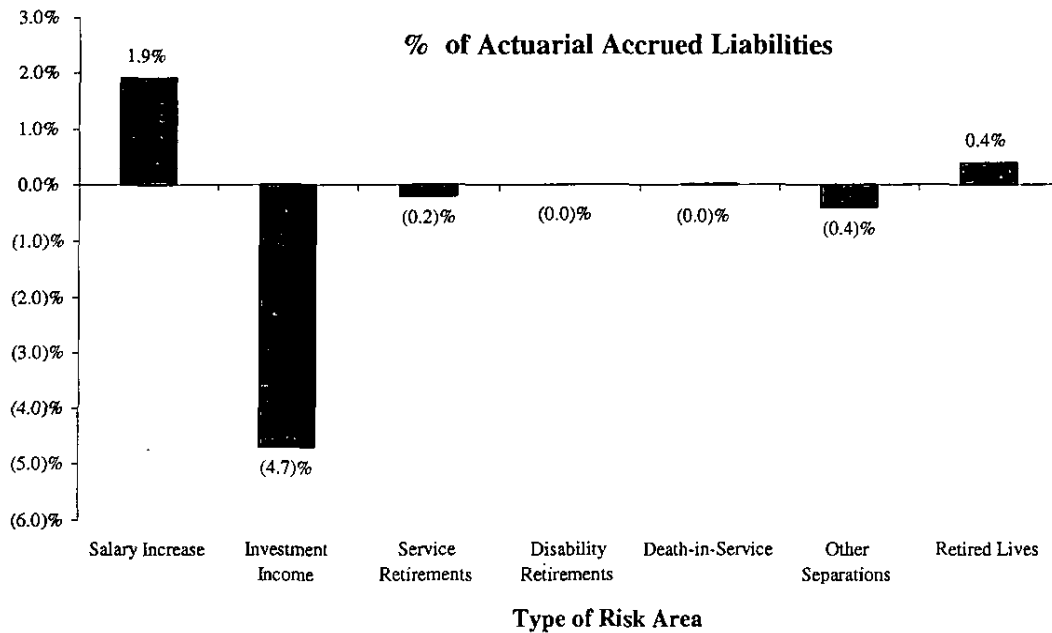
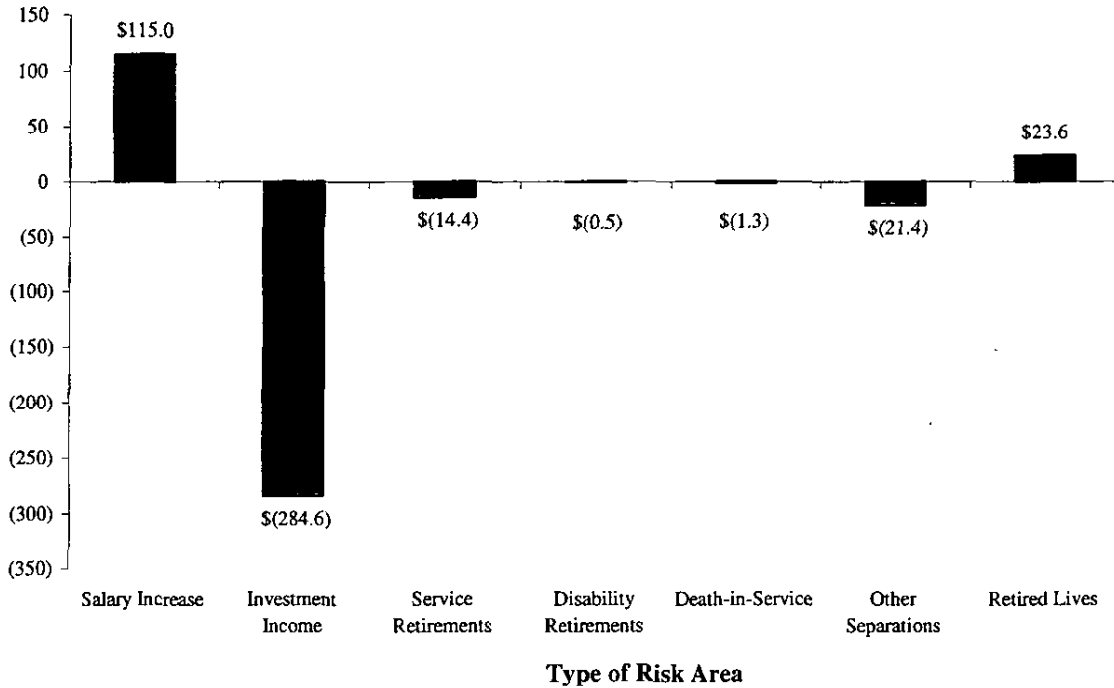
Type of Activity	\$ in Millions	-- Gain (Loss) for Year -- % of Accr. Liabilities*
<u>Decrement Experience:</u>		
<i>Service Retirements</i> . If members retire at older ages than assumed, there is a gain. If at younger ages, a loss.	\$ (14.4)	(0.2) %
<i>Disability Retirements</i> . The occurrence of a gain or loss depends upon the age at disability and the incidence of disability.	(0.5)	(0.0)
<i>Death-in-Service</i> . If there are fewer survivor claims than assumed, there is a gain. If more claims, a loss.	(1.3)	(0.0)
<i>Other Separations</i> . If more actuarial liabilities are released by other separations than assumed, there is a gain. If smaller releases, a loss.	(21.4)	(0.4)
<i>Retired Lives</i> . If more deaths than assumed, there is a gain. If fewer deaths, a loss.	23.6	0.4
<u>Economic Experience:</u>		
<i>Salary Increases</i> . If there are smaller salary increases than assumed, there is a gain. If greater increases, a loss. If long service members have greater salary increases than assumed, there can be a loss even if average salary increases are less than assumed.	115.0	1.9
<i>Investment Income</i> . If there is greater investment income than assumed, there is a gain. If less income, a loss.	(284.6)	(4.7)
<i>COLAs</i> .	13.5	0.2
<u>Other:</u>		
Service credit reinstatements, service transfers, service purchases, net of contributions.	(12.5)	(0.2)
Larger-than-expected average compensation for new retirees.	(14.9)	(0.2)
Change in group size, data adjustments, retroactive benefit payments, option elections, and miscellaneous unidentified changes in the UAAL.	(35.2)	(0.6)
Experience Gain (or Loss) During Year	\$ (232.8)	(3.8) %

* Beginning of year accrued liabilities totaled \$6,065 million.

MOSERS

Gain/Loss Analysis 2001-2002 Experience

Amount in \$ Millions



Experience Gains & Losses By Risk Area

Comparative Statement

-----\$ in Millions-----

Year Ending June 30	Gain (Loss) By Risk Area										Total Exper. Gain (Loss)	Exper. Gain (Loss) as % of AAL	Accrued Liability Beginning of Year
	Salary Increases	Investments	Age & Service Retirement	Disability	Death- In- Service	Withdrawal	Retired Lives	COLAs &	Other				
1992 *	\$79.8	\$19.9	\$ (1.8)	\$0.6	\$1.6	\$ (5.5)	#	\$ (8.0)			\$86.6	4.0 %	\$2,165
1993	66.8	54.0	(0.9)	0.8	2.4	(3.9)	#	(27.0)			92.2	4.0	2,292
1994	42.5	(18.1)	(1.0)	0.7	2.3	(7.0)	#	52.0			71.4	2.9	2,447
1995	16.7	12.0	(3.2)	0.5	2.5	(4.0)	#	(7.5)			17.0	0.6	2,919
1996	24.2	63.7	(2.1)	0.6	2.9	(10.2)	\$ 7.4	(74.3) ^			12.2	0.4	3,151
1997 *	(26.3)	260.3	(3.1)	0.5	2.6	(7.1)	14.5	(50.6)			190.8	5.5	3,440
1998	(56.9)	325.9	9.6	0.2	(0.3)	(1.7)	16.3	(48.3)			244.8	5.5	4,484
1999	(21.9)	299.8	(1.3)	(0.3)	(0.9)	1.7	10.5	(58.1)			229.5	4.7	4,919
2000 *	(6.4)	162.0	1.7	(0.5)	(0.7)	8.9	18.5	(34.7)			148.8	2.7	5,506
2001 *	(23.2)	(67.9)	(59.8)	(1.0)	(0.2)	(28.2)	(13.1)	(66.1)			(259.5)	(4.4)	5,921
2002	115.0	(284.6)	(14.4)	(0.5)	(1.3)	(21.4)	37.1	(62.6)			(232.8)	(3.8)	6,065

* Revision in assumptions.

Not identified as separate risk area. Included in "Other" category.

^ Includes (23.0) for legal settlement.

**Development of Gain (Loss)
From Investment Income
During Plan 2001 - 2002**

	Market Value	Actuarial Value
	----- \$ in millions -----	
1. Assets at June 30, 2001	\$5,432.8	\$ 5,881.2
2. Contributions and Transfers in	213.5	213.5
3. Investment Income	(347.0)	212.7
4. Benefit Payments	268.5	268.5
5. Administrative Expenses	5.8	5.8
6. Assets at June 30, 2002 = (1) + (2) + (3) - (4) - (5)	5,024.9	6,033.1
7. Actual Investment Increment/Mean Assets*	(6.42) %	3.64 %
8. Expected Investment Increment		8.50 %
9. Investment Gain (Loss):		
a. As a % of mean assets: (7) - (8)		(4.86) %
b. \$ in millions		<u>\$ (284.6)</u>

* Based on the approximation formula: $I/[.5 \times (A+B-I)]$, where

I = Investment increment
A = Beginning of year asset value
B = End of year asset value

Salary Increases
To Members Active Both at Beginning & End of Year
During Plan 2001 - 2002

Age Group Beginning of Year	Number	Salary Increases	
		Actual *@	Expected
25-29	4,320	0.0 %	6.4 %
30-34	6,057	(1.9)	6.1
35-39	6,491	(2.1)	5.7
40-44	7,831	(2.0)	5.3
45-49	8,742	(2.5)	5.0
50-54	8,310	(2.4)	4.7
55-59	5,470	(2.7)	4.7
60-64	2,477	(3.2)	4.1
65 & over	770	(3.2)	4.0
Total	50,468		
Average		(2.1) %	5.2 %

* Excludes new entrants and terminations.
 @ Before any adjustment for extra pay period.

Assumed Payroll Growth	Actual Payroll Growth	
	2002	1996-2001
4.0%	n/a	n/a
4.5%	4.4%	6.6%

**Active Members Who Retired With
SERVICE OR REDUCED SERVICE RETIREMENT BENEFITS
During Plan 2001 - 2002**

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
under 50	0	0.0	0	0.0	0	0.0
50	5	2.0	28	10.0	33	12.0
51	16	5.8	23	11.8	39	17.6
52	25	10.9	43	16.0	68	26.9
53	21	13.5	44	20.7	65	34.2
54	23	14.0	33	18.7	56	32.7
55	25	17.2	42	14.5	67	31.7
56	21	8.1	26	8.2	47	16.3
57	26	16.6	43	20.2	69	36.8
58	26	24.3	51	33.3	77	57.6
59	29	26.8	44	35.3	73	62.1
60	34	26.2	47	39.1	81	65.3
61	25	27.0	36	45.1	61	72.1
62	72	58.6	82	64.4	154	123.0
63	30	43.4	55	45.1	85	88.5
64	21	37.3	27	43.6	48	80.9
65	41	46.9	51	55.7	92	102.6
66	25	30.2	30	41.6	55	71.8
67	13	22.3	10	18.8	23	41.1
68	6	7.6	6	9.9	12	17.5
69	6	8.4	5	9.5	11	17.9
70 & over	18	41.1	31	51.6	49	92.7
Totals	508	488.2	757	613.1	1,265	1,101.3

	Men	Women	Total
Average age at retirement	59.2 years	58.5 years	58.7 years
Average service at retirement	23.0 years	23.0 years	23.0 years

**Active Members Who Retired With DISABILITY BENEFITS
During Plan 2001 - 2002**

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
under 25	0	0.0	0	0.0	0	0.0
25-29	1	0.1	4	0.1	5	0.2
30-34	2	1.3	8	1.2	10	2.5
35-39	2	2.9	13	4.1	15	7.0
40-44	11	4.8	15	8.1	26	12.9
45-49	14	8.9	25	11.9	39	20.8
50-54	31	12.9	25	18.6	56	31.5
55-59	22	13.7	27	20.3	49	34.0
60 & over	5	5.5	8	8.0	13	13.5
Totals	88	50.1	125	72.3	213	122.4

**Active Members Who Died
During Plan 2001 - 2002**

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
under 30	1	0.1	0	0.1	1	0.2
30-34	1	0.7	1	0.9	2	1.6
35-39	4	1.5	1	1.5	5	3.0
40-44	3	2.7	4	3.0	7	5.7
45-49	7	5.9	4	4.8	11	10.7
50-54	4	11.5	12	7.6	16	19.1
55-59	14	13.1	8	9.3	22	22.4
60-64	5	9.8	9	7.1	14	16.9
65 & over	6	6.3	2	3.9	8	10.2
Totals	45	51.6	41	38.2	86	89.8

	Men	Women	Total
Average age at death	51.6 years	52.3 years	51.9 years
Average service at death	12.4 years	14.7 years	13.5 years

Of the 86 active members who died in service during 2001 - 2002, 38 members had a benefit payable to a survivor.

Active Members Who Left Active Status With a DEFERRED BENEFIT
(Retirement With Monthly Payments Beginning At Later Age)
During Plan 2001 - 2002

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
under 30	27	27.0	75	63.2	102	90.2
30-34	119	92.0	163	165.1	282	257.1
35-39	93	106.9	184	153.6	277	260.5
40-44	90	96.6	182	173.7	272	270.3
45-49	99	97.7	129	174.0	228	271.7
50-54	74	85.7	116	128.6	190	214.3
55-59	42	38.2	57	62.1	99	100.3
60 & over	36	9.8	52	16.3	88	26.1
Totals	580	553.9	958	936.6	1,538	1,490.5

	Men	Women	Total
Average age at termination	41.9 years	41.0 years	41.3 years
Average service at termination	10.3 years	9.8 years	10.0 years

**Active Members Who Left Active Status With NO BENEFIT PAYABLE
(Other Than Deaths)
During Plan 2001 - 2002**

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
under 20	0	0.0	0	1.0	0	1.0
20-24	116	90.2	283	210.0	399	300.2
25-29	334	255.5	548	443.8	882	699.3
30-34	223	222.9	369	348.7	592	571.6
35-39	137	154.6	230	262.3	367	416.9
40-44	107	150.7	188	258.7	295	409.4
45-49	93	138.3	146	228.6	239	366.9
50-54	70	110.3	117	185.7	187	296.0
55-59	44	82.6	64	101.2	108	183.8
60-64	15	37.3	32	42.1	47	79.4
65-69	6	6.7	8	6.4	14	13.1
70 & over	1	2.3	2	2.1	3	4.4
Totals	1,146	1,251.4	1,987	2,090.6	3,133	3,342.0

	Men	Women	Total
Average age at termination	34.1 years	33.4 years	33.7 years
Average service at termination	2.1 years	2.1 years	2.1 years

Service at Termination	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
0	407	417.1	745	722.4	1,152	1,139.5
1	307	324.6	536	549.2	843	873.8
2	216	241.8	366	396.9	582	638.7
3	160	204.1	230	313.2	390	517.3
4	55	63.8	109	108.9	164	172.7
5 & over	1	0.0	1	0.0	2	0.0
Totals	1,146	1,251.4	1,987	2,090.6	3,133	3,342.0

**Comparison of Actual to Expected Deaths
Among Retired Lives
(Service Retirement Only)
As of June 30, 2001**

Age	Male Deaths			Female Deaths			Total Deaths		
	Actual	Expected	Exposure	Actual	Expected	Exposure	Actual	Expected	Exposure
50-54	2	2	314	3	1	564	5	3	878
55-59	6	5	669	9	5	1,001	15	10	1,670
60-64	23	17	1,212	16	16	1,852	39	33	3,064
65-69	34	34	1,561	28	30	2,245	62	64	3,806
70-74	40	47	1,275	43	44	1,993	83	91	3,268
75-79	62	53	937	68	56	1,513	130	109	2,450
80-84	55	45	481	67	62	1,066	122	107	1,547
85-89	30	29	219	56	50	540	86	79	759
90-94	15	12	63	30	27	194	45	39	257
95-99	3	3	14	9	8	40	12	11	54
100 & Up				1	1	4	1	1	4
Totals	270	247	6,745	330	300	11,012	600	547	17,757
Average Ages	76.3	76.1	68.8	78.6	78.7	69.7	77.6	77.5	69.4

Active Members by Years of Service
As of June 30, 2001

Years of Service to Valuation Date	Men	Women	Total
0	2,399	3,911	6,310
1	2,051	3,338	5,389
2	1,737	2,872	4,609
3	1,614	2,556	4,170
4	1,364	2,061	3,425
5 & Over	13,592	20,936	34,528
Totals	22,757	35,674	58,431

**Male Active Members as of June 30, 2001
By Attained Age and Years of Service**

Attained Age	Years of Service to Valuation Date							Totals	
	0-3	4-4	5-9	10-11	12-14	15-29	30 Plus	No.	Valuation Payroll
Under 20	13							13	\$ 204,179
20-24	620	13	4					637	13,130,362
25-29	1,566	189	229	1	1			1,986	49,809,455
30-34	1,309	278	847	91	44	5		2,574	74,981,093
35-39	963	231	765	308	344	188		2,799	89,864,461
40-44	973	167	655	286	414	681		3,176	106,840,606
45-49	860	179	645	257	473	1,258	1	3,673	132,304,309
50	162	23	108	50	98	355	9	805	29,933,371
51	135	30	129	70	69	300	7	740	27,609,706
52	124	31	146	50	73	314	5	743	27,770,964
53	136	27	103	45	77	296	22	706	26,432,186
54	137	26	126	47	78	260	28	702	26,493,365
55	142	24	104	48	87	228	32	665	26,285,548
56	92	13	83	24	55	187	26	480	18,828,909
57	93	19	75	34	50	169	36	476	18,199,036
58	99	23	80	27	45	143	43	460	17,625,168
59	89	16	82	14	59	120	45	425	16,926,289
60	68	17	44	32	41	121	55	378	15,190,497
61	55	10	40	26	35	80	32	278	10,838,749
62	40	18	55	21	24	64	53	275	11,070,677
63	30	7	31	10	18	49	35	180	7,885,471
64	25	8	26	9	17	41	24	150	6,068,934
65	11	5	26	10	13	38	14	117	5,079,208
66	12	3	15	6	13	17	11	77	3,242,133
67	15		3	8	8	13	12	59	2,313,454
68	6	1	10	7	4	10	4	42	1,746,559
69	6	1	6	1	6	11	1	32	1,166,232
70 & over	20	5	21	5	18	29	11	109	4,050,643
Totals	7,801	1,364	4,458	1,487	2,164	4,977	506	22,757	\$ 771,891,566

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 44.1 years

Service: 9.7 years

Annual Pay: \$33,919

**Female Active Members as of June 30, 2001
By Attained Age and Years of Service**

Attained Age	Years of Service to Valuation Date							Totals	
	0-3	4-4	5-9	10-11	12-14	15-29	30 Plus	No.	Valuation Payroll
Under 20	59							59	\$ 958,107
20-24	1,381	36	16					1,433	27,914,975
25-29	2,668	361	535	8				3,572	85,935,992
30-34	2,034	402	1,534	235	161	25		4,391	114,833,699
35-39	1,621	292	1,180	404	496	565		4,558	124,175,788
40-44	1,581	280	1,047	385	537	1,569		5,399	152,745,576
45-49	1,391	271	1,073	368	517	2,135	46	5,801	172,469,106
50	237	62	205	67	98	453	64	1,186	36,150,836
51	230	35	199	75	98	412	40	1,089	32,587,482
52	220	47	189	72	112	392	35	1,067	31,874,118
53	222	41	166	58	94	337	55	973	28,479,536
54	178	40	170	77	81	339	72	957	28,869,054
55	153	36	156	62	79	298	62	846	24,108,185
56	133	28	134	31	61	226	44	657	19,082,779
57	102	23	92	41	55	202	43	558	16,186,022
58	94	19	107	44	84	219	37	604	17,922,350
59	97	16	100	41	59	185	27	525	15,215,708
60	60	23	100	31	70	150	31	465	13,029,971
61	62	10	62	29	70	106	21	360	9,968,216
62	42	12	44	26	30	103	28	285	8,364,193
63	33	10	52	18	33	73	19	238	6,905,336
64	23	8	40	14	21	57	16	179	5,305,822
65	14	4	21	9	23	51	13	135	3,830,295
66	13	1	20	7	14	31	7	93	2,716,249
67	6	1	10	5	9	20	4	55	1,571,038
68	7	1	3		6	16	3	36	1,066,739
69	2	1	9	4	5	12	4	37	1,034,131
70 & over	14	1	18	3	11	50	19	116	2,997,401
Totals	12,677	2,061	7,282	2,114	2,824	8,026	690	35,674	\$ 986,298,703

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 42.6 years

Service: 9.6 years

Annual Pay: \$27,648

**Total Active Members as of June 30, 2001
By Attained Age and Years of Service**

Attained Age	Years of Service to Valuation Date							Totals	
	0-3	4-4	5-9	10-11	12-14	15-29	30 Plus	No.	Valuation Payroll
Under 20	72							72	\$ 1,162,286
20-24	2,001	49	20					2,070	41,045,337
25-29	4,234	550	764	9	1			5,558	135,745,447
30-34	3,343	680	2,381	326	205	30		6,965	189,814,792
35-39	2,584	523	1,945	712	840	753		7,357	214,040,249
40-44	2,554	447	1,702	671	951	2,250		8,575	259,586,182
45-49	2,251	450	1,718	625	990	3,393	47	9,474	304,773,415
50	399	85	313	117	196	808	73	1,991	66,084,206
51	365	65	328	145	167	712	47	1,829	60,197,187
52	344	78	335	122	185	706	40	1,810	59,645,082
53	358	68	269	103	171	633	77	1,679	54,911,722
54	315	66	296	124	159	599	100	1,659	55,362,419
55	295	60	260	110	166	526	94	1,511	50,393,733
56	225	41	217	55	116	413	70	1,137	37,911,688
57	195	42	167	75	105	371	79	1,034	34,385,059
58	193	42	187	71	129	362	80	1,064	35,547,518
59	186	32	182	55	118	305	72	950	32,141,997
60	128	40	144	63	111	271	86	843	28,220,469
61	117	20	102	55	105	186	53	638	20,806,964
62	82	30	99	47	54	167	81	560	19,434,870
63	63	17	83	28	51	122	54	418	14,790,808
64	48	16	66	23	38	98	40	329	11,374,756
65	25	9	47	19	36	89	27	252	8,909,503
66	25	4	35	13	27	48	18	170	5,958,382
67	21	1	13	13	17	33	16	114	3,884,493
68	13	2	13	7	10	26	7	78	2,813,298
69	8	2	15	5	11	23	5	69	2,200,363
70 & over	34	6	39	8	29	79	30	225	7,048,044
Totals	20,478	3,425	11,740	3,601	4,988	13,003	1,196	58,431	\$ 1,758,190,269

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 43.2 years

Service: 9.7 years

Annual Pay: \$30,090

Data Used in Valuations



Missouri State Employees' Retirement System
 Summary of Benefit Provisions Evaluated
 June 30, 2002 Actuarial Valuation

MSEP (Missouri State Employees' Plan)	MSEP 2000 (Missouri State Employees' Plan 2000)
<p>PARTICIPATION</p> <p>Participants include:</p> <p>All MOSERS members, vested former members, retirees and survivors who first became members prior to July 1, 2000 and who do not elect to transfer to the MSEP 2000 plan. Election is made at the time benefits commence.</p>	<p>Participants include:</p> <ol style="list-style-type: none"> (1) All new employees who first become members on or after July 1, 2000, except full-time teaching and senior administrative personnel of the regional colleges and universities hired on or after July 1, 2002 who will be participants in the Regional Colleges Retirement Plan. (2) MSEP active members and vested former members who elect to transfer to the MSEP 2000 plan prior to retirement. (3) MSEP retirees who elect to transfer to the MSEP 2000 plan during the election window from July 1, 2000 through July 1, 2001, and their survivors.

NORMAL RETIREMENT ELIGIBILITY (unreduced benefits)**Members of the General Assembly:**

Age 55 with completion of at least 3 full biennial assemblies.

Members of the General Assembly: The earlier of attaining:

- (1) Age 55 with completion of at least 2 full biennial assemblies.
- (2) Age 50 with completion of at least 2 full biennial assemblies and with age plus credited service equal to 80 or more.

Statewide Elected Officials: The earliest of attaining:

- (1) Age 65 with at least 4 years of credited service.
- (2) Age 60 with at least 15 years of credited service.
- (3) Age 50 with age plus credited service equal to 80 or more.

Statewide Elected Officials: The earlier of attaining:

- (1) Age 55 with at least 4 years of credited service as a statewide elected official.
- (2) Age 50 with age plus credited service equal to 80 or more.

General Employees: The earliest of attaining:

- (1) Age 65 and active with at least 4 years of credited service.
- (2) Age 65 with at least five years of credited service.
- (3) Age 60 with at least 15 years of credited service.
- (4) Age 50 with age plus credited service equal to 80 or more.

General Employees: The earlier of attaining:

- (1) Age 62 with at least 5 years of credited service.
- (2) Age 50 with age plus credited service equal to 80 or more.

Uniform Water Patrol Employees: The earliest of attaining:

- (1) Age 55 and active with at least 4 years of credited service.
- (2) Age 55 with at least 5 years of credited service.
- (3) Age 50 with age plus credited service equal to 80 or more.

AVERAGE COMPENSATION USED FOR BENEFIT DETERMINATION

The average annual compensation of a member for the three consecutive years of service during which pay was highest (overtime pay is included for purposes of determining Average Compensation). Lump sum payments are excluded, but unused sick leave may be converted to additional credited service (usable only for benefit computation, not eligibility).

The average annual pay of a member for the three consecutive years of service during which pay was highest (overtime pay is included for purposes of determining Average Pay). A lump sum payment is included unless it is for unused vacation or sick leave. However, unused sick leave may be converted to additional credited service (usable only for benefit computation, not eligibility).

BENEFIT AMOUNT

Members of the General Assembly:

\$150 per month per biennial assembly served.

Members of the General Assembly:

1/24 of pay times first 24 years of credited service as a member of the General Assembly.

Statewide Elected Officials:

- (1) Less than 12 years of credited service:
1.6% of Average Compensation times years of credited service.
- (2) 12 or more years of credited service:
50% of pay of the highest elected position held prior to retirement.

Statewide Elected Officials:

1/24 of pay (of the highest elected position held prior to retirement) times the first 12 years of credited service as a statewide elected official.

General Employees:

- 1.6% of Average Compensation times years of credited service.
- 2.1% of Average Compensation times years of credited service for any period of non-social security covered employment transferred from the Public School Retirement System.

General Employees:

- Life Benefit: 1.7% of Average Pay times years of credited service.
- Temporary Benefit: If member retires between ages 50 and 62 with age plus credited service equal to 80 or more, a temporary benefit is payable until the attainment of the minimum age at which reduced social security benefits are payable, in the amount of 0.8% of Average Pay times years of credited service.

Non-Social Security Covered Service:

2.5% of Average Pay times years of credited service for any period of non-social security covered employment transferred from the Public School Retirement System.

Uniformed Water Patrol Employees:

2.13% of Average Compensation times years of credited service.

MSEP

MSEP 2000

EARLY RETIREMENT FOR GENERAL EMPLOYEES:

Eligibility:

Age 55 with at least 10 years of credited service.

Amount:

- (1) Less than 15 years of service: Normal retirement amount actuarially reduced for years younger than age 65.
- (2) 15 years but less than 20 years of service, and less than the number of years of service necessary for age and service to total 80: Normal retirement amount actuarially reduced for years younger than age 60.
- (3) 20 or more years of service, but less than the number of years of service necessary for age and service to total 80: Normal retirement amount reduced for years younger than the 80 and out eligibility date.

VESTED DEFERRED BENEFITS

Benefits for employees who terminate prior to eligibility for an immediate benefit are considered to be vested in accordance with the following schedule (benefits commence at the age the individual would have been eligible for early or normal retirement, considering years of credited service).

Years of Service	General Assembly	Statewide Elected Officials	General Employees
4		100%	
5	100%		100%
6 (3 assemblies)	100%		

Eligibility:

Age 57 with at least 5 years of credited service.

Amount:

Normal retirement amount reduced by 1/2% for each month that retirement precedes eligibility for normal retirement.

Benefits for employees who terminate prior to eligibility for an immediate benefit are considered to be vested in accordance with the following schedule (benefits commence at age 57).

Years of Service	General Assembly	Statewide Elected Officials	General Employees
4 (2 assemblies)	100%		
5		100%	100%

DEATH PRIOR TO RETIREMENT

- (1) The spouse shall receive a benefit computed as if the member had been normal retirement age on the date of death and elected the joint and 100% survivor optional form of payment, provided the member had at least 5 years of credited service and was married for at least two consecutive years immediately prior to the date of death. If no eligible spouse survives, 50% of the member's life income annuity will be paid to eligible children. If the death is duty related, the service requirement is waived, and the minimum spouse benefit is 50% of current pay.
- (2) For members of the General Assembly, the spouse receives 50% of the benefit the member would have received if the member had been normal retirement age on the date of death, provided the member had served in at least 3 biennial assemblies, and was married for at least two consecutive years immediately prior to the date of death. If the death is duty related, the service requirement is waived, and the minimum spouse benefit is 50% of current pay.

The spouse shall receive a benefit computed as if the member had been normal retirement age on the date of death and elected the joint and 100% survivor option form of payment, provided the member had at least 5 years of credited service (2 full assemblies for a member of the General Assembly, 4 years of credited service for a statewide elected official). If no eligible spouse survives, 80% of the member's life income annuity will be paid to eligible children. If the death is duty related, the service requirement is waived, and the minimum spouse benefit is 50% of current pay.

DEATH AFTER RETIREMENT

50% of the benefit the retired member was receiving on the date of death (the normal form of payment), or the benefit payable under the joint and survivor or period certain form of payment, if the member elected an optional form of payment at time of retirement and provided the member was married for at least two consecutive years prior to the date of retirement. Effective July 1, 2000, a member who is not married at retirement but marries thereafter may designate a spouse as beneficiary upon completion of one year of marriage. Additionally, a member may designate a new spouse as beneficiary upon completion of one year of marriage in the event of the death of the spouse the member was married to at the date of retirement (this provision does not apply to period certain annuities).

The benefit payable under the joint and survivor or period certain form of payment, if the member elected an optional form of payment at time of retirement. A member who is not married at retirement but marries thereafter may designate a spouse as beneficiary upon completion of one year of marriage. Additionally, a member may designate a new spouse as beneficiary upon completion of one year of marriage in the event of the death of the spouse the member was married to at the date of retirement (this provision does not apply to period certain annuities).

DISABILITY (RECIPIENTS OF LTD BENEFITS)

Normal retirement benefits become payable at the time the member is eligible for normal retirement, and are computed based on: i) the service that would have accrued to the member if active employment had continued; and ii) the member's rate of pay at the time of disability (If the member retires on or after August 28, 1999, the member's rate of pay is based on the rate of pay at the time of disability indexed to the time of benefit commencement). An exception is Uniformed Water Patrol employees who are eligible for an immediate occupational disability benefit equal to 50% of pay at time of disability.

Normal retirement benefits become payable at the time the member is eligible for normal retirement, and are computed based on: i) the service that would have accrued to the member if active employment had continued; and ii) the member's rate of pay at the time of disability indexed to the time of benefit commencement. The annual percentage increase in the pay used to compute benefits is the lesser of: i) 80% of the CPI increase and ii) 5%.

**MSEP
POST-RETIREMENT BENEFIT ADJUSTMENTS**

Benefits are increased to retired members (including survivors) annually in accordance with the following formulas:

Increase in CPI	Formula 1 Benefit Increase	Formula 2 Benefit Increase
5.00% or less	4%	80% of CPI increase
5.01% - 6.24%	80% of CPI increase	80% of CPI increase
6.25% or more	5%	5%

Members first hired prior to August 28, 1997 receive COLAs based on Formula 1 until an aggregate increase of 65% is reached. At that point subsequent COLAs based on Formula 2 are granted.

Members first hired on or after August 28, 1997 receive COLAs based solely on Formula 2.

Statewide Elected Officials with 12 or more years of service have their benefit adjusted annually based on the increase in the pay for an active statewide elected official in the member's highest elected position.

Members who are fully vested and work beyond age 65 will have their monthly benefit increased upon retirement. The percentage increase in benefit is equal to all COLAs for the years between age 65 and date of retirement, not to exceed 65%.

MSEP 2000

Benefits are increased to retired members (including survivors) annually in accordance with the following:

Members of the General Assembly: Benefit is adjusted annually based on the increase in the pay for an active member of the General Assembly.

Statewide Elected Officials: Benefit is adjusted annually based on the increase in the pay for an active statewide elected official in the retired member's highest elected position.

General Employees: Annual benefit percentage increase equal to the lesser of: i) 80% of the CPI increase, and
ii) 5%.

MSEP

MSEP 2000

POP-UP PROVISION

Benefits to members who choose a survivor form of payment and whose spouse precedes the member in death, will "pop-up" or revert to the amount the member would have received had he/she not elected a survivor option.

Same.

PORTABILITY

Purchase/Transfer Provisions (in addition to military). Effective August 28, 1999, a member may purchase up to four years of non-federal full-time Missouri public service, provided the member is not vested in another retirement system for that same service.

Purchase/Transfer Provisions (in addition to military). A member may purchase up to four years of non-federal full-time Missouri public service, provided the member is not vested in another retirement system for that same service. Local vested service credit granted after 10 years of state service if the other retirement plan agrees to transfer assets equal to the accrued liability to MOSERS.

MEMBER CONTRIBUTIONS. None.

Same.

BACK DROP. See following page.

Same.

BACK DROP

To be eligible to participate in the back DROP, a member must have been eligible to retire under normal age and/or service conditions for at least two years. A retroactive starting date is established for back DROP purposes which is the later of: 1) the member's normal retirement date or 2) five years prior to the annuity starting date under the retirement plan selected by the member.

A member may elect the back DROP period for the accumulation of the back DROP account in 12 month increments prior to their actual retirement date or back to the earliest possible date. This results in a back DROP period of two to five years depending upon the individual situation.

A theoretical back DROP account is accumulated that includes 90% of the value of the benefit payments that would have been paid during the back DROP period had the member retired at the retroactive starting date with their respective option election. These payments include applicable post-retirement benefit increases.

The member is paid the resulting lump sum value of the back DROP account as of the annuity starting date or as three equal annual installments beginning at the annuity starting date.

The annuity benefit payable from the actual retirement date is computed with years of service and average pay as of the retroactive starting date for the back DROP. Post-retirement benefit increases that occurred during the back DROP period are applied in the calculation of the monthly annuity.

Same.

**Retirants & Beneficiaries as of June 30, 2002
Tabulated by Plan Year of Retirement**

Plan Year Ended 6/30	No.	Total Annual Benefits	Average Monthly Benefit
2002 *	1,785	\$25,381,660	\$1,185
2001	2,794	44,222,916	1,319
2000	1,505	20,906,112	1,158
1999	1,438	18,512,712	1,073
1998	1,331	16,605,540	1,040
1997	1,154	14,549,424	1,051
1996	1,141	13,567,704	991
1995	1,176	13,877,928	983
1994	932	10,206,384	913
1993	927	10,560,120	949
1992	826	9,579,108	966
1991	727	9,047,916	1,037
1990	641	7,173,132	933
1989	637	7,139,256	934
1988	600	6,048,444	840
1987	524	4,547,928	723
1986	464	3,422,940	615
1985	380	3,220,920	706
1984	374	2,726,472	608
1983	362	2,999,592	691
1982	347	2,688,072	646
1981	233	1,815,168	649
1980	192	1,342,872	583
1979	162	1,120,440	576
1978	151	912,612	504
1977	187	1,213,392	541
1976	141	890,868	527
1975	112	706,860	526
1974	86	502,764	487
1973	77	497,604	539
1972	26	172,296	552
1971	20	112,560	469
1970	16	116,076	605
1969	12	72,240	502
1968	8	34,248	357
1967	7	53,724	640
1966	3	17,676	491
1965	0	0	0
1964 & PRIOR	4	27,708	577
Totals	21,502	\$256,593,388	\$994

*Eleven months ended May 31, 2002.

Benefits Payable June 30, 2002
Tabulated by Option and Type of Benefit

MSEP Benefits

Type of Benefit	No.	Annual Funded Benefits
Service Retirement		
Life Annuity	4,596	\$ 39,809,530
50% Joint and Survivor	4,803	59,253,031
75% Joint and Survivor	8	77,943
100% Joint and Survivor	2,103	31,104,619
5 Year Certain and Life	121	959,448
10 Year Certain and Life	90	717,577
Survivor Beneficiary	1,438	10,342,759
Total	<u>13,159</u>	<u>142,264,907</u>
Disability Retirement	33	129,062
Death-in-Service	1,104	7,397,969
Grand Total	14,296	\$ 149,791,938

MSEP 2000 Benefits

Type of Benefit	No.	Annual Funded Benefits
Service Retirement		
Life Annuity	5,372	\$ 72,007,723
50% Joint and Survivor	792	18,024,637
100% Joint and Survivor	668	12,621,629
5 Year Certain and Life	59	768,345
10 Year Certain and Life	195	2,203,864
15 Year Certain and Life	69	607,843
Survivor Beneficiary	51	567,409
Total	<u>7,206</u>	<u>106,801,450</u>
Disability Retirement	0	0
Death-in-Service	0	0
Grand Total	7,206	\$ 106,801,450

Total Benefits Payable June 30, 2002
Tabulated by Attained Ages of Benefit Recipients

Attained Ages	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Totals	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20					77	\$ 171,866	77	\$ 171,866
20-24					18	65,129	18	65,129
25-29					3	11,496	3	11,496
30-34					17	82,572	17	82,572
35-39					26	114,444	26	114,444
40-44					46	291,184	46	291,184
45-49			2	\$ 5,496	105	747,358	107	752,854
50-54	782	\$ 20,109,114	10	42,794	178	1,341,797	970	21,493,705
55-59	2,012	41,460,652	9	31,979	220	1,971,591	2,241	43,464,222
60-64	3,161	41,827,204	11	47,341	274	2,415,054	3,446	44,289,599
65-69	3,915	42,956,228	1	1,452	396	3,124,798	4,312	46,082,478
70-74	3,328	38,448,366			415	2,769,822	3,743	41,218,188
75-79	2,678	28,332,597			389	2,639,614	3,067	30,972,211
80-84	1,712	15,668,097			264	1,579,594	1,976	17,247,691
85-89	847	6,457,325			115	710,401	962	7,167,726
90-94	363	2,340,447			40	228,406	403	2,568,853
95	24	165,188			6	35,316	30	200,504
96	12	90,979			1	2,424	13	93,403
97	17	102,223			2	4,599	19	106,822
98	9	77,304			1	672	10	77,976
99	7	59,556					7	59,556
100	5	30,504					5	30,504
101	3	26,265					3	26,265
102	1	4,140					1	4,140
Totals	18,876	\$ 238,156,189	33	\$ 129,062	2,593	\$ 18,308,137	21,502	\$ 256,593,388

Average age at Retirement: 61.2 years.

Average age now: 69.7 years.

Summary of Member Data Included in Valuation

June 30, 2002

Active Members

Valuation Group	Number	Payroll	Group Averages		
			Salary	Age(yrs.)	Service(yrs.)
Regular State Employees	53,601	\$ 1,558,658,691	\$ 29,079	43.0	9.4
Elected Officials	6	590,976	98,496	45.1	5.1
Legislative Clerks	100	2,689,932	26,899	52.6	13.3
Legislators	195	6,122,532	31,398	51.1	8.6
Uniformed Water Patrol	79	3,084,612	39,046	38.5	12.9
Conservation Department	1,534	57,189,062	37,281	42.6	13.1
Contract Employees	3,101	144,947,679	46,742	50.2	14.1
Total in Funding Program	58,616	\$ 1,773,283,484	\$ 30,253	43.4	9.8
Administrative Law Judges	58	\$ 4,779,504	\$ 82,405	48.8	9.9
Other Judges	392	40,068,744	102,216	52.6	11.0

Retired Lives

Type of Benefit Payment	No.	Annual Benefit	Group Averages	
			Benefit	Age(yrs.)
Retirement	18,876	\$ 238,156,189	\$ 12,617	70.2
Disability	33	129,062	3,911	57.3
Survivor of Active Member	1,104	7,397,969	6,701	58.5
Survivor of Retired Member	1,489	10,910,168	7,327	72.6
Total in Funding Program	21,502	\$ 256,593,388	\$ 11,933	69.7
Administrative Law Judges	25	\$ 868,652	\$ 34,746	74.3
Other Judges	383	16,446,999	42,943	75.3

This valuation also includes 12,257 terminated vested members, 317 members on leave and 1,052 members on long-term disability.

Active Members in Funding Program as of June 30, 2002

By Age and Years of Service

Near Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 plus	No.	Valuation Payroll
Under 20	68							68	\$ 1,173,215
20-24	2,076	19						2,095	42,749,180
25-29	4,528	784	7					5,319	132,458,951
30-34	3,855	2,607	459	29				6,950	191,670,911
35-39	2,937	2,034	1,482	663	32			7,148	208,888,579
40-44	2,973	1,856	1,484	1,394	775	83		8,565	259,412,036
45-49	2,617	1,770	1,489	1,318	1,225	848	58	9,325	298,271,440
50-54	2,213	1,559	1,463	1,241	1,134	1,211	367	9,188	303,790,949
55-59	1,352	1,119	1,020	942	748	492	430	6,103	203,773,736
60	197	154	167	134	64	76	70	862	29,094,917
61	134	156	144	110	75	60	77	756	25,017,583
62	123	91	117	84	53	28	42	538	17,620,289
63	85	76	67	48	36	27	56	395	13,655,639
64	62	64	66	51	33	28	47	351	12,628,721
65	45	54	47	40	17	23	34	260	9,271,539
66	27	30	29	29	14	9	19	157	5,642,850
67	25	20	31	26	13	8	16	139	4,940,074
68	27	10	17	19	9	5	15	102	3,399,514
69	13	8	15	7	9	2	4	58	2,239,130
70 & Over	42	46	38	37	31	15	28	237	7,584,231
Totals	23,399	12,457	8,142	6,172	4,268	2,915	1,263	58,616	\$1,773,283,484

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 43.4 years.

Service: 9.8 years.

Annual Pay: \$30,253

Development of Actuarial Value of Assets

Valuation Date:	2001	2002	2003	2004	2005	2006
A. Actuarial Value Beginning of Year	\$ 5,216,897,196	\$ 5,881,232,850				
B. Market Value End of Year	5,432,767,672	5,024,940,249				
C. Market Value Beginning of Year	5,549,890,634	5,432,767,672				
D. Cash Flow						
D1. Contributions	217,836,340	213,477,292				
D2. Benefit Payments	(217,894,335)	(268,508,952)				
D3. Administrative Expenses	(5,749,965)	(5,753,805)				
D4. Net	(5,807,960)	(60,785,465)				
E. Investment Income						
E1. Market Total: B - C - D4	(111,315,002)	(347,041,958)				
E2. Assumed Rate	8.5%	8.5%				
E3. Amount for Immediate Recognition: E2*(A+D4*.5)	443,189,423	497,321,410				
E4. Amount for Phased-In Recognition: E1 - E3	(554,504,425)	(844,363,368)				
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.2 * E4	(110,900,885)	(168,872,674)				
F2. First Prior Year	(4,861,637)	(110,900,885)	\$ (168,872,674)			
F3. Second Prior Year	47,899,293	(4,861,638)	(110,900,885)	\$ (168,872,674)		
F4. Third Prior Year			(110,900,885)	\$ (168,872,674)		
F5. Fourth Prior Year				(110,900,885)	\$ (168,872,674)	
F6. Total Recognized Investment Gain: Sum(F1:F5)	(67,863,229)	(284,635,197)	(279,773,559)	(279,773,559)	(279,773,559)	(168,872,672)
G. Adjustment	294,817,420					
H. Actuarial Value End of Year: A + D4 + E3 + F6 + G						
Minimum 80% of B, Maximum 120% of B	5,881,232,850	6,033,133,598				
I. Difference Between Market & Actuarial Values: H - B	(448,465,178)	(1,008,193,349)				
J. Recognized Rate of Return	12.85%	3.64%				
K. Market Value Rate of Return	(2.01)%	(6.42)%				
L. Actuarial Value as a % of Market Value: H / B	108%	120%				

The actuarial value of assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) are phased in over a closed 5-year period. During periods when investment performance exceeds the assumed rate, the actuarial value of assets will tend to be less than market value. During periods when investment performance is less than assumed, the actuarial value will tend to be greater than market value. If assumed rates are exactly realized for 4 consecutive years, the actuarial value will become equal to market value.

Asset Summary

June 30, 2002

	Market Value	Actuarial Value
1. Assets at June 30, 2001	\$5,432,767,672	\$5,881,232,850
2. Contributions and Transfers in	213,477,292	213,477,292
3. Investment Increment*	(347,041,958)	212,686,213
4. Benefit Payments and Transfers out	268,508,952	268,508,952
5. Administrative and Misc. Expenses	5,753,805	5,753,805
6. Assets at June 30, 2002 (1) + (2) + (3) - (4) - (5)	\$5,024,940,249	\$6,033,133,598
7. Investment Increment/Mean Assets**	(6.42)%	3.64%

* *Net of investment expenses.*

** *Based on the approximation formula: $I / [.5 \times (A+B-I)]$, where*

I = Investment Increment

A = Beginning of year asset value

B = End of year asset value

Cash Flow Projection



Missouri State Employees' Retirement System

The Nature of Actuarial Projections

Regular actuarial valuations measure the Retirement System's present financial position and contributions adequacy by calculating and financing the liabilities created by the present benefit program. This process involves discounting to present values the future benefit payments on behalf of present active and retired members and their survivors. However, valuations do not produce information regarding future changes in the makeup of the covered group or the amounts of benefits to be paid or investment income to be received--actuarial projections do.

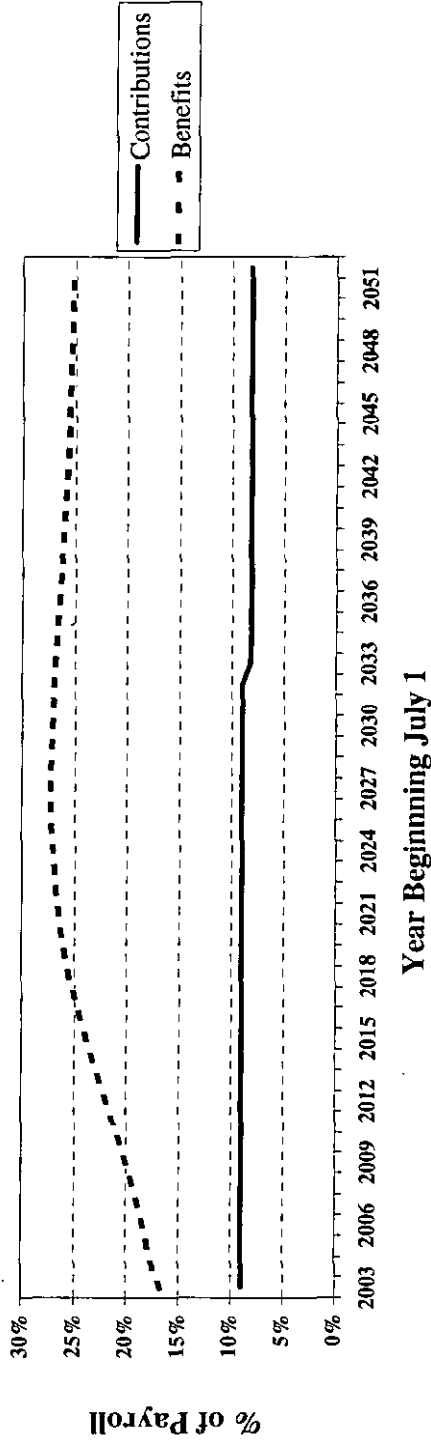
Whereas valuations provide a snapshot of the retirement system as of a given date, projections provide a moving picture. Projected active and retired groups are developed from year to year by the application of assumptions regarding pre-retirement withdrawal from service, retirements, deaths, disabilities, and the addition of new members. Projected information regarding the retired life group leads to assumed future benefit payout. Combining future benefit payments with assumed contributions and expected investment earnings produces the net cash flow of the System each year, and thus end of year asset levels.

Projections are used for many purposes. Among them are (i) developing cash flow patterns for investment policy and asset mix consideration, (ii) exploring the effect of alternative assumptions about future experience, (iii) analyzing the impact on system funding progress of changes in the workforce, and (iv) examining the potential effect of changes in benefits on system financial activity.

Projection results are useful in demonstrating changing relationships among key elements affecting system financial activity. For example: how benefits payable and system assets will grow in future decades. Projections are not predictions of specific future events and do not provide numeric precision in absolute terms. For instance, cash flow projected to occur 10 years in the future will not be exact (except by coincidence), but understanding the changed relationships between future benefit payout and future investment income can be very useful.

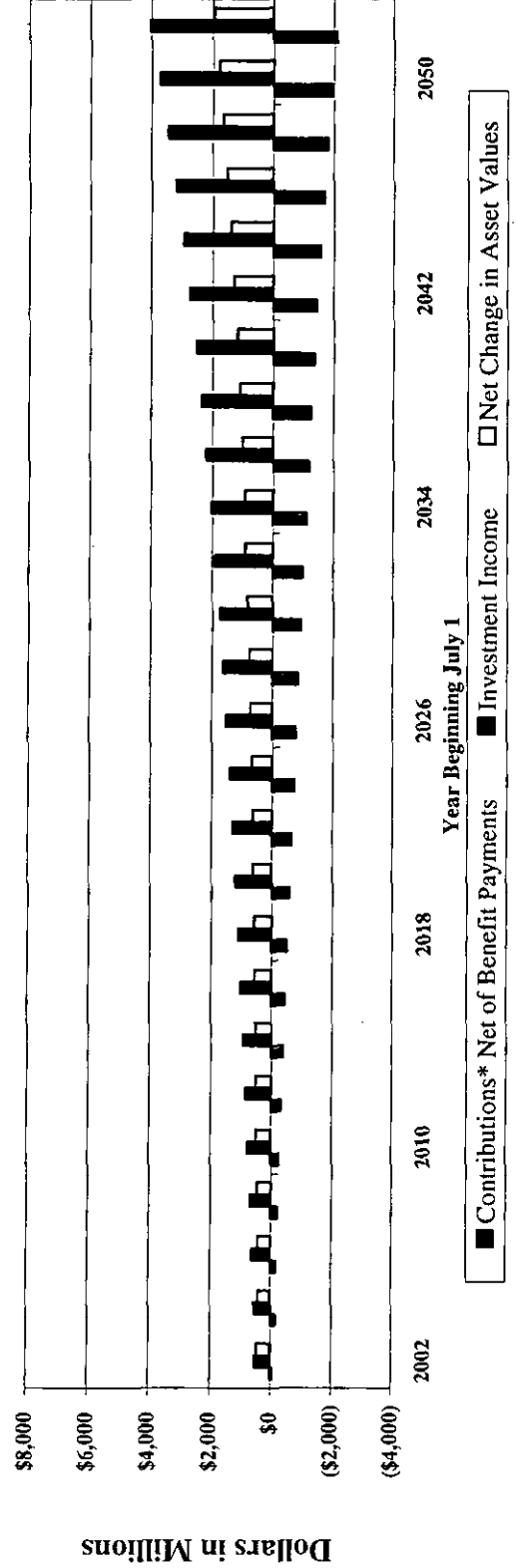
Missouri State Employees' Retirement System 50 Year Cash Flow Projection Based on Valuation Assumptions

Projected Contributions* and Benefits Expressed as Percents of Active Member Payroll



* Does not include contributions for administrative expenses.

Net Change in Asset Values



Missouri State Employees' Retirement System Fifty Year Cash Flow Projection (in Thousands)

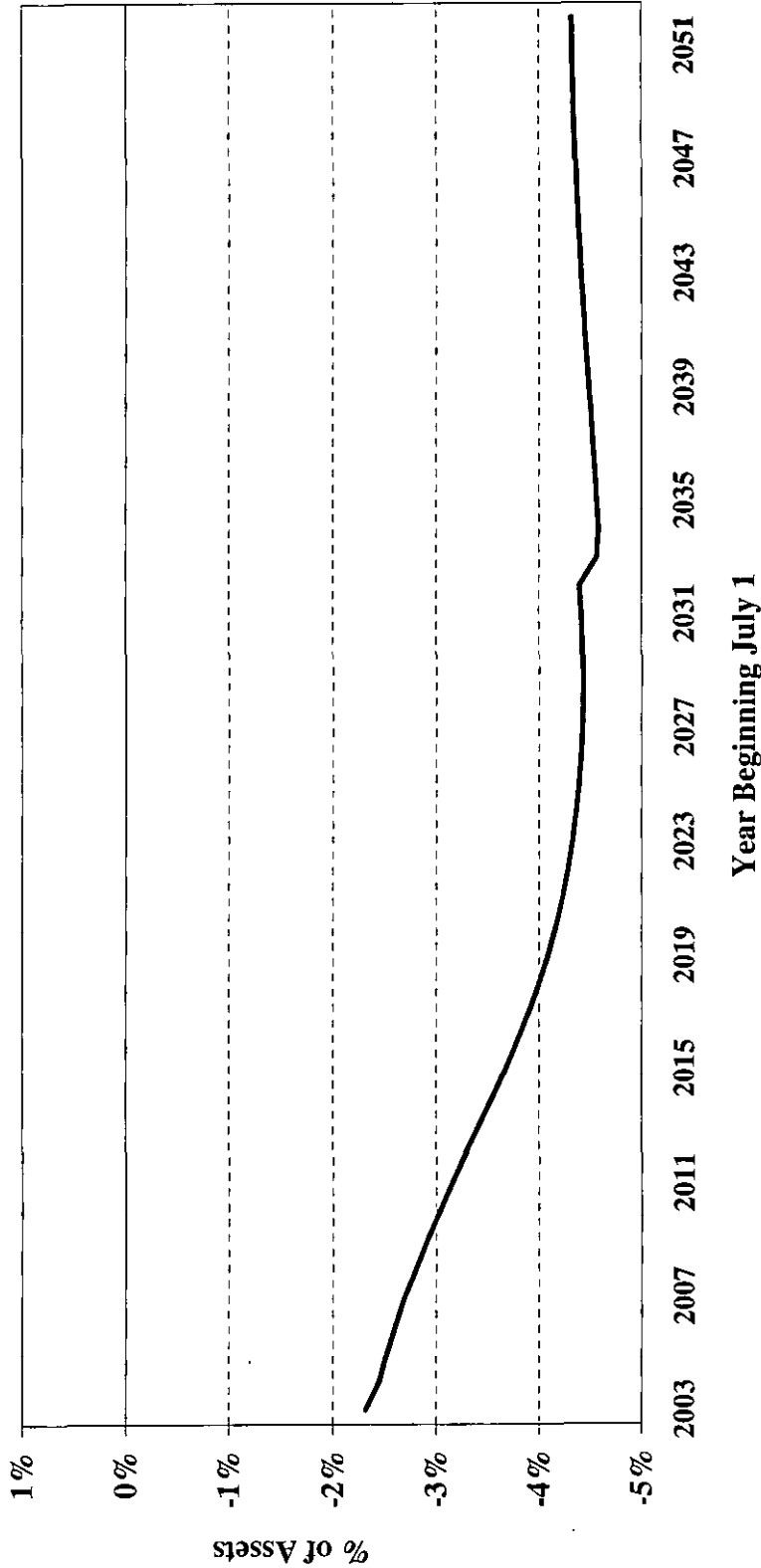
Year Ended June 30	Assets BOY	Contributions*			Benefits	Investment Income	Assets EOY	
		Normal	UAAL	Total			Inflated	2003 \$
2003	\$6,033,134	\$147,774	\$15,956	\$163,730	\$303,370	\$506,881	\$6,400,375	\$6,400,37
2004	6,400,375	151,116	16,317	167,433	324,028	537,377	6,781,157	6,520,34
2005	6,781,157	157,253	16,980	174,233	345,191	569,132	7,179,331	6,637,69
2006	7,179,331	163,568	17,661	181,229	368,147	602,300	7,594,713	6,751,67
2007	7,594,713	170,064	18,363	188,427	393,123	636,851	8,026,868	6,861,40
2008	8,026,868	176,740	19,084	195,824	420,934	672,715	8,474,473	6,965,39
2009	8,474,473	183,623	19,827	203,450	450,675	709,823	8,937,071	7,063,09
2010	8,937,071	190,756	20,597	211,353	482,541	748,125	9,414,008	7,153,87
2011	9,414,008	198,167	21,397	219,564	516,468	787,572	9,904,676	7,237,25
2012	9,904,676	205,871	22,229	228,100	553,009	828,089	10,407,856	7,312,42
2013	10,407,856	213,890	23,095	236,985	592,372	869,564	10,922,033	7,378,53
2014	10,922,033	222,239	23,996	246,235	633,434	911,917	11,446,751	7,435,59
2015	11,446,751	230,934	24,935	255,869	676,323	955,105	11,981,402	7,483,54
2016	11,981,402	240,006	25,915	265,921	720,170	999,112	12,526,265	7,522,95
2017	12,526,265	249,478	26,938	276,416	764,904	1,043,972	13,081,749	7,554,38
2018	13,081,749	259,382	28,007	287,389	810,643	1,089,710	13,648,205	7,578,36
2019	13,648,205	269,741	29,125	298,866	856,721	1,136,389	14,226,739	7,595,77
2020	14,226,739	280,571	30,295	310,866	902,949	1,184,110	14,818,766	7,607,55
2021	14,818,766	291,886	31,516	323,402	949,673	1,232,978	15,425,473	7,614,44
2022	15,425,473	303,695	32,792	336,487	996,611	1,283,111	16,048,460	7,617,28
2023	16,048,460	316,007	34,121	350,128	1,044,028	1,334,627	16,689,187	7,616,72
2024	16,689,187	328,838	35,506	364,344	1,092,046	1,387,655	17,349,140	7,613,38
2025	17,349,140	342,213	36,951	379,164	1,140,593	1,442,315	18,030,026	7,607,86
2026	18,030,026	356,143	38,455	394,598	1,189,712	1,498,760	18,733,672	7,600,74
2027	18,733,672	370,654	40,022	410,676	1,239,306	1,557,144	19,462,186	7,592,61
2028	19,462,186	385,767	41,653	427,420	1,289,637	1,617,643	20,217,612	7,583,96
2029	20,217,612	401,499	43,352	444,851	1,340,522	1,680,431	21,002,372	7,575,33
2030	21,002,372	417,866	45,119	462,985	1,392,134	1,745,713	21,818,936	7,567,16
2031	21,818,936	434,882	46,957	481,839	1,444,553	1,813,694	22,669,916	7,559,90
2032	22,669,916	452,557	48,865	501,422	1,498,071	1,884,586	23,557,853	7,553,85
2033	23,557,853	470,914	6,584	477,498	1,552,931	1,956,711	24,439,131	7,535,04
2034	24,439,131	489,982	0	489,982	1,609,067	2,029,765	25,349,811	7,515,21
2035	25,349,811	509,792	0	509,792	1,666,724	2,105,564	26,298,443	7,496,58
2036	26,298,443	530,379	0	530,379	1,726,255	2,184,543	27,287,110	7,479,23
2037	27,287,110	551,778	0	551,778	1,787,505	2,266,886	28,318,269	7,463,33
2038	28,318,269	574,020	0	574,020	1,850,718	2,352,792	29,394,363	7,448,98
2039	29,394,363	597,133	0	597,133	1,916,211	2,442,460	30,517,745	7,436,22
2040	30,517,745	621,150	0	621,150	1,984,344	2,536,073	31,690,624	7,425,01
2041	31,690,624	646,103	0	646,103	2,055,366	2,633,810	32,915,171	7,415,30
2042	32,915,171	672,029	0	672,029	2,129,519	2,735,846	34,193,527	7,407,02
2043	34,193,527	698,965	0	698,965	2,207,074	2,842,355	35,527,773	7,400,04
2044	35,527,773	726,953	0	726,953	2,288,228	2,953,507	36,920,005	7,394,26
2045	36,920,005	756,036	0	756,036	2,373,184	3,069,472	38,372,329	7,389,54
2046	38,372,329	786,262	0	786,262	2,462,096	3,190,425	39,886,920	7,385,78
2047	39,886,920	817,680	0	817,680	2,555,087	3,316,549	41,466,062	7,382,88
2048	41,466,062	850,343	0	850,343	2,652,365	3,448,029	43,112,069	7,380,71
2049	43,112,069	884,304	0	884,304	2,754,096	3,585,059	44,827,336	7,379,20
2050	44,827,336	919,618	0	919,618	2,860,440	3,727,839	46,614,353	7,378,23
2051	46,614,353	956,343	0	956,343	2,971,600	3,876,572	48,475,668	7,377,74
2052	48,475,668	994,538	0	994,538	3,087,742	4,031,471	50,413,935	7,377,63

* Does not include contributions for administrative expenses.

Missouri State Employees' Retirement System

50 Year Cash Flow Projection

Projected Net External Cash Flow Expressed as a Percent of Assets



Net External Cash Flow equals: i) Contributions to the plan, less ii) Benefits paid by the plan. A negative Net External Cash Flow means that benefits are being partly funded by investment income --- a natural consequence of advance funding.

**Missouri State Employees' Retirement System
Fifty Year Cash Flow Projection
Analysis of Projected Net Cash Flow**

Year Ended June 30	External Cash Flow		Net External Cash Flow		Year Ended June 30	External Cash Flow		Net External Cash Flow	
	Inflow*	Outflow	\$	% of Assets		Inflow*	Outflow	\$	% of Assets
2003	\$163,730	\$303,370	\$ (139,640)	(2.31)%	2028	\$427,420	\$1,289,637	\$ (862,217)	(4.43)%
2004	167,433	324,028	(156,595)	(2.45)%	2029	444,851	1,340,522	(895,671)	(4.43)%
2005	174,233	345,191	(170,958)	(2.52)%	2030	462,985	1,392,134	(929,149)	(4.42)%
2006	181,229	368,147	(186,918)	(2.60)%	2031	481,839	1,444,553	(962,714)	(4.41)%
2007	188,427	393,123	(204,696)	(2.70)%	2032	501,422	1,498,071	(996,649)	(4.40)%
2008	195,824	420,934	(225,110)	(2.80)%	2033	477,498	1,552,931	(1,075,433)	(4.57)%
2009	203,450	450,675	(247,225)	(2.92)%	2034	489,982	1,609,067	(1,119,085)	(4.58)%
2010	211,353	482,541	(271,188)	(3.03)%	2035	509,792	1,666,724	(1,156,932)	(4.56)%
2011	219,564	516,468	(296,904)	(3.15)%	2036	530,379	1,726,255	(1,195,876)	(4.55)%
2012	228,100	553,009	(324,909)	(3.28)%	2037	551,778	1,787,505	(1,235,727)	(4.53)%
2013	236,985	592,372	(355,387)	(3.41)%	2038	574,020	1,850,718	(1,276,698)	(4.51)%
2014	246,235	633,434	(387,199)	(3.55)%	2039	597,133	1,916,211	(1,319,078)	(4.49)%
2015	255,869	676,323	(420,454)	(3.67)%	2040	621,150	1,984,344	(1,363,194)	(4.47)%
2016	265,921	720,170	(454,249)	(3.79)%	2041	646,103	2,055,366	(1,409,263)	(4.45)%
2017	276,416	764,904	(488,488)	(3.90)%	2042	672,029	2,129,519	(1,457,490)	(4.43)%
2018	287,389	810,643	(523,254)	(4.00)%	2043	698,965	2,207,074	(1,508,109)	(4.41)%
2019	298,866	856,721	(557,855)	(4.09)%	2044	726,953	2,288,228	(1,561,275)	(4.39)%
2020	310,866	902,949	(592,083)	(4.16)%	2045	756,036	2,373,184	(1,617,148)	(4.38)%
2021	323,402	949,673	(626,271)	(4.23)%	2046	786,262	2,462,096	(1,675,834)	(4.37)%
2022	336,487	996,611	(660,124)	(4.28)%	2047	817,680	2,555,087	(1,737,407)	(4.36)%
2023	350,128	1,044,028	(693,900)	(4.32)%	2048	850,343	2,652,365	(1,802,022)	(4.35)%
2024	364,344	1,092,046	(727,702)	(4.36)%	2049	884,304	2,754,096	(1,869,792)	(4.34)%
2025	379,164	1,140,593	(761,429)	(4.39)%	2050	919,618	2,860,440	(1,940,822)	(4.33)%
2026	394,598	1,189,712	(795,114)	(4.41)%	2051	956,343	2,971,600	(2,015,257)	(4.32)%
2027	410,676	1,239,306	(828,630)	(4.42)%	2052	994,538	3,087,742	(2,093,204)	(4.32)%

The portion of investment income needed to pay benefits (the negative external cash flow) increases gradually and begins to level off at the end of the amortization of the unfunded accrued liabilities. After this period, it then approaches the assumed rate of 4.33% (1.085/1.040, minus 1). The remainder of the expected investment income is needed to preserve the purchasing power of the trust fund.

* Does not include contributions for administrative expenses.

Appendix



Appendix
Summary of Assumptions Used
for the June 30, 2002 Actuarial Valuation

-----*Economic Assumptions*-----

The investment return rate used in the valuations was 8.5% per year, compounded annually (net after investment expenses). This assumption is used to account for the fact that equal amounts of money payable at different points in time in the future do not have the same value presently.

Pay increase assumptions for individual active members are shown for sample ages on page 57. Part of the assumption for each age is for merit and/or seniority increase, and the other 4.0% recognizes wage inflation. This assumption is used to project a member's current salary to the salaries upon which benefits will be based.

The active member payroll is assumed to increase 4.0% annually, which is the portion of the individual pay increase assumptions attributable to inflation.

The annual cost-of-living adjustment (COLA) is assumed to be 4.00%, on a compounded basis, when a minimum COLA of 4% is in effect. The annual COLA is assumed to be 2.8 %, on a compounded basis, when no minimum COLA is in effect.

The number of active members is assumed to decline gradually by approximately 4-5% over the next 25 years due to certain new hires on or after July 1, 2002 participating in the Regional Colleges Retirement Plan. Active and retired member data is reported as of May 31. It is assumed for valuation purposes that there is no turnover among members and no new entrants during the month of June.

-----*Non-Economic Assumptions*-----

The mortality table, for post-retirement mortality, used in evaluating allowances to be paid was the 1971 Group Annuity Mortality Table, projected to the year 2000, with a 1 year setback for men and a 7 year age setback for women. Related values are shown on page 58. This assumption is used to measure the probabilities of each benefit payment being made after retirement.

Appendix

Summary of Assumptions Used for the June 30, 2002 Actuarial Valuation (continued)

The probabilities of age and service retirement are shown on page 58. The first two years of eligibility if prior to age 70, were halved due to the expected emerging effect of the back DROP. It was assumed that each member will be granted one half year of service credit for unused leave upon retirement and military service purchases.

The probabilities of withdrawal from service, disability and death-in-service are shown for sample ages on page 57. For disability retirement, impaired longevity was recognized by use of special mortality tables.

The entry age normal actuarial cost method of valuation was used in determining liabilities and normal cost. The normal cost was based on the benefit provisions affecting new employees (MSEP 2000). Differences in the past between assumed experience and actuarial experience ("actuarial gains and losses") become part of actuarial accrued liabilities. Unfunded actuarial accrued liabilities are amortized to produce payments, (principal & interest) which are level percents of payroll contributions.

Employer contribution dollars were assumed to be *paid in equal installments* throughout the employer's fiscal year.

The asset valuation method fully recognizes expected investment return and averages unanticipated market return over a five-year period.

The data about persons now covered and about present assets were furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

It is assumed that among active members 80% are married at retirement, 70% of those dying in active service are married, and men are 3 years older than their spouses.

The liabilities for active members hired on or after July 1, 2000 were based on MSEP 2000 benefits. The liabilities for active members hired before July 1, 2000 for male General Employees with an age at hire of 35 years or less, for female General Employees, for Contract Employees, for Elected and for General Assembly were based on MSEP 2000 benefits. All others were based on MSEP benefits. The backDROP was only explicitly valued for those assumed to receive MSEP 2000 benefits.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.).

Separations From Active Employment Before Service Retirement & Individual Pay Increase Assumptions

June 30, 2002

Sample Ages	Years of Service	Withdrawal		Percent of Active Members Separating within the Next Year -----				Disability		Pay Increase Assumptions -- For An Individual Employee --		
		Men	Women	Men	Women	Men	Women	Men	Women	Merit & Seniority** (Economy)	Base	Increase Next Year
		25.2 %	24.7 %									
	0	12.0	11.0	0.04 %	0.03 %	0.00 %	0.00 %	0.00 %	2.7 %	4.0 %	6.7 %	
	1	17.1	17.7									
	2	14.4	14.4	0.05	0.04	0.05	0.03	0.03	2.6	4.0	6.6	
	3	12.8	12.8	0.06	0.04	0.12	0.04	0.04	2.2	4.0	6.2	
	4	12.0	12.0	0.08	0.06	0.16	0.13	0.13	1.9	4.0	5.9	
	5+	4.6	4.9	0.12	0.08	0.21	0.21	0.21	1.4	4.0	5.4	
20		3.5	4.3	0.19	0.11	0.29	0.25	0.25	1.2	4.0	5.2	
25		2.8	3.6	0.35	0.17	0.41	0.41	0.41	0.7	4.0	4.7	
30		8.8	8.9	0.06	0.04	0.12	0.04	0.04	2.2	4.0	6.2	
35		6.2	6.0	0.08	0.06	0.16	0.13	0.13	1.9	4.0	5.9	
40		4.6	4.9	0.12	0.08	0.21	0.21	0.21	1.4	4.0	5.4	
45		3.5	4.3	0.19	0.11	0.29	0.25	0.25	1.2	4.0	5.2	
50		2.8	3.6	0.35	0.17	0.41	0.41	0.41	0.7	4.0	4.7	
55		2.4	2.9	0.59	0.31	0.77	0.85	0.85	0.7	4.0	4.7	
60		2.4	2.9	0.90	0.54	1.40	1.50	1.50	0.0	4.0	4.0	
65		2.4	2.9	1.44	0.83	0.00	0.00	0.00	0.0	4.0	4.0	

* 2% of the deaths in active service are assumed to be duty related.

** Does not apply to members of the General Assembly.

Single Life Retirement Values
June 30, 2002

Sample Attained Ages	Present Value of \$1/Month the First Year Increasing 4.0% / 2.8% Yearly				Future Life Expectancy (Years)			
	Service		Disability		Service		Disability	
	Men	Women	Men	Women	Men	Women	Men	Women
40	\$202.23	\$212.07	\$135.46	\$156.68	38.46	44.22	19.70	26.02
45	191.81	204.06	126.32	150.16	33.73	39.41	17.50	23.70
50	179.47	194.06	116.10	142.75	29.17	34.67	15.35	21.39
55	165.25	182.08	106.06	135.11	24.82	30.06	13.43	19.18
60	148.90	168.25	97.62	126.74	20.70	25.67	11.87	17.01
65	130.43	152.36	90.66	117.09	16.82	21.50	10.56	14.82
70	110.79	134.27	82.12	105.05	13.32	17.57	9.13	12.50
75	91.75	114.73	70.79	89.33	10.36	13.99	7.49	10.00
80	73.37	95.50	56.17	71.93	7.83	10.91	5.66	7.62
85	57.86	76.89	42.26	56.17	5.89	8.29	4.08	5.66

Percent of Eligible Active Members Retiring Next Year

Retirement Ages	Percent	
	Men	Women
50	25.0 %	20.0 %
51	25.0	19.5
52	21.0	18.5
53	17.0	16.0
54	12.5	12.5
55	6.5	6.7
56	6.5	6.7
57	6.5	6.7
58	6.5	6.7
59	6.5	8.3
60	9.5	12.0
61	13.0	16.5
62	29.0	28.0
63	24.0	18.0
64	30.0	33.0
65	40.0	50.0
66	32.0	27.0
67	26.0	27.0
68	23.0	27.0
69	23.0	27.0
70	23.0	27.0
71	23.0	27.0
72	23.0	27.0
73	23.0	27.0
74	23.0	27.0
75 & over	100.0	100.0

Summary of Assumptions Used
June 30, 2002
Miscellaneous and Technical Assumptions

Pay Increase Timing:	Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	Decrements of all types are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Benefit Service:	Exact fractional service is used to determine the amount of the benefit payable.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.
Normal Form of Benefit:	The assumed normal form of benefit is the straight life form for MSEP 2000 with 50% continuing to an eligible surviving spouse for MSEP. No adjustment has been made for post-retirement option election changes.
Loads:	No loads were used.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. New entrant normal cost contributions are applied to the funding of new entrant benefits.

Supplemental Disclosure Information
June 30, 2002

Actuarial Accrued Liability

The actuarial accrued liability is a measure intended to (i) help users assess the plan's funding status on a going-concern basis, and (ii) assess progress being made in accumulating sufficient assets to pay benefits when due. The actuarial value of assets is based on a method that fully recognizes expected investment return and averages unanticipated market return over a three-year period. Allocation of the actuarial present value of projected benefits between past and future service was based on service using the entry age actuarial cost method. Assumptions, including projected pay increases, were the same as used to determine the System's annual required contribution between entry age and assumed exit age. Entry age was established by subtracting credited service from current age on the valuation date.

The entry age actuarial accrued liability was determined as part of an actuarial valuation of the System as of June 30, 2002. Significant actuarial assumptions used in determining the entry age actuarial accrued liability include (a) a rate of return on the investment of present and future assets of 8.5% per year compounded annually, (b) projected salary increases of 4.0% per year compounded annually, attributable to inflation, (c) additional projected salary increases ranging from 0.0% to 2.7% per year, depending on age, attributable to seniority/merit, and (d) the assumption that benefits will increase after retirement (i) at 4.00% per year for approximately the first 12 years, 3.1% for the 13th year and 2.8% per year thereafter, or (ii) at 2.8% per year, depending upon date of hire and benefit election.

At June 30, 2002, the unfunded actuarial accrued liability of the System was determined as follows:

Actuarial Accrued Liability of System:	<u>\$ in Thousands</u>
Active members (35,343 vested, 23,273 non-vested)	\$ 3,164,792
Retirees and beneficiaries currently receiving benefits (21,502 vested)	2,715,873
Terminated members not yet receiving benefits (12,257 vested)	413,024
Future BackDROP Payments	<u>584</u>
Total Actuarial Accrued Liability	6,294,272
Actuarial Value of Assets	6,033,134
Unfunded Actuarial Accrued Liability	<u><u>\$ 261,139</u></u>

During the year ended June 30, 2002, the System experienced a net change of \$229,106 thousand in the actuarial accrued liability of which \$(103,472) was attributable to changes in methods. There were no changes in benefit provisions or in actuarial assumptions.

**- Supplemental Disclosure Information
June 30, 2002**

(continued)

Contributions Required and Contributions Made

The System's funding policy provides for periodic employer contributions at actuarially determined rates that, expressed as percentages of annual covered payroll, are designed to accumulate sufficient assets to pay benefits when due. In developing the annual required contribution shown below, the normal cost and actuarial accrued liability are determined using the entry age actuarial cost method. The unfunded actuarial accrued liability is being amortized on a closed basis as a level percent of payroll over a period of 33 years. The corresponding amortization factor is 16.79839.

During the year ended June 30, 2002 contributions totaling \$209,515,026 were made by the employer.

Schedule of Employer Contributions

Fiscal Year 7-1/6-30	Valuation Date 6/30	Annual Required Contribution		
		Percent	Dollar Amount	Percentage Contributed
1991-92	1990	9.65 %	\$ 100,672,145	100 %
1992-93	1991	9.68	102,988,219	100
1993-94	1992	9.49	106,681,308	100
1994-95	1993	9.04	108,902,372	100
1995-96	1994	10.69	137,007,112	100
1996-97	1995	10.66	146,383,371	100
1997-98	1996	10.40	152,090,687	100
1998-99	1997	12.58	197,909,834	100
1999-00	1998	11.91	202,330,547	100
2000-01	1999	11.59	209,515,026	100
2001-02	2000	11.59		
2002-03	2001	8.81		
2003-04	2002	9.35		

Supplemental Disclosure Information
June 30, 2002

(concluded)

Schedule of Funding Progress

Plan Year Ended	(1) Actuarial Value of Assets	(2) Actuarial Accrued Liability (AAL) Entry Age	(3) Percent Funded (1) / (2)	(4) Unfunded AAL (2) - (1)	(5) Annual Covered Payroll	(6) Unfunded AAL as a Percentage of Covered Payroll (4) / (5)
6/30/1990 *	\$1,587,114,827	\$1,861,365,216	85.3 %	\$274,250,389	\$ 994,228,494	27.6 %
6/30/1991 #	1,793,370,043	2,052,600,760	87.4	259,230,717	1,027,719,059	25.2
6/30/1992 #*	1,991,215,165	2,291,583,890	86.9	300,368,725	1,030,240,894	29.2
6/30/1993	2,236,558,739	2,447,222,060	91.4	210,663,321	1,063,246,615	19.8
6/30/1994 #	2,425,134,504	2,919,456,425	83.1	494,321,921	1,124,862,008	43.9
6/30/1995	2,649,077,134	3,150,796,580	84.1	501,719,446	1,198,938,042	41.8
6/30/1996 *	2,927,896,643	3,440,126,483	85.1	512,229,840	1,267,605,000	40.4
6/30/1997 #*@	3,580,974,502	4,484,047,801	79.9	903,073,299	1,359,656,666	66.4
6/30/1998	4,210,635,094	4,918,887,183	85.6	708,252,089	1,459,712,203	48.5
6/30/1999 #	4,908,820,033	5,505,968,629	89.2	597,148,596	1,564,551,532	38.2
6/30/2000 *	5,216,897,196	5,920,684,192	88.1	703,786,996	1,683,697,080	41.8
6/30/2001 #*@	5,881,232,850	6,065,166,716	97.0	183,933,866	1,758,190,269	10.5
6/30/2002	6,033,133,598	6,294,272,275	95.9	261,138,677	1,773,283,484	14.7

After changes in benefit provisions.

* After a change in assumptions.

@ After a change in asset method.

Analysis of the dollar amounts of the actuarial value of assets, actuarial accrued liability, or unfunded actuarial accrued liability in isolation can be misleading. Expressing the actuarial value of assets as a percentage of the actuarial accrued liability provides one indication of the plan's funded status on a going-concern basis. Analysis of this percentage over time indicates whether the plan is becoming financially stronger or weaker. Generally, the greater this percentage, the stronger the plan. The unfunded actuarial accrued liability and annual covered payroll are both affected by inflation. Usually expressing the unfunded actuarial accrued liability as a percentage of annual covered payroll approximately adjusts for the effects of inflation and aids analysis of the progress being made in accumulating sufficient assets to pay benefits when due. Generally, the smaller this percentage, the stronger the plan.

June 30, 2002 Actuarial Valuation

Glossary

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent. A series of payments is called an actuarial equivalent of another series of payments if the two series have the same actuarial present value.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial value of assets. Also referred to as funding value of assets, smoothed market value of assets, or valuation assets.

Valuation assets recognize assumed investment return fully each year. Differences between actual and assumed investment return are phased in over a closed 5-year period. This treatment helps remove the timing of investment activities from the valuation process. During periods when investment performance exceeds the assumed rate, valuation assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, valuation assets will tend to be greater than market value. If assumed rates are exactly realized for 4 consecutive years, valuation assets will become equal to market value.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

(continued on next page)

June 30, 2002 Actuarial Valuation

Glossary

(concluded)

Plan Termination Liability. The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a "going concern" basis and is not normally determined in a routine actuarial valuation.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and actuarial value of assets. Sometimes referred to as "unfunded accrued liability."

The existence of unfunded actuarial accrued liabilities is not in itself bad, any more than a mortgage on a house is bad. Unfunded actuarial accrued liabilities do not represent a debt that is payable today. What is important is the ability to amortize the unfunded actuarial accrued liabilities and the trend in their amount (after due allowance for devaluation of the dollar).

Valuation Payroll. Active member payroll that is intended to reflect the annual salary considered as covered compensation for Retirement System benefits.

**Financing Unfunded Actuarial Accrued Liabilities
Which Were Calculated Using an Inflation Assumption of 4.00% and
an Investment Return Assumption of 8.50% Compounded Annually**

*Level % of Payroll Amortization:
Closed Amortization Completed in 33 Years*

Year	Active Employee Payroll	Unfunded Actuarial Accrued Liability	UAAL Adjusted for Inflation	Annual Contributions		UAAL as % of Payroll
				Dollars	% of Payroll	
-----\$ in millions-----						
1	\$1,773	\$261	\$261	\$16	0.88 %	14.73 %
2	1,773	267	257	16	0.88	15.06
3	1,844	274	253	16	0.88	14.84
4	1,918	280	249	17	0.88	14.60
5	1,995	286	245	17	0.88	14.36
6	2,074	292	240	18	0.88	14.10
7	2,157	298	236	19	0.88	13.83
8	2,244	304	231	20	0.88	13.55
9	2,334	309	226	20	0.88	13.26
10	2,427	314	221	21	0.88	12.95
11	2,524	319	215	22	0.88	12.64
12	2,625	323	210	23	0.88	12.30
13	2,730	326	204	24	0.88	11.96
14	2,839	329	198	25	0.88	11.60
15	2,953	331	191	26	0.88	11.22
16	3,071	333	185	27	0.88	10.83
17	3,194	333	178	28	0.88	10.42
18	3,321	332	170	29	0.88	9.99
19	3,454	330	163	30	0.88	9.55
20	3,592	326	155	31	0.88	9.08

**Financing Unfunded Actuarial Accrued Liabilities
Which Were Calculated Using an Inflation Assumption of 4.00% and
an Investment Return Assumption of 8.50% Compounded Annually**

*Level % of Payroll Amortization:
Closed Amortization Completed in 33 Years
(concluded)*

Year	Active Employee Payroll	Unfunded Actuarial Accrued Liability	UAAL Adjusted for Inflation	Annual Contributions		UAAL as % of Payroll
				Dollars	% of Payroll	
-----\$ in millions-----						
21	\$3,736	\$321	\$147	\$33	0.88 %	8.59 %
22	3,885	314	138	34	0.88	8.09
23	4,041	305	129	35	0.88	7.56
24	4,203	295	120	37	0.88	7.01
25	4,371	281	110	38	0.88	6.43
26	4,545	265	99	40	0.88	5.83
27	4,727	246	89	41	0.88	5.21
28	4,916	224	78	43	0.88	4.56
29	5,113	198	66	45	0.88	3.87
30	5,318	168	54	47	0.88	3.16
31	5,530	134	41	48	0.88	2.42
32	5,751	95	28	50	0.88	1.65
33	5,982	50	14	52	0.88	0.84
34	6,221	0	0	0	0.00	0.00

Basic Series

Year-by-Year Total Returns (1926-2001)

For a type of investment,
Red means a REAL Return less than 3%
[(Total - Inflation)<3%]

For Inflation,
RED means a purchasing power loss

Year	Large Company Stocks	Small Company Stocks	Long-Term Corporate Bonds	Long-Term Government Bonds	Intermediate Term Government Bonds	U.S. Treasury Bills	Inflation
1926	11.62	0.28	7.37	7.77	5.38	3.27	-1.49
1927	37.49	22.10	7.44	8.93	4.52	3.12	-2.08
1928	43.61	39.69	2.84	0.10	0.92	3.56	-0.97
1929	-8.42	-51.36	3.27	1.17	6.01	4.75	0.20
1930	-24.90	-38.15	7.98	4.66	6.72	2.41	-6.03
1931	-43.34	-49.75	-1.85	-5.31	-2.32	1.07	-9.52
1932	-8.19	-5.39	10.32	16.84	8.81	0.96	-10.30
1933	53.99	142.87	10.38	-0.07	1.83	0.30	0.51
1934	-1.44	24.22	13.84	10.03	9.00	0.16	2.03
1935	47.67	40.19	9.61	4.98	7.01	0.17	2.99
1936	33.92	64.80	6.74	7.52	3.06	0.18	1.21
1937	-35.03	-58.01	2.75	0.23	1.56	0.31	3.10
1938	31.12	32.80	6.13	5.53	6.23	-0.02	-2.78
1939	-0.41	0.35	3.97	5.94	4.52	0.02	-0.48
1940	-9.78	-5.16	3.39	6.09	2.96	0.00	0.96
1941	-11.59	-9.00	2.73	0.93	0.50	0.06	9.72
1942	20.34	44.51	2.60	3.22	1.94	0.27	9.29
1943	25.90	88.37	2.83	2.08	2.81	0.35	3.16
1944	19.75	53.72	4.73	2.81	1.80	0.33	2.11
1945	36.44	73.61	4.08	10.73	2.22	0.33	2.25
1946	-8.07	-11.63	1.72	-0.10	1.00	0.35	18.16
1947	5.71	0.92	-2.34	-2.62	0.91	0.50	9.01
1948	5.50	-2.11	4.14	3.40	1.85	0.81	2.71
1949	18.79	19.75	3.31	6.45	2.32	1.10	-1.80
1950	31.71	38.75	2.12	0.06	0.70	1.20	5.79
1951	24.02	7.80	-2.69	-3.93	0.36	1.49	5.87
1952	18.37	3.03	3.52	1.16	1.63	1.66	0.88
1953	-0.99	-6.49	3.41	3.64	3.23	1.82	0.62
1954	52.62	60.58	5.39	7.19	2.68	0.86	-0.50
1955	31.56	20.44	0.48	-1.29	-0.65	1.57	0.37
1956	6.56	4.28	-6.81	-5.59	-0.42	2.46	2.86
1957	-10.78	-14.57	8.71	7.46	7.84	3.14	3.02
1958	43.36	64.89	-2.22	-6.09	-1.29	1.54	1.76
1959	11.96	16.40	-0.97	-2.26	-0.39	2.95	1.50
1960	0.47	-3.29	9.07	13.76	11.76	2.66	1.48
1961	26.89	32.09	4.82	0.97	1.85	2.13	0.67
1962	-8.73	-11.90	7.95	6.89	5.56	2.73	1.22
1963	22.80	23.57	2.19	1.21	1.64	3.12	1.65
1964	16.48	23.52	4.77	3.51	4.04	3.54	1.19
1965	12.45	41.75	-0.46	0.71	1.02	3.93	1.92
1966	-10.06	-7.01	0.20	3.65	4.69	4.76	3.35
1967	23.98	83.57	-4.95	-9.18	1.01	4.21	3.04
1968	11.06	35.97	2.57	-0.26	4.54	5.21	4.72
1969	-8.50	-25.05	-8.09	-5.07	-0.74	6.58	6.11
1970	4.01	-17.43	18.37	12.11	16.86	6.52	5.49
1971	14.31	16.50	11.01	13.23	8.72	4.39	3.36
1972	18.98	4.43	7.26	5.69	5.16	3.84	3.41
1973	-14.66	-30.90	1.14	-1.11	4.61	6.93	8.80
1974	-26.47	-19.95	-3.06	4.35	5.69	8.00	12.20
1975	37.20	52.82	14.64	9.20	7.83	5.80	7.01
1976	23.84	57.38	18.65	16.75	12.87	5.08	4.81
1977	-7.18	25.38	1.71	-0.69	1.41	5.12	6.77
1978	6.56	23.46	-0.07	-1.18	3.49	7.18	9.03
1979	18.44	43.46	-4.18	-1.23	4.09	10.38	13.31
1980	32.42	39.88	-2.62	-3.95	3.91	11.24	12.40
1981	-4.91	13.88	-0.96	1.86	9.45	14.71	8.94
1982	21.41	28.01	43.79	40.36	29.10	10.54	3.87
1983	22.51	39.67	4.70	0.65	7.41	8.80	3.80
1984	6.27	-6.67	16.39	15.48	14.02	9.85	3.95
1985	32.16	24.66	30.09	30.97	20.33	7.72	3.77
1986	18.47	6.85	19.85	24.53	15.14	6.16	1.13
1987	5.23	-9.30	-0.27	-2.71	2.90	5.47	4.41
1988	16.81	22.87	10.70	9.67	6.10	6.35	4.42
1989	31.49	10.18	16.23	18.11	13.29	8.37	4.65
1990	-3.17	-21.56	6.78	6.18	9.73	7.81	6.11
1991	30.55	44.63	19.89	19.30	15.46	5.60	3.06
1992	7.67	23.35	9.39	8.05	7.19	3.51	2.90
1993	9.99	20.98	13.19	18.24	11.24	2.90	2.75
1994	1.31	3.11	-5.76	-7.77	-5.14	3.90	2.67
1995	37.43	34.46	27.20	31.67	16.80	5.60	2.54
1996	23.07	17.62	1.40	-0.93	2.10	5.21	3.32
1997	33.36	22.78	12.95	15.85	8.38	5.26	1.70
1998	28.58	-7.31	10.76	13.06	10.21	4.86	1.61
1999	21.04	29.79	-7.45	-8.96	-1.77	4.68	2.68
2000	-9.11	-3.59	12.87	21.48	12.59	5.89	3.39
2001	-11.88	22.77	10.65	3.70	7.62	3.83	1.55

GABRIEL, ROEDER, SMITH & COMPANY from SBBi 2002 Yearbook