

**Missouri State Employees' Retirement System**  
**Annual Actuarial Valuation as of June 30, 2006**

**Table of Contents**

**Pages**

1	Cover Letter
2-6	<b>Financial Principles</b>
	<b>Valuation Results</b>
7-9	Employer Contribution Rate
10	Actuarial Present Values
11	Comments on Valuation Results
12-15	Comparative Schedule
	<b>Gain (Loss) Analysis</b>
16-17	Comments
18-20	Derivation of Gain (Loss)
21	Comparative Statement
22	Development of Gain (Loss) from Investment Income
23-29	Member Experience
	<b>Data Used in Valuations</b>
30-38	Summary of Benefit Provisions
39-41	Retired Lives
42-43	Active & Inactive Members
44-45	Financial Information
	<b>Cash Flow Projection</b>
46	The Nature of Actuarial Projections
47-50	Basic Cash Flow Projections
	<b>Appendix</b>
51-55	Actuarial Assumptions and Methods
56-58	Supplemental Disclosure Information
59-60	Glossary
61-62	Financing Unfunded Actuarial Accrued Liabilities
63-64	Active Member Breakdown by Male and Female
65	History of Results from The Investment Universe

September 13, 2006

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

**Re: Actuarial Valuation as of June 30, 2006**

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, 2007.

The date of the valuation was **June 30, 2006**.

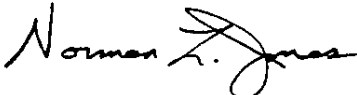
The valuation was based upon data, furnished by the MOSERS' staff, concerning active, inactive and retired members along with pertinent financial information. The complete cooperation of the MOSERS' staff in furnishing materials requested is hereby acknowledged with appreciation.

**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, 2006, 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,



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:lr

# 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).

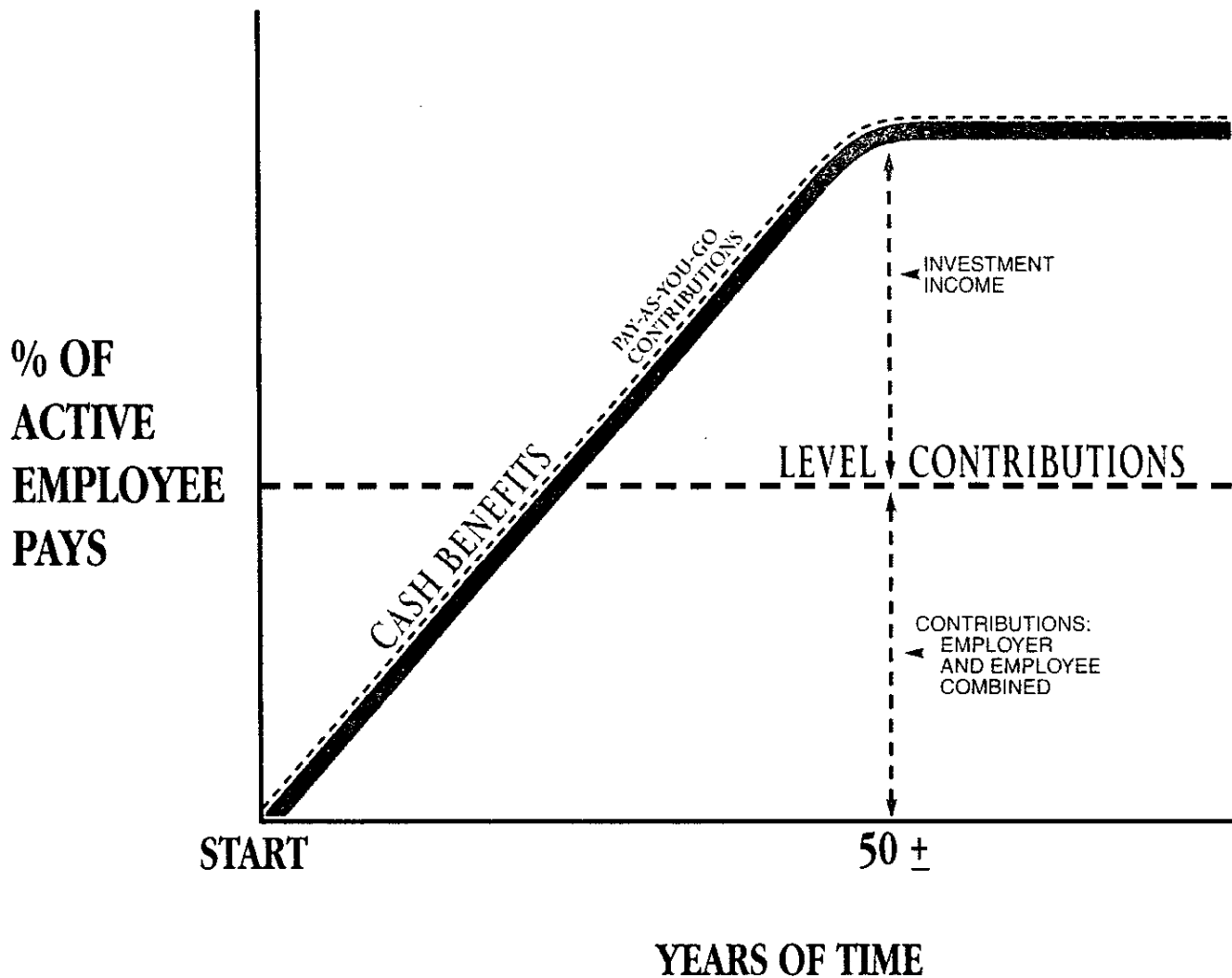
***Computing Contributions To Support Funded Benefits.*** From a given schedule of benefits and from the member data and asset data provided, the actuary determines the contribution rates to support the benefits, by means of ***an actuarial valuation and a funding method.***

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.***



**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 the 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

---

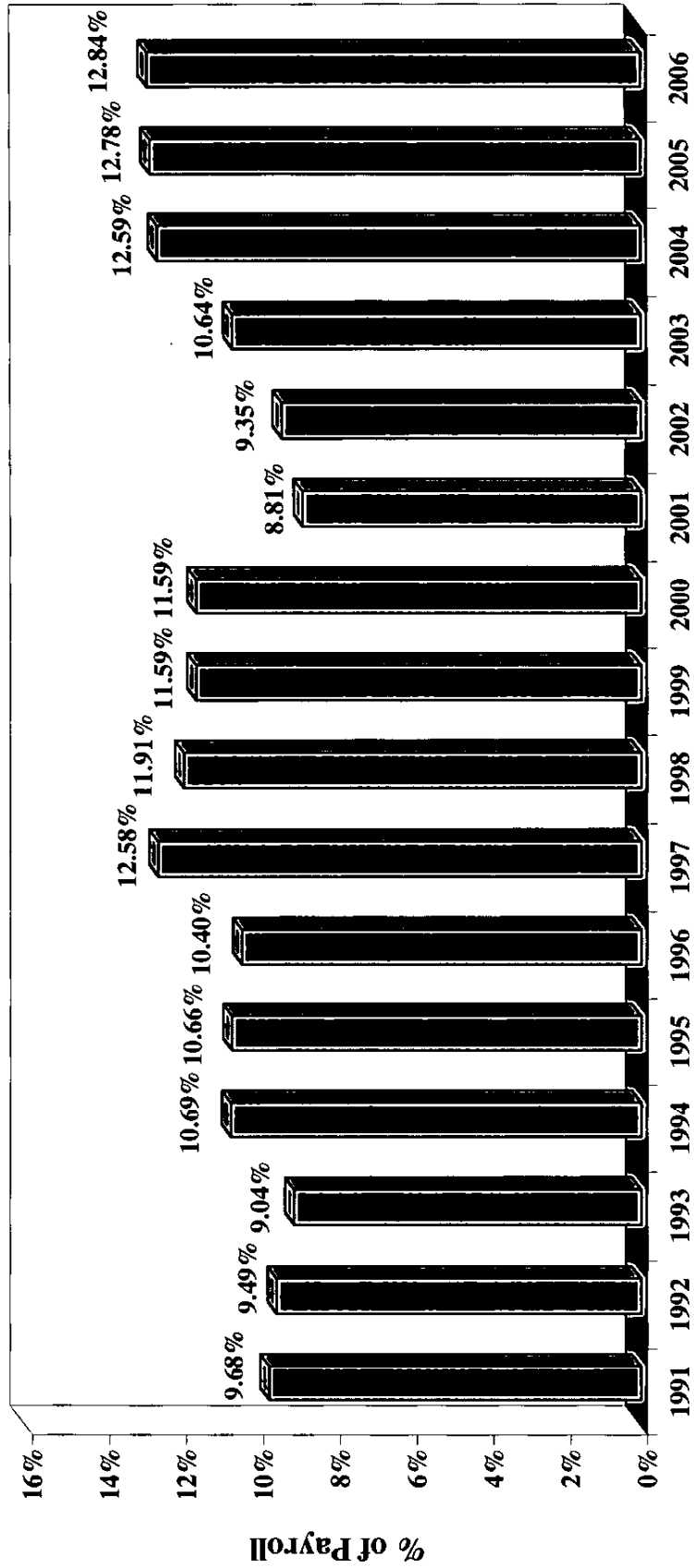
**Computed Employer Contribution Rate**  
**Expressed as Percents of Active Member Payroll**

**June 30, 2006**

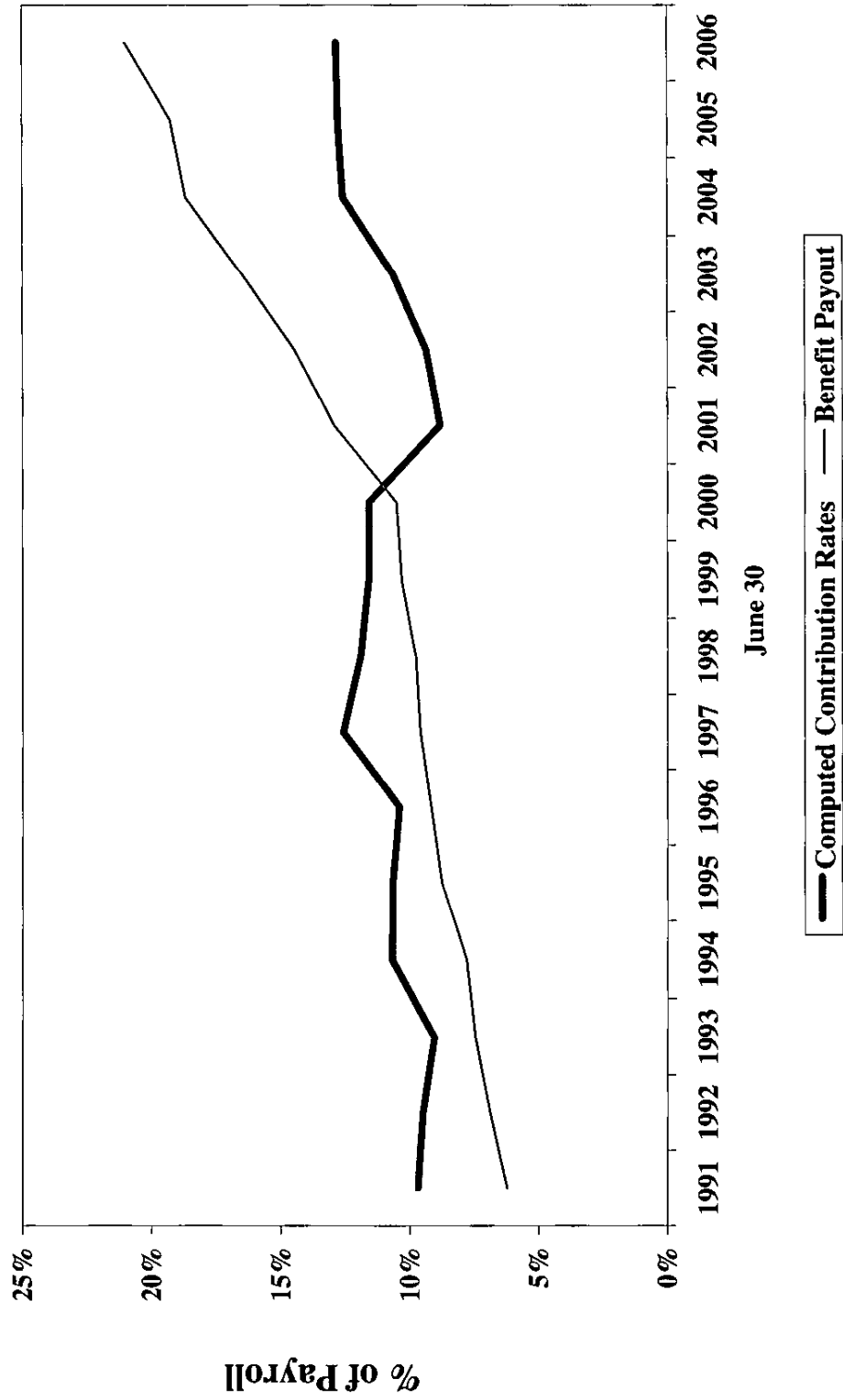
Contributions for	Contribution Expressed as Percents of Payroll
Normal Cost	
Service retirement benefits	7.77 %
Disability benefits	0.41
Survivor benefits	0.33
Administrative expenses	0.36
Total	<u>8.87</u>
Unfunded Actuarial Accrued Liabilities (UAAL) (30-year level percent-of-payroll amortization*)	<u>3.97</u>
<b>TOTAL COMPUTED EMPLOYER CONTRIBUTION RATE</b>	<b>12.84 %</b>

\* This corresponds to an amortization factor of 16.65656 assuming payroll growth of 4% per year. Amortization period a year ago was 30 years.

# Missouri State Employees' Retirement System Computed Contribution Rates



## Missouri State Employees' Retirement System Contribution Rates vs. Benefit Payout



## Actuarial Present Values June 30, 2006

Actuarial Present Value, June 30, for	(1) Actuarial Present Value	(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1) - (2)
<b>Active Members</b>			
Service retirement benefits based on service rendered before and likely to be rendered after valuation date	\$4,053,266,115	\$800,361,495	\$3,252,904,620
Disability benefits likely to be paid to present active members who become totally and permanently disabled	125,485,969	53,431,659	72,054,310
Survivor benefits likely to be paid to widows and children of present active members who die before retiring	178,804,688	42,098,670	136,706,018
Separation benefits likely to be paid to present active members	409,193,532	201,520,834	207,672,698
Active Member Totals	\$4,766,750,304	\$1,097,412,658	\$3,669,337,646
<b>Members on Leave of Absence &amp; LTD</b>			
Service retirement benefits based on service rendered before the valuation date			99,633,265
<b>Terminated Vested Members</b>			
Service retirement benefits based on service rendered before the valuation date			367,885,358
<b>Retired Lives</b>			
			3,875,909,058
<b>BackDROP Installment Payments Incurred, but not yet paid</b>			
			440,087
<b>TOTAL ACTUARIAL ACCRUED LIABILITY</b>			\$8,013,205,414
<b>ACTUARIAL VALUE OF ASSETS</b>			6,836,567,188
<b>UNFUNDED ACTUARIAL ACCRUED LIABILITY</b>			\$1,176,638,226

## **Actuarial Valuation as of June 30, 2006 Comments**

**Computed Contribution Rate.** The contribution rate for the fiscal year beginning July 1, 2007 was computed to be 12.84% of payroll, based upon an amortization period for the unfunded actuarial accrued liabilities (UAAL) of 30 years. This represents an increase of 0.06% in the rate computed for the fiscal year beginning July 1, 2006.

**Experience and Development of Actuarial Value of Assets.** Experience was remarkably close to expectations in the aggregate this year. Slight differences were due to pay increases that were on average higher than expected, favorable investment performance, and higher than expected turnover. Measured on an actuarial value basis, unexpected investment return typically is recognized over discrete five-year periods (please see page 44). However, at their September 15, 2005 meeting, the MOSERS' Board considered the extreme volatility in the markets during the last five years and the statutory funding objective to employ methods which establish contribution rates that are likely to remain level from one period to another. As a result, the Board elected to set the actuarial value of assets to market value as of June 30, 2005. Consequently, all remaining unrecognized investment gains or losses that would have otherwise been recognized over a period of years were fully recognized as of June 30, 2005. No change was made to the asset valuation method for future years, so this year's investment gains above the assumed investment return of 8.5% will be recognized over a discrete five-year period with one-fifth being recognized this year. Remaining unrecognized investment gains are scheduled to be phased in over each of the next four years. This will put downward pressure on next year's contribution rate in the absence of adverse experience or changes in benefit provisions, assumptions, or methods.

Additional information concerning 2005 experience is presented in the gain/loss section of this report beginning on page 16.

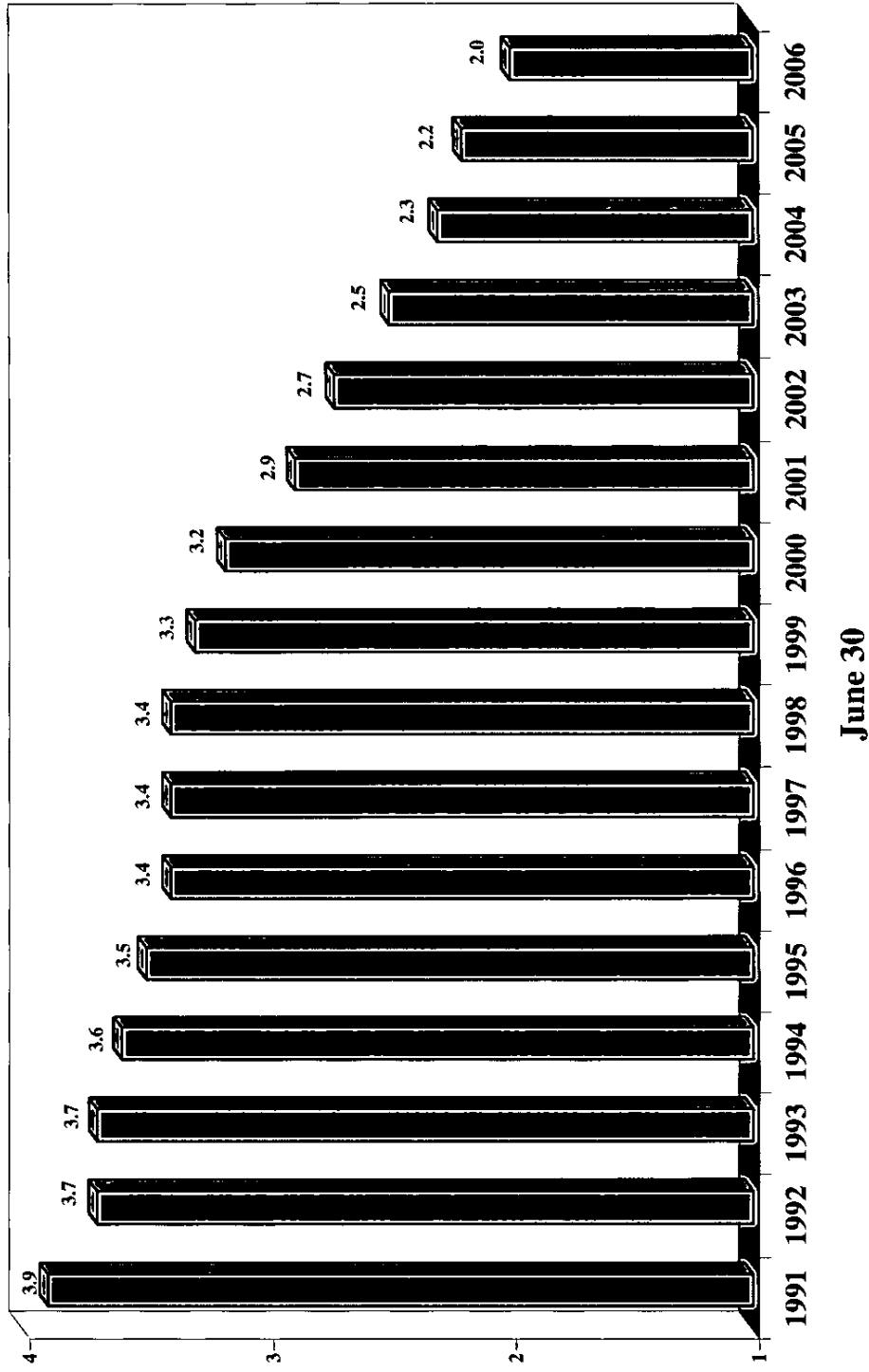
**Conclusion.** Based on the results of the June 30, 2006 regular annual actuarial valuation, it is our opinion that the Missouri State Employees' Retirement System continues to be in sound financial condition in accordance with actuarial principles of level percent-of-payroll financing.

## Comparative Schedule

Valuation Date June 30	Active Members				Retired Lives				Accrued Liability	Valuation Assets	UAAL
	Number	Payroll \$ Millions	Average Salary		Retired	Active/Retired	Annual Benefits				
			\$	% Incr.			\$ Million	% of Payroll			
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 (2)	49,436	1,125	22,754	2.6	13,651	3.6	96.2	8.6	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	9.6	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	10.3	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 (3)	58,616	1,773	30,253	0.5	21,502	2.7	256.6	14.5	6,294	6,033	261
2003 (2) (3)	57,558	1,740	30,229	(0.1)	22,872	2.5	287.1	16.5	6,662	6,057	605
2004 (1)	55,914	1,737	31,074	2.8	24,757	2.3	324.6	18.7	7,230	6,118	1,112
2005 (3)(4)	55,944	1,807	32,293	3.9	25,780	2.2	348.1	19.3	7,578	6,435	1,143
<b>2006</b>	<b>54,493</b>	<b>1,777</b>	<b>32,615</b>	<b>1.0</b>	<b>27,052</b>	<b>2.0</b>	<b>373.6</b>	<b>21.0</b>	<b>8,013</b>	<b>6,837</b>	<b>1,176</b>

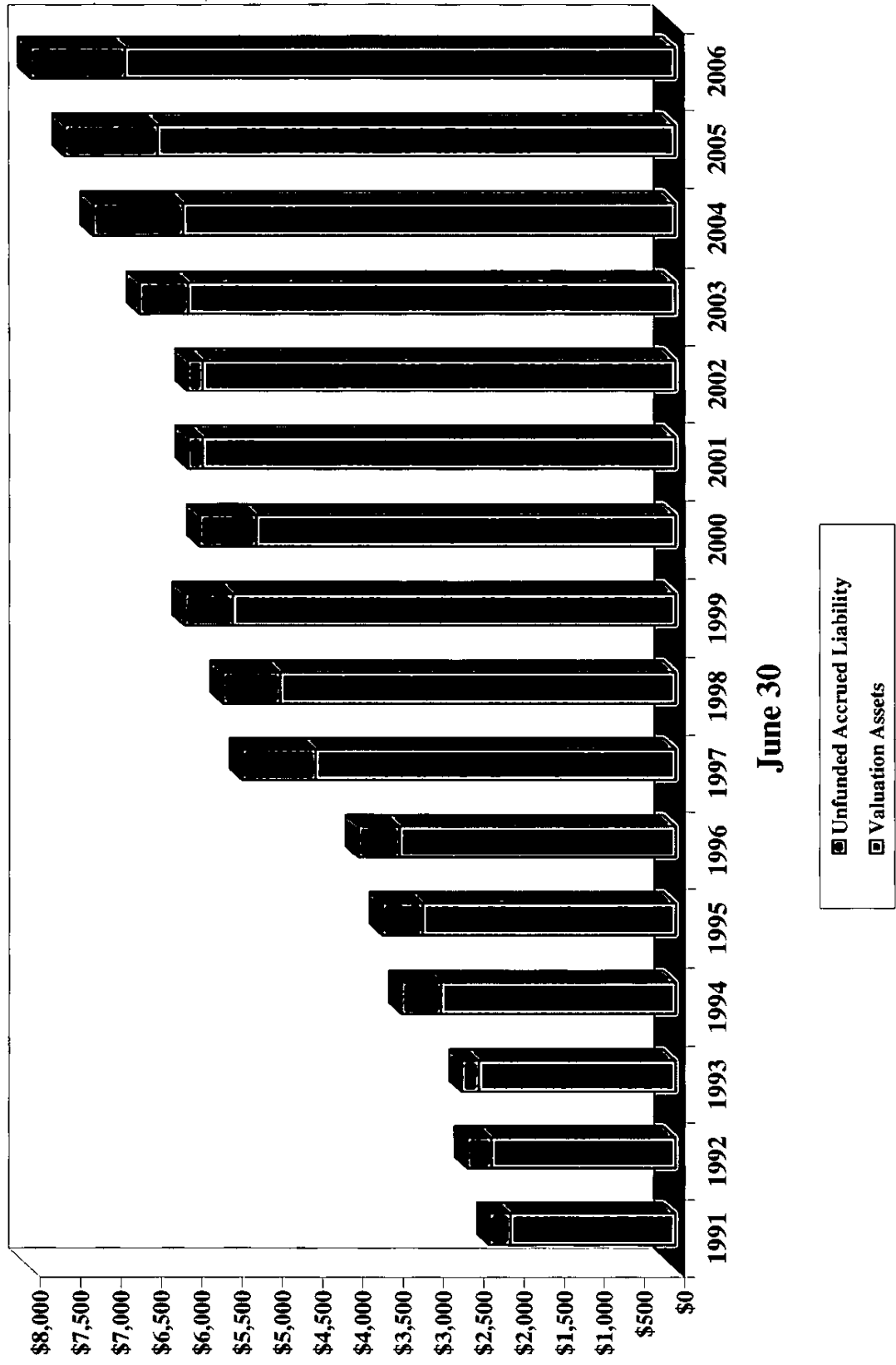
- (1) After changes in assumptions.
- (2) After changes in benefit provisions.
- (3) After changes in methods.
- (4) Reflects the addition of the assets, liabilities, and members of the Administrative Law Judges Retirement System.

# Number of Active Members Per Benefit Recipient



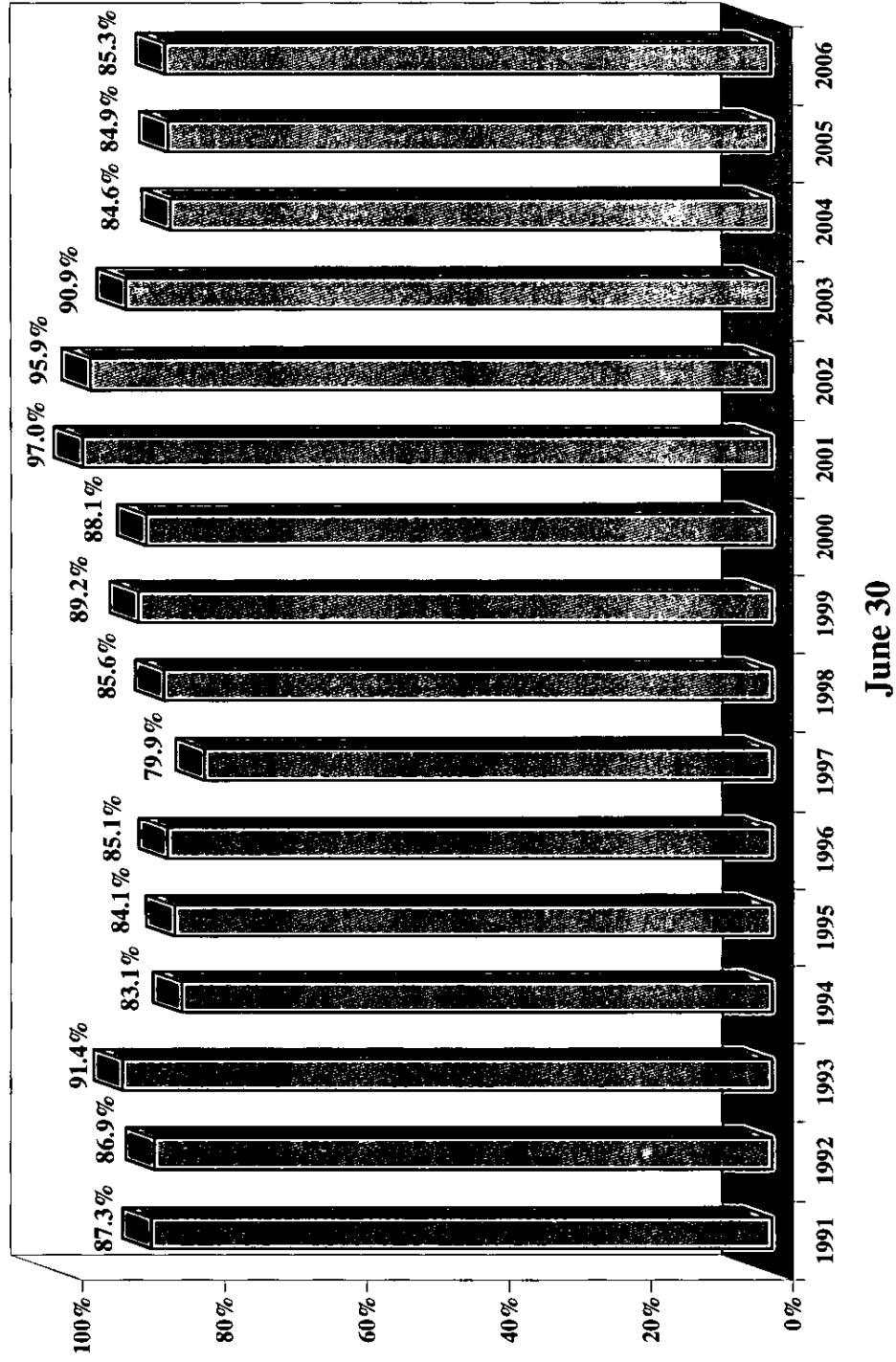


**Missouri State Employees' Retirement System**  
**Actuarial Value of Assets and Actuarial Accrued Liabilities**  
 (\$ in millions)



**June 30**

**Actuarial Value of Assets as  
Percent of Accrued Liabilities  
(Funded Ratio)**



# 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/loss analysis may or may not be indicative of ***long-term trends, which are the basis of financial assumptions.***

***2005 and 2006 Data.*** For the 2005 and 2006 valuations, active and retired member data were 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, 2005 and June 30, 2006.

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, 2005 through May 31, 2006.

**Results from 2006 Plan Year.** There was a net experience loss this year, with the largest single identifiable source being pay increases that were on average higher than expected. 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, 2005 - June 30, 2006	4.3 %	2.1 %	11.5 *%	7.2 %	9.4 %
July 1, 2004 - June 30, 2005	2.5	5.2	12.6 *	10.1	7.4
July 1, 2003 - June 30, 2004	3.3	4.2	17.2 *	13.9	13.0
July 1, 2002 - June 30, 2003	2.1	0.6	6.8 *	4.7	6.2
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

\* MOSERS' approximate rate of return based on market value.

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, 1995	.42
June 30, 1996 after assumption changes	.40
June 30, 1997 after changes in benefits, assumptions, methods	.66
June 30, 1998	.49
June 30, 1999 after MSEP 2000	.38
June 30, 2000 after changes in assumptions	.42
June 30, 2001 after changes in assumptions	.10
June 30, 2002 after changes in methods	.15
June 30, 2003 after changes in benefits, methods	.35
June 30, 2004 after changes in assumptions	.64
June 30, 2005 after changes in assumptions	.63
June 30, 2006	.66

## Derivation of Experience Gain (Loss)

**Year Ended June 30, 2006**

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.

	<b>\$ Millions</b>
(1) UAAL* at start of year	\$1,142.7
(2) Normal cost from last valuation	159.7
(3) Actual employer contributions	227.2
(4) Interest accrual: $(1) \times .085 + [(2) - (3)] \times (.085 / 2)$	94.3
(5) Expected UAAL before changes: $(1) + (2) - (3) + (4)$	1,169.5
(6) Change from any changes in benefits, assumptions, or methods	0.0
(7) Expected UAAL after changes: $(5) + (6)$	1,169.5
(8) Actual UAAL at end of year	1,176.6
(9) Gain(loss): $(7) - (8)$	(7.1)
(10) Gain (loss) as percent of actuarial accrued liabilities at start of year (\$7,578)	(0.1) %

\* *Unfunded actuarial accrued liabilities.*

<b>Valuation Date June 30</b>	<b>Actuarial Gain (Loss) As a % of Beginning Accrued Liabilities</b>
1997	5.5 %
1998	5.5
1999	4.7
2000	2.7
2001	(4.4)
2002	(3.8)
2003	(6.4)
2004	(6.0)
2005	(3.4)
<b>2006</b>	<b>(0.1)</b>

## Gains & (Losses) in Actuarial Accrued Liabilities During Plan 2005 - 2006

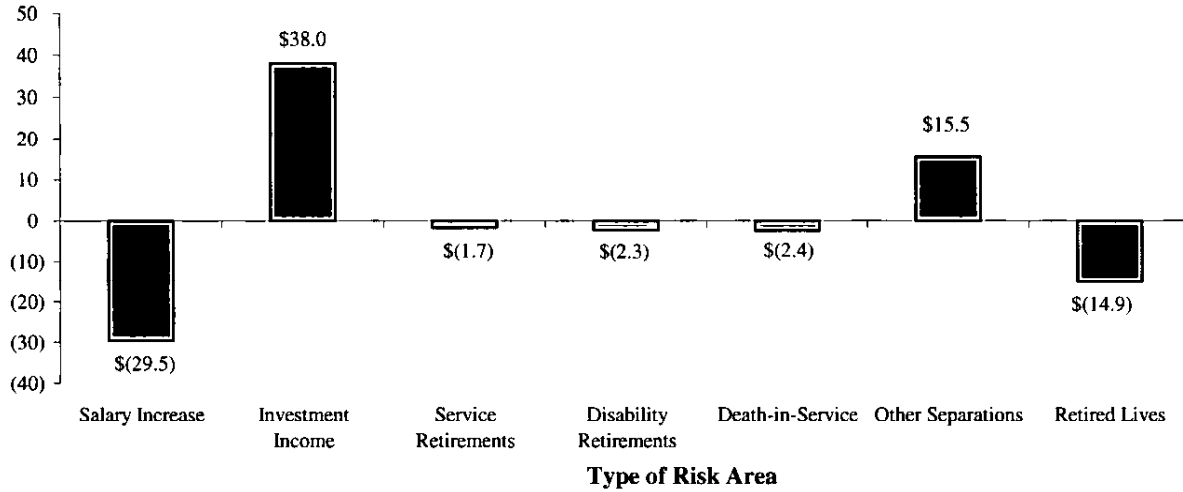
<u>Type of Activity</u>	-- Gain (Loss) for Year --	
	\$ in Millions	% of Accr. Liabilities*
<u>Decrement Experience:</u>		
<i>Service Retirements</i> . If members retire at older ages than assumed, there is a gain. If at younger ages, a loss.	\$ (1.7)	0.0 %
<i>Disability Retirements</i> . The occurrence of a gain or loss depends upon the age at disability and the incidence of disability.	(2.3)	0.0
<i>Death-in-Service</i> . If there are fewer survivor claims than assumed at younger ages, there is a gain. If there are fewer survivor claims than assumed at older ages, there can be a loss.	(2.4)	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.	15.5	0.2
<i>Retired Lives</i> . If more deaths than assumed, there is a gain. If fewer deaths, a loss.	(14.9)	(0.2)
<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.	(29.5)	(0.4)
<i>Investment Income</i> . If there is greater investment income than assumed, there is a gain. If less income, a loss.	38.0	0.5
<i>COLAs</i> .	(6.2)	(0.1)
<u>Other:</u>		
Service credit reinstatements, service transfers, service purchases, net of contributions.	2.7	0.0
Larger than expected average compensation for new retirees.	(9.9)	(0.1)
Change in group size, data adjustments, retroactive benefit payments, option elections, and miscellaneous unidentified changes in the UAAL.	3.6	0.0
<b><i>Experience Gain or (Loss) During Year</i></b>	<b>\$ (7.1)</b>	<b>(0.1) %</b>

\* Beginning of year accrued liabilities totaled \$7,230 million.

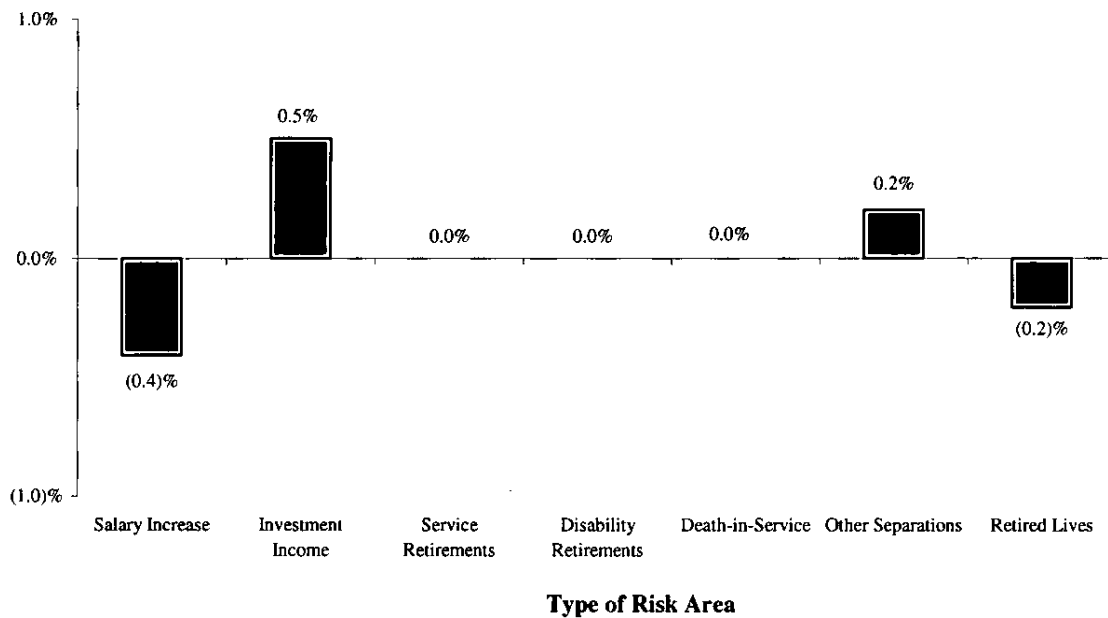
# MOSERS

## Gain (Loss) Analysis 2005-2006 Experience

Amount in \$ Millions



## % of Actuarial Accrued Liabilities





## Experience Gains & Losses By Risk Area

### Comparative Statement

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

Year Ending June 30	Gain (Loss) By Risk Area							COLAs & Retired Lives	Other	Total Exper. Gain (Loss)	Exper. Gain (Loss) as % of AAL	Accrued Liability Beginning of Year
	Salary Increases	Investments	Retirement Service	Disability	Death- In- Service	Withdrawal	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	
2003	7.7	(314.1)	(27.2)	(0.6)	(2.6)	(14.6)	9.6	(63.1)	(404.9)	(6.5)	6,294	
2004 *	(40.0)	(240.1)	(51.5)	(1.4)	(1.3)	(6.7)	(4.3)	(53.8)	(399.1)	(6.0)	6,662	
2005	(3.4)	(196.6)	3.1	(2.0)	(1.7)	(0.9)	(11.7)	(35.5)	(248.7)	(3.4)	7,230	
<b>2006</b>	<b>(29.5)</b>	<b>38.0</b>	<b>(1.7)</b>	<b>(2.3)</b>	<b>(2.4)</b>	<b>15.5</b>	<b>(21.1)</b>	<b>(3.6)</b>	<b>(7.1)</b>	<b>(0.1)</b>	<b>7,578</b>	

\* 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 2005 - 2006**

	Market Value	Actuarial Value
	----- \$ in millions -----	
1. Assets at June 30, 2005	\$6,435.3	\$ 6,435.3
2. Contributions and Transfers in	230.5	230.5
3. Investment Income	729.7	577.6
4. Benefit Payments	400.3	400.3
5. Administrative Expenses	6.5	6.5
6. Assets at June 30, 2006 = (1) + (2) + (3) - (4) - (5)	6,988.7	6,836.6
7. Actual Investment Increment/Mean Assets*	11.50 %	9.10 %
8. Expected Investment Increment		8.50 %
9. Investment Gain (Loss):		
a. As a % of mean assets: (7) - (8)		0.60 %
b. \$ in millions		<u>\$ 38.0</u>

\* Based on the approximation formula:  $I/[.5 x (A+B-I)]$ , 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 2005 - 2006**

Age Groups	Number	Salary Increases	
		Actual*	Expected#
Below 25	1,022	3.5%	2.7%
25- 29	3,646	3.8%	2.4%
30- 34	4,833	2.4%	2.1%
35- 39	5,826	2.2%	1.7%
40- 44	6,843	1.9%	1.3%
45- 49	8,132	1.9%	1.0%
50- 54	8,325	1.8%	0.7%
55- 59	6,663	1.6%	0.7%
60-64	2,906	1.7%	0.0%
65 & Over	931	1.8%	0.0%
<b>Total</b>	<b>49,127</b>		
<b>Average</b>		<b>2.1%</b>	<b>1.1%</b>

\* Excludes new entrants and terminations.  
# Reflects an expected one year wage freeze.

Assumed Payroll Growth	Actual Payroll Growth		
	2006	2005	2004
0.0%	(1.6)%	4.0%	(0.1)%

**Active Members Who Retired With  
SERVICE OR REDUCED SERVICE RETIREMENT BENEFITS  
During Plan 2005 - 2006**

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
Under 50	6	0.8	14	6.2	20	7.0
50	6	2.4	28	17.6	34	19.9
51	13	6.8	21	11.7	34	18.5
52	22	11.3	33	22.1	55	33.5
53	21	16.4	38	20.2	59	36.6
54	22	18.5	38	27.0	60	45.4
55	22	18.5	38	28.6	60	47.1
56	27	22.0	23	20.2	50	42.2
57	25	34.5	29	50.1	54	84.6
58	30	38.4	40	43.4	70	81.8
59	31	41.7	45	46.9	76	88.6
60	33	29.4	47	36.9	80	66.3
61	27	26.9	34	28.3	61	55.2
62	64	84.5	58	93.2	122	177.7
63	41	35.0	48	37.3	89	72.3
64	26	35.6	40	38.8	66	74.5
65	24	39.6	42	45.2	66	84.8
66	29	19.7	32	22.0	61	41.6
67	11	12.3	17	12.1	28	24.4
68	9	10.6	15	12.4	24	22.9
69	4	8.4	6	8.0	10	16.4
70 & Over	23	62.8	30	47.1	53	109.9
<b>Totals</b>	<b>516</b>	<b>575.9</b>	<b>716</b>	<b>675.2</b>	<b>1,232</b>	<b>1,251.2</b>

	Men	Women	Total
Average age at retirement	60.5 years	59.8 years	60.1 years
Average service at retirement	20.7 years	20.8 years	20.7 years

**Active Members Who Retired With DISABILITY BENEFITS  
During Plan 2005 - 2006**

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
Under 25		0.0		0.0		0.0
25- 29	0	0.5	1	1.2	1	1.6
30- 34	2	2.0	11	3.7	13	5.7
35- 39	1	3.7	13	7.2	14	10.8
40- 44	4	6.2	11	12.1	15	18.3
45- 49	8	10.3	30	19.9	38	30.2
50- 54	21	17.5	25	26.0	46	43.5
55- 59	20	22.2	23	28.8	43	51.0
60 & Over	5	6.3	9	8.1	14	14.4
<b>Totals</b>	<b>61</b>	<b>68.6</b>	<b>123</b>	<b>107.0</b>	<b>184</b>	<b>175.6</b>

	Men	Women	Total
Average age at disability	52.4 years	48.2 years	49.6 years
Average service at disability	11.3 years	9.4 years	10.0 years

**Active Members Who Died  
During Plan 2005 - 2006**

Ages	Men		Women		Total	
	Actual*	Expected	Actual*	Expected	Actual*	Expected
Under 30	1	0.1	1	0.3	2	0.4
30- 34	2	0.7	0	1.0	2	1.7
35- 39	1	1.5	1	1.8	2	3.3
40- 44	5	2.8	1	3.0	6	5.9
45- 49	8	6.3	5	5.4	13	11.7
50- 54	11	12.9	7	9.6	18	22.5
55- 59	10	17.4	9	13.3	19	30.6
60- 64	9	13.9	2	9.5	11	23.4
65 & Over	4	9.0	2	5.2	6	14.2
<b>Totals</b>	<b>51</b>	<b>64.6</b>	<b>28</b>	<b>49.1</b>	<b>79</b>	<b>113.7</b>

	Men	Women	Total
Average age at death	53.8 years	52.9 years	53.5 years
Average service at death	14.1 years	12.9 years	13.7 years

**Of the 79 active members who died in service during 2005-2006, 34 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 2005 - 2006**

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
Under 30	36	38.6	93	90.6	129	129.2
30- 34	134	101.7	253	193.5	387	295.2
35- 39	136	101.3	242	185.1	378	286.4
40- 44	142	96.5	208	176.4	350	272.9
45- 49	145	97.5	205	187.8	350	285.3
50- 54	98	78.0	171	139.6	269	217.6
55- 59	52	51.0	99	87.7	151	138.7
60 & Over	11	12.2	11	17.0	22	29.2
<b>Totals</b>	<b>754</b>	<b>576.8</b>	<b>1,282</b>	<b>1,077.7</b>	<b>2,036</b>	<b>1,654.5</b>

	Men	Women	Total
Average age at termination	42.6 years	41.5 years	41.9 years
Average service at termination	9.6 years	9.4 years	9.5 years

**Active Members Who Left Active Status with NO BENEFIT PAYABLE  
(Other than Deaths)  
During Plan 2005 - 2006**

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
Under 20						
20- 24	149	113.7	303	214.4	452	328.1
25- 29	318	277.6	529	412.8	847	690.4
30- 34	249	194.9	300	266.8	549	461.7
35- 39	154	146.0	217	210.0	371	356.0
40- 44	132	134.6	208	209.7	340	344.3
45- 49	93	122.2	183	201.4	276	323.6
50- 54	67	111.8	130	164.0	197	275.8
55- 59	65	106.6	96	121.6	161	228.2
60- 64	30	43.9	42	48.3	72	92.2
65- 69	7	9.8	5	8.2	12	18.0
70 & Over	3	3.4	6	2.3	9	5.7
<b>Totals</b>	<b>1,267</b>	<b>1,264.5</b>	<b>2,019</b>	<b>1,859.5</b>	<b>3,286</b>	<b>3,124.0</b>

	Men	Women	Total
Average age at termination	35.6 years	35.4 years	35.5 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	435	392.8	758	635.7	1,193	1,028.5
1	303	303.6	468	452.3	771	756.0
2	267	259.8	386	338.2	653	598.0
3	157	217.3	254	280.3	411	497.6
4	105	91.0	153	153.0	258	244.0
5 & Over	0	0.0	0	0.0	0	0.0
<b>Totals</b>	<b>1,267</b>	<b>1,264.5</b>	<b>2,019</b>	<b>1,859.5</b>	<b>3,286</b>	<b>3,124.0</b>



**Comparison of Actual to Expected Deaths  
Among Retired Lives  
(Service Retirement Only)  
As of June 30, 2006**

Age	Male Deaths			Female Deaths			Total Deaths		
	Actual	Expected	Exposure	Actual	Expected	Exposure	Actual	Expected	Exposure
50-54	4	2	336		2	663	4	4	999
55-59	11	12	1,310	12	11	2,035	23	23	3,345
60-64	30	24	1,785	24	23	2,674	54	47	4,459
65-69	30	39	1,749	41	35	2,646	71	74	4,395
70-74	51	57	1,509	49	48	2,136	100	105	3,645
75-79	48	60	1,018	61	64	1,733	109	124	2,751
80-84	56	55	601	78	66	1,145	134	121	1,746
85-89	30	30	228	73	59	643	103	89	871
90-94	17	15	78	43	30	225	60	45	303
95-99	7	4	16	18	8	49	25	12	65
100 & Up	1		2	3	2	7	4	2	9
<b>Totals</b>	<b>285</b>	<b>298</b>	<b>8,632</b>	<b>402</b>	<b>348</b>	<b>13,956</b>	<b>687</b>	<b>646</b>	<b>22,588</b>
<b>Average Ages</b>	<b>75.9</b>	<b>75.5</b>	<b>67.8</b>	<b>79.4</b>	<b>78.0</b>	<b>68.5</b>	<b>77.9</b>	<b>76.9</b>	<b>68.2</b>

## **Data Used In Valuations**

---

**Missouri State Employees' Retirement System**  
**Summary of Benefit Provisions Evaluated**  
**June 30, 2006 Actuarial Valuation**

MSEP (Missouri State Employees' Plan)	MSEP 2000 (Missouri State Employees' Plan 2000)
<p><b>PARTICIPATION</b></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 <b>not</b> 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"> <li>(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 Colleges and Universities Retirement Plan.</li> <li>(2) MSEP active members and vested former members who elect to transfer to the MSEP 2000 plan prior to retirement.</li> <li>(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.</li> </ol>

**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 48 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 48 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 48 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.

**Uniformed Water Patrol Employees:**

2.13% of Average Compensation 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.

**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). Unused sick leave is not converted.

Years of Service	General Assembly	Statewide Elected Officials	General Employees
4		100%	100%
5			
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). Unused sick leave is converted to additional credited service.

Years of Service	General Assembly	Statewide Elected Officials	General Employees
4 (2 assemblies) 5	100%	100%	100%
6 (3 Assemblies) HB1455 prospectively	100%		

**DEATH PRIOR TO RETIREMENT**

- (1) The surviving spouse benefit is 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, 80% of the member's life income annuity is paid to eligible children until age 21. 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 surviving 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 surviving spouse benefit is 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 is paid to eligible children until age 21. 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%.



**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% and counts toward the Formula 1 65% maximum.

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%.

**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, 2006  
Tabulated by Plan Year of Retirement**

<b>Plan Year Ended 6/30</b>	<b>No.</b>	<b>Total Annual Benefits</b>	<b>Average Monthly Benefit</b>
2006 *	810	\$ 11,552,058	\$1,188
2005	2,119	28,480,596	1,120
2004	1,580	20,618,532	1,087
2003	2,860	45,853,512	1,336
2002	2,141	32,090,976	1,249
2001	1,831	28,898,184	1,315
2000	2,383	38,776,176	1,356
1999	1,351	19,343,208	1,193
1998	1,289	18,897,444	1,222
1997	1,135	16,224,396	1,191
1996	1,004	13,532,568	1,123
1995	1,117	15,707,268	1,172
1994	798	9,761,916	1,019
1993	864	11,726,184	1,131
1992	724	9,315,000	1,072
1991	712	9,830,064	1,151
1990	550	7,200,420	1,091
1989	543	6,535,872	1,003
1988	546	6,667,188	1,018
1987	417	4,219,656	843
1986	392	3,402,768	723
1985	323	2,808,804	725
1984	249	2,112,456	707
1983	256	2,202,060	717
1982	226	1,876,140	692
1981	185	1,492,980	673
1980	129	1,000,980	647
1979	95	659,532	579
1978	93	658,104	590
1977	94	617,856	548
1976	78	504,672	539
1975	55	406,476	616
1974	38	176,568	387
1973	34	211,392	518
1972	10	86,064	717
1971	9	62,988	583
1970	4	27,024	563
1969	4	30,888	644
1968	2	6,744	281
1966	1	5,544	462
1964 & PRIOR	1	7,884	657
<b>Totals</b>	<b>27,052</b>	<b>\$373,589,142</b>	<b>\$1,151</b>

\* *Eleven months ended May 31, 2006.*

**Benefits Payable June 30, 2006**  
**Tabulated by Option and Type of Benefit**

**MSEP Benefits\***

Type of Benefit	No.	Annual Funded Benefits
Service Retirement		
Life Annuity	4,671	\$ 47,533,408
50% Joint and Survivor	5,096	71,784,737
75% Joint and Survivor	6	64,428
100% Joint and Survivor	2,301	38,434,393
5 Year Certain and Life	125	1,143,525
10 Year Certain and Life	107	818,404
Survivor Beneficiary	1,778	15,680,822
Total	14,084	175,459,717
Disability Retirement	17	59,928
Death-in-Service	1,257	10,273,526
<b>Total</b>	<b>15,358</b>	<b>\$ 185,793,171</b>

\* Includes 11 Lincoln University members and 34 members of the ALJ.

**MSEP 2000 Benefits**

Type of Benefit	No.	Annual Funded Benefits
Service Retirement		
Life Annuity	7,691	\$ 114,205,249
50% Joint and Survivor	1,745	37,831,779
100% Joint and Survivor	1,502	27,808,960
5 Year Certain and Life	55	746,300
10 Year Certain and Life	310	3,573,523
15 Year Certain and Life	195	1,776,562
Survivor Beneficiary	189	1,836,676
Total	11,687	187,779,049
Disability Retirement	0	0
Death-in-Service	7	16,922
<b>Total</b>	<b>11,694</b>	<b>\$ 187,795,971</b>

## Total Benefits Payable June 30, 2006

### 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					78	\$ 279,685	78	\$ 279,685
20-24					20	66,421	20	66,421
25-29					11	96,094	11	96,094
30-34					16	84,742	16	84,742
35-39					31	178,179	31	178,179
40-44					53	313,067	53	313,067
45-49	12	\$ 276,960	1	\$ 1,860	96	697,117	109	975,937
50-54	787	21,832,609	4	12,516	193	1,670,066	984	23,515,191
55-59	3,400	72,458,667	7	22,044	295	2,622,416	3,702	75,103,127
60-64	4,696	67,657,113	4	16,032	315	3,221,443	5,015	70,894,588
65-69	4,764	60,019,721	1	7,476	411	4,336,210	5,176	64,363,407
70-74	3,811	49,957,912			515	4,817,837	4,326	54,775,749
75-79	2,865	37,344,259			505	3,911,168	3,370	41,255,427
80-84	1,944	22,420,963			405	3,366,303	2,349	25,787,266
85-89	1,049	10,086,847			203	1,559,452	1,252	11,646,299
90-94	385	3,017,360			68	486,055	453	3,503,415
95	27	213,845			5	55,537	32	269,382
96	25	200,585			4	29,268	29	229,853
97	19	97,651			2	5,712	21	103,363
98	11	80,196			2	5,978	13	86,174
99	3	17,772			1	2,700	4	20,472
101	3	16,512					3	16,512
102	3	22,296			1	792	4	23,088
106					1	1,704	1	1,704
<b>Totals</b>	<b>23,804</b>	<b>\$ 345,721,268</b>	<b>17</b>	<b>\$ 59,928</b>	<b>3,231</b>	<b>\$ 27,807,946</b>	<b>27,052</b>	<b>\$ 373,589,142</b>

Average age at Retirement: 60.4 years.

Average age now: 69.1 years.

# Count includes 34 members of the ALJ.

## Summary of Member Data Included in Valuation

June 30, 2006

### Active Members

Valuation Group	Number	Payroll	Group Averages		
			Salary	Age(yrs.)	Service(yrs.)
Regular State Employees	50,265	\$ 1,569,510,651	\$ 31,225	44.5	10.3
Elected Officials	6	593,965	98,994	47.4	6.8
Legislative Clerks	61	1,744,797	28,603	57.8	17.3
Legislators	195	6,125,605	31,413	49.9	2.1
Uniformed Water Patrol	87	3,462,086	39,794	38.5	13.4
Conservation Department	1,566	59,926,339	38,267	43.1	13.0
Contract Employees	2,271	132,301,172	58,257	52.9	17.0
Administrative Law Judges	42	3,612,523	86,012	51.4	12.1
<b>Total in Funding Program</b>	<b>54,493</b>	<b>\$ 1,777,277,138</b>	<b>\$ 32,615</b>	<b>44.8</b>	<b>10.6</b>
Other Judges	394	40,270,535	102,209	54.8	12.5

### Retired Lives

Type of Benefit Payment	No.	Annual Benefit	Group Averages	
			Benefit	Age(yrs.)
Retirement	23,804	\$ 345,721,268	\$ 14,524	69.2
Disability	17	59,928	3,525	57.8
Survivor of Active Member	1,264	10,290,448	8,141	59.5
Survivor of Retired Member	1,967	17,517,498	8,906	73.9
<b>Total in Funding Program</b>	<b>27,052</b>	<b>\$ 373,589,142</b>	<b>\$13,810</b>	<b>69.1</b>
Other Judges	398	19,407,666	48,763	76.1

This valuation also includes 15,764 terminated vested members, 370 members on leave and 1,092 members on long-term disability.

## Active Members in Funding Program as of June 30, 2006

### 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
15-19	40							40	\$ 708,111
20-24	1,600	17						1,617	35,457,116
25-29	3,763	808	10					4,581	122,090,980
30-34	2,528	2,312	469	7				5,316	155,339,829
35-39	2,096	2,240	1,618	448	28			6,430	200,516,915
40-44	1,970	1,911	1,413	1,269	622	51		7,236	235,444,114
45-49	1,848	1,946	1,320	1,355	1,157	842	61	8,529	287,162,931
50-54	1,633	1,820	1,303	1,407	1,093	1,130	465	8,851	311,978,623
55-59	1,396	1,443	1,173	1,197	936	638	488	7,271	257,563,200
60	186	225	188	211	131	83	65	1,089	38,765,594
61	134	163	145	123	93	50	39	747	27,509,509
62	114	138	117	124	73	36	45	647	23,271,809
63	87	127	109	91	63	42	38	557	21,151,485
64	80	103	87	76	35	19	41	441	16,623,186
65	35	84	56	58	29	16	37	315	11,505,681
66	26	52	33	36	19	5	17	188	7,462,102
67	24	29	20	28	6	5	32	144	6,062,062
68	17	21	28	19	12	7	22	126	5,332,961
69	9	15	21	13	4	7	18	87	3,339,935
70 & Over	49	54	53	58	25	13	29	281	9,990,995
<b>Totals</b>	<b>17,635</b>	<b>13,508</b>	<b>8,163</b>	<b>6,520</b>	<b>4,326</b>	<b>2,944</b>	<b>1,397</b>	<b>54,493</b>	<b>\$ 1,777,277,138</b>

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

Age: 44.8 years.

Service: 10.6 years.

Annual Pay: \$32,615

# Includes 42 ALJ members.

\* A breakdown by gender is included on pages 63 and 64.



## Development of Actuarial Value of Assets

Valuation Date:	2005*	2006	2007	2008	2009	2010
<b>A. Actuarial Value Beginning of Year</b>	\$6,134,453,300	\$6,435,344,102				
<b>B. Market Value End of Year</b>	6,435,344,102	6,988,714,635				
<b>C. Market Value Beginning of Year</b>	5,878,102,328	6,435,344,102				
<b>D. Cash Flow</b>						
D1. Contributions	199,800,381	230,467,123				
D2. Benefit Payments	(368,379,695)	(400,304,770)				
D3. Administrative Expenses	(6,246,227)	(6,486,597)				
D4. Net	(174,825,541)	(176,324,244)				
<b>E. Investment Income</b>						
E1. Market Total: B - C - D4	732,067,315	729,694,777				
E2. Assumed Rate	8.5%	8.5%				
E3. Amount for Immediate Recognition: E2*(A+D4*.5)	513,998,445	539,510,468				
E4. Amount for Phased-In Recognition: E1 - E3	218,068,870	190,184,309				
<b>F. Phased-In Recognition of Investment Income</b>						
F1. Current Year: 0.2 * E4	43,613,774	38,036,862				
F2. First Prior Year	74,155,966		\$38,036,862			
F3. Second Prior Year	(34,410,696)			\$38,036,862		
F4. Third Prior Year	(169,285,818)				\$38,036,862	
F5. Fourth Prior Year	(111,171,109)					\$38,036,862
F6. Total Recognized Investment Gain: Sum(F1:F5)	(197,097,883)	38,036,862	38,036,862	38,036,862	38,036,862	38,036,862
<b>G. Adjustment (Mark to Market)</b>	158,815,781					
<b>H. Actuarial Value End of Year: A + D4 + E3 + F6 + G</b>						
Minimum 80% of B, Maximum 120% of B	\$6,435,344,102	\$6,836,567,188				
<b>I. Difference Between Market &amp; Actuarial Values: B-H</b>	-	152,147,447				
<b>J. Recognized Rate of Return</b>	7.87%	9.10%				
<b>K. Market Value Rate of Return</b>	12.64%	11.50%				
<b>L. Actuarial Value as a % of Market Value: H / B</b>	100%	98%				

\* Reflects the additional of assets from the Administrative Law Judges Retirement System.

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 four consecutive years, the actuarial value will become equal to market value.

## Asset Summary

June 30, 2006

	Market Value	Actuarial Value
1. Assets at June 30, 2005	\$6,435,344,102	\$6,435,344,102
2. Contributions and Transfers in	230,467,123	230,467,123
3. Investment Increment*	729,694,777	577,547,330
4. Benefit Payments and Transfers out	400,304,770	400,304,770
5. Administrative and Misc. Expenses	6,486,597	6,486,597
6. Assets at June 30, 2006 (1) + (2) + (3) - (4) - (5)	\$6,988,714,635	\$6,836,567,188
7. Investment Increment/Mean Assets**	11.50%	9.10%

\* *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.

---

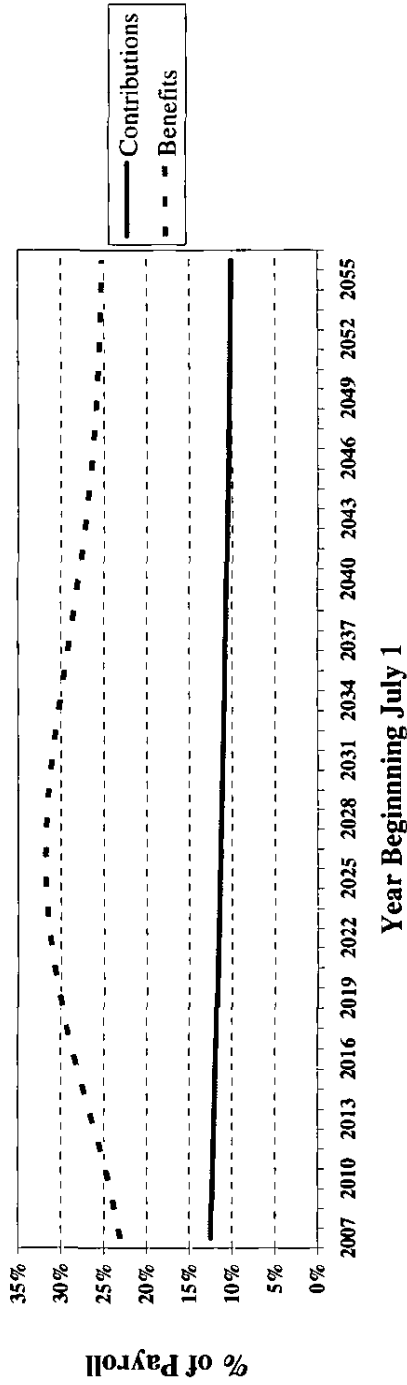
Whereas valuations provide a snapshot of the retirement system as of a given date, projections provide a moving picture. Projected active and retired groups are developed from year to year by the application of assumptions regarding pre-retirement withdrawal from service, retirements, deaths, disabilities, 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.

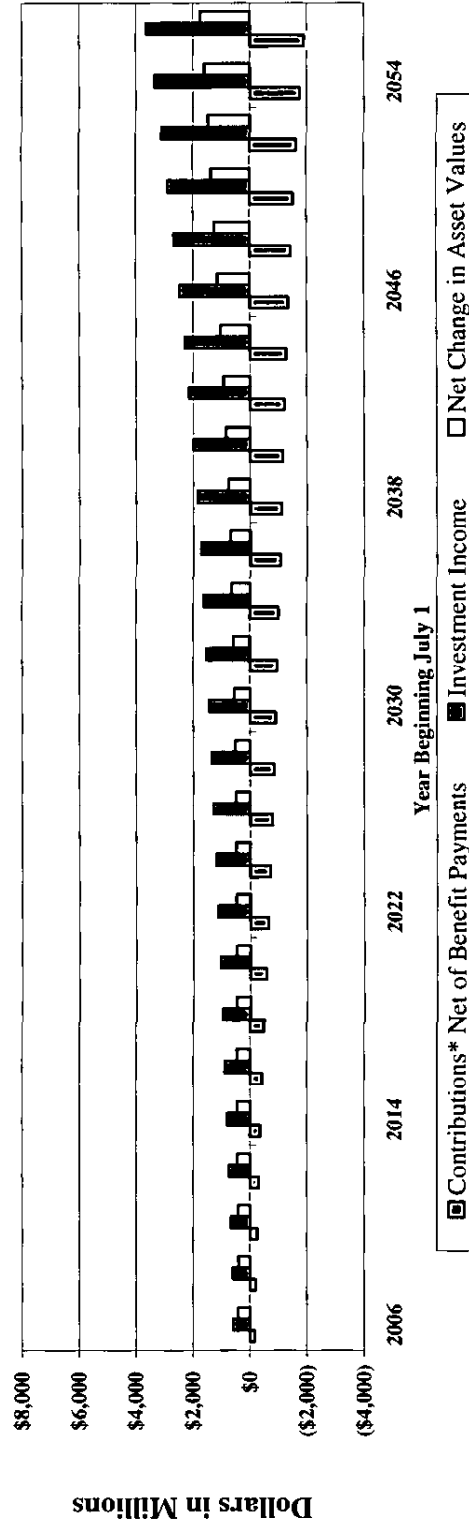
# Missouri State Employees' Retirement System 50-Year Cash Flow Projection Based on Valuation Assumptions

## 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)**

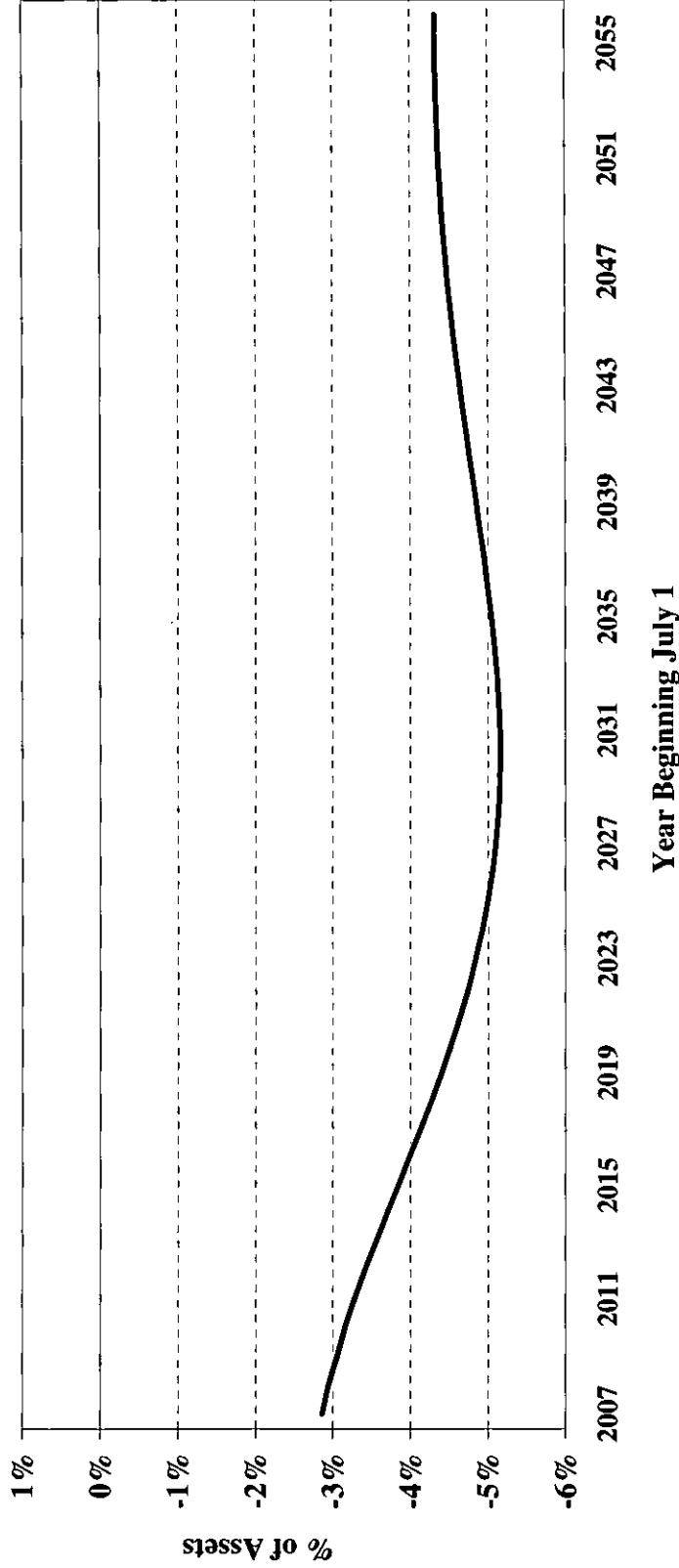
Year Ended June 30	Assets BOY	Contributions*			Benefits	Investment Income	Assets EOY	
		Normal	UAAL	Total			Inflated	2007 \$
2007	\$6,836,567	\$157,250	\$72,805	\$230,055	\$425,778	\$572,790	\$7,213,634	\$7,213,634
2008	7,213,634	163,401	76,228	239,629	451,859	604,140	7,605,544	7,313,023
2009	7,605,544	169,693	76,279	245,972	478,261	636,598	8,009,853	7,405,560
2010	8,009,853	176,148	77,773	253,921	506,694	670,095	8,427,175	7,491,728
2011	8,427,175	182,820	79,321	262,141	538,257	704,575	8,855,634	7,569,833
2012	8,855,634	189,707	80,898	270,605	572,560	739,897	9,293,576	7,638,642
2013	9,293,576	196,833	82,514	279,347	609,516	775,920	9,739,327	7,697,132
2014	9,739,327	204,235	84,176	288,411	648,159	812,554	10,192,133	7,745,183
2015	10,192,133	211,945	85,879	297,824	689,298	849,694	10,650,353	7,782,108
2016	10,650,353	220,016	87,632	307,648	732,019	887,243	11,113,225	7,808,005
2017	11,113,225	228,452	89,413	317,865	776,477	925,134	11,579,747	7,822,862
2018	11,579,747	237,274	91,230	328,504	822,613	963,278	12,048,916	7,826,746
2019	12,048,916	246,514	93,086	339,600	869,683	1,001,631	12,520,464	7,820,245
2020	12,520,464	256,176	94,972	351,148	917,340	1,040,176	12,994,448	7,804,129
2021	12,994,448	266,271	96,891	363,162	965,873	1,078,913	13,470,650	7,778,964
2022	13,470,650	276,830	98,851	375,681	1,014,824	1,117,841	13,949,348	7,745,578
2023	13,949,348	287,869	100,845	388,714	1,063,751	1,157,006	14,431,317	7,704,998
2024	14,431,317	299,399	102,875	402,274	1,112,805	1,196,466	14,917,252	7,658,118
2025	14,917,252	311,449	104,946	416,395	1,161,555	1,236,297	15,408,389	7,606,014
2026	15,408,389	324,026	107,052	431,078	1,209,781	1,276,618	15,906,304	7,549,806
2027	15,906,304	337,149	109,196	446,345	1,257,378	1,317,567	16,412,838	7,490,605
2028	16,412,838	350,848	111,385	462,233	1,304,675	1,359,287	16,929,683	7,429,314
2029	16,929,683	365,148	113,616	478,764	1,351,230	1,401,943	17,459,160	7,366,987
2030	17,459,160	380,058	115,885	495,943	1,396,922	1,445,737	18,003,918	7,304,664
2031	18,003,918	395,583	118,192	513,775	1,441,995	1,490,884	18,566,582	7,243,222
2032	18,566,582	411,740	120,543	532,283	1,486,547	1,537,603	19,149,921	7,183,457
2033	19,149,921	428,543	122,936	551,479	1,531,151	1,586,109	19,756,358	7,125,905
2034	19,756,358	446,017	125,378	571,395	1,575,620	1,636,610	20,388,743	7,071,154
2035	20,388,743	464,190	127,869	592,059	1,620,503	1,689,335	21,049,634	7,019,579
2036	21,049,634	483,076	130,405	613,481	1,666,201	1,744,478	21,741,392	6,971,408
2037	21,741,392	502,690	132,990	635,680	1,712,729	1,802,244	22,466,587	6,926,868
2038	22,466,587	523,065	135,628	658,693	1,760,266	1,862,843	23,227,857	6,886,137
2039	23,227,857	544,228	138,319	682,547	1,809,250	1,926,484	24,027,638	6,849,269
2040	24,027,638	566,207	141,064	707,271	1,859,972	1,993,358	24,868,295	6,816,255
2041	24,868,295	589,035	143,865	732,900	1,912,687	2,063,664	25,752,172	6,787,039
2042	25,752,172	612,746	146,722	759,468	1,967,735	2,137,584	26,681,489	6,761,502
2043	26,681,489	637,375	149,637	787,012	2,025,489	2,215,291	27,658,303	6,739,463
2044	27,658,303	662,961	152,613	815,574	2,086,218	2,296,954	28,684,613	6,720,714
2045	28,684,613	689,546	155,649	845,195	2,150,285	2,382,726	29,762,249	6,705,001
2046	29,762,249	717,172	158,747	875,919	2,217,997	2,472,752	30,892,923	6,692,044
2047	30,892,923	745,882	161,907	907,789	2,289,574	2,567,173	32,078,311	6,681,561
2048	32,078,311	775,722	165,132	940,854	2,365,249	2,666,119	33,320,035	6,673,267
2049	33,320,035	806,738	168,422	975,160	2,445,202	2,769,725	34,619,718	6,666,890
2050	34,619,718	838,980	171,778	1,010,758	2,529,708	2,878,121	35,978,889	6,662,146
2051	35,978,889	872,501	175,202	1,047,703	2,619,015	2,991,425	37,399,002	6,658,756
2052	37,399,002	907,355	178,696	1,086,051	2,713,301	3,109,757	38,881,509	6,656,453
2053	38,881,509	943,598	182,260	1,125,858	2,812,732	3,233,236	40,427,871	6,654,988
2054	40,427,871	981,290	185,896	1,167,186	2,917,474	3,361,982	42,039,565	6,654,130
2055	42,039,565	1,020,490	189,605	1,210,095	3,027,684	3,496,115	43,718,091	6,653,665
2056	43,718,091	1,061,261	193,388	1,254,649	3,143,516	3,635,760	45,464,984	6,653,397

\* 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
2007	\$230,055	\$425,778	\$ (195,723)	(2.86)%	2032	\$532,283	\$1,486,547	\$ (954,264)	(5.14)%
2008	239,629	451,859	(212,230)	(2.94)%	2033	551,479	1,531,151	(979,672)	(5.12)%
2009	245,972	478,261	(232,289)	(3.05)%	2034	571,395	1,575,620	(1,004,225)	(5.08)%
2010	253,921	506,694	(252,773)	(3.16)%	2035	592,059	1,620,503	(1,028,444)	(5.04)%
2011	262,141	538,257	(276,116)	(3.28)%	2036	613,481	1,666,201	(1,052,720)	(5.00)%
2012	270,605	572,560	(301,955)	(3.41)%	2037	635,680	1,712,729	(1,077,049)	(4.95)%
2013	279,347	609,516	(330,169)	(3.55)%	2038	658,693	1,760,266	(1,101,573)	(4.90)%
2014	288,411	648,159	(359,748)	(3.69)%	2039	682,547	1,809,250	(1,126,703)	(4.85)%
2015	297,824	689,298	(391,474)	(3.84)%	2040	707,271	1,859,972	(1,152,701)	(4.80)%
2016	307,648	732,019	(424,371)	(3.98)%	2041	732,900	1,912,687	(1,179,787)	(4.74)%
2017	317,865	776,477	(458,612)	(4.13)%	2042	759,468	1,967,735	(1,208,267)	(4.69)%
2018	328,504	822,613	(494,109)	(4.27)%	2043	787,012	2,025,489	(1,238,477)	(4.64)%
2019	339,600	869,683	(530,083)	(4.40)%	2044	815,574	2,086,218	(1,270,644)	(4.59)%
2020	351,148	917,340	(566,192)	(4.52)%	2045	845,195	2,150,285	(1,305,090)	(4.55)%
2021	363,162	965,873	(602,711)	(4.64)%	2046	875,919	2,217,997	(1,342,078)	(4.51)%
2022	375,681	1,014,824	(639,143)	(4.74)%	2047	907,789	2,289,574	(1,381,785)	(4.47)%
2023	388,714	1,063,751	(675,037)	(4.84)%	2048	940,854	2,365,249	(1,424,395)	(4.44)%
2024	402,274	1,112,805	(710,531)	(4.92)%	2049	975,160	2,445,202	(1,470,042)	(4.41)%
2025	416,395	1,161,555	(745,160)	(5.00)%	2050	1,010,758	2,529,708	(1,518,950)	(4.39)%
2026	431,078	1,209,781	(778,703)	(5.05)%	2051	1,047,703	2,619,015	(1,571,312)	(4.37)%
2027	446,345	1,257,378	(811,033)	(5.10)%	2052	1,086,051	2,713,301	(1,627,250)	(4.35)%
2028	462,233	1,304,675	(842,442)	(5.13)%	2053	1,125,858	2,812,732	(1,686,874)	(4.34)%
2029	478,764	1,351,230	(872,466)	(5.15)%	2054	1,167,186	2,917,474	(1,750,288)	(4.33)%
2030	495,943	1,396,922	(900,979)	(5.16)%	2055	1,210,095	3,027,684	(1,817,589)	(4.32)%
2031	513,775	1,441,995	(928,220)	(5.16)%	2056	1,254,649	3,143,516	(1,888,867)	(4.32)%

\* Does not include contributions for administrative expenses.

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.



# Appendix

---

**Appendix**  
**Summary of Assumptions Used**  
**for the June 30, 2006 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 53. 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 wage 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. When no minimum COLA is in effect, price inflation is assumed to be 3.5% and the annual COLA is assumed to be 2.8% (80% of 3.5%), on a compounded basis.

*The number of active members* is assumed to remain constant although certain new hires on or after July 1, 2002 will participate in the Colleges and Universities 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 one year setback for men and a seven year age setback for women. Related values are shown on page 54. 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, 2006 Actuarial Valuation (continued)

*The probabilities of age and service retirement* are shown on page 54. 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 53. 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.

*Actuarial value of assets.* Valuation assets recognize assumed investment return fully each year. Differences between actual and assumed investment return are phased in over a closed five-year period. Valuation assets are not permitted to deviate from the market value by more than 20%.

*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 three 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, 2006

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
		23.8 %	24.7 %								
	0			0.04 %	0.03 %	0.16 %	0.18 %	2.7 %	4.0 %	6.7 %	
20	1	16.5	17.2	0.05	0.04	0.16	0.18	2.6	4.0	6.6	
25	2	13.4	13.5	0.06	0.04	0.16	0.18	2.2	4.0	6.2	
30	3	11.9	10.7	0.08	0.06	0.21	0.19	1.9	4.0	5.9	
35	4	12.0	10.7	0.12	0.08	0.26	0.32	1.4	4.0	5.4	
40	5+	12.0	11.0	0.19	0.11	0.34	0.37	1.2	4.0	5.2	
45		3.5	4.3	0.35	0.17	0.49	0.57	0.7	4.0	4.7	
50		2.8	3.6	0.59	0.31	1.07	0.89	0.7	4.0	4.7	
55		2.4	2.9	0.90	0.54	1.50	1.50	0.0	4.0	4.0	
60		2.4	2.9	1.44	0.83	1.60	1.70	0.0	4.0	4.0	
65		2.4	2.9								

\* 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, 2006**

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	\$203.29	\$213.24	\$135.93	\$157.34	38.46	44.22	19.70	26.02
45	192.77	205.14	126.72	150.77	33.73	39.41	17.50	23.70
50	180.29	195.04	116.43	143.29	29.17	34.67	15.35	21.39
55	165.93	182.93	106.32	135.58	24.82	30.06	13.43	19.18
60	149.43	168.96	97.83	127.14	20.70	25.67	11.87	17.01
65	130.80	152.92	90.83	117.40	16.82	21.50	10.56	14.82
70	111.02	134.67	82.22	105.26	13.32	17.57	9.13	12.50
75	91.88	114.99	70.84	89.45	10.36	13.99	7.49	10.00
80	73.43	95.64	56.19	71.98	7.83	10.91	5.66	7.62
85	57.86	76.96	42.26	56.19	5.89	8.29	4.08	5.66

**Percent of Eligible Active Members Retiring Next Year**

Retirement Ages	Year of Eligibility		
	1st Year	2nd Year	3rd Year
48	20.0 %	10.0 %	8.0 %
49	20.0	10.0	8.0
50	20.0	10.0	8.0
51	20.0	10.0	8.0
52	20.0	10.0	8.0
53	20.0	10.0	8.0
54	20.0	10.0	8.0
55	25.0	10.0	12.0
56	20.0	10.0	12.0
57	20.0	10.0	12.0
58	20.0	10.0	12.0
59	20.0	10.0	12.0
60	25.0	10.0	12.0
61	20.0	10.0	12.0
62	30.0	15.0	30.0
63	20.0	12.0	20.0
64	20.0	12.0	20.0
65	30.0	15.0	30.0
66	20.0	12.0	20.0
67	20.0	12.0	20.0
68	20.0	12.0	20.0
69	20.0	12.0	20.0
70	20.0	12.0	20.0
71	20.0	12.0	20.0
72	20.0	12.0	20.0
73	20.0	12.0	20.0
74	20.0	12.0	20.0
75 & over	20.0	12.0	100.0

Early retirement rates were assumed to be 5.0% from ages 57-61.

**Summary of Assumptions Used  
June 30, 2006  
Miscellaneous and Technical Assumptions**

Pay Increase Timing:	Middle of (Fiscal) year.
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 five years of service. Disability and withdrawal do not operate during normal 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.
Other Liability Adjustments:	None.
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.

Active and retired member data was reported as of May 31, 2006. It was brought forward to June 30, 2006 by adding one month of service for all active members and the June COLA for certain retired members. It is expected that this procedure resulted in a slight overstatement of total liabilities as of June 30, 2006. 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.

**Supplemental Disclosure Information**  
**June 30, 2006**

**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 five-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, 2006. 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 13<sup>th</sup> 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, 2006, the unfunded actuarial accrued liability of the System was determined as follows:

Actuarial Accrued Liability of System:	<u>\$ in Thousands</u>
Active members ( 37,203 vested, 17,290 non-vested)	\$ 3,669,338
Retirees and beneficiaries currently receiving benefits (27,052 vested)	3,875,909
Terminated members not yet receiving benefits (15,764 vested)	467,519
Future BackDROP Payments	<u>440</u>
Total Actuarial Accrued Liability	8,013,205
Actuarial Value of Assets	6,836,567
Unfunded Actuarial Accrued Liability	<u>\$ 1,176,638</u>

During the year ended June 30, 2006, the System experienced a net change of \$435,177,397 in the actuarial accrued liability. There were no changes in benefit provisions or assumptions.

**Supplemental Disclosure Information  
June 30, 2006**

**(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 an open basis as a level percent of payroll over a period of 30 years. The corresponding amortization factor is 16.65656.

During the year ended June 30, 2006 contributions totaling \$227,233,195 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	215,450,128	100
2002-03	2001	8.81	156,576,150	100
2003-04	2002	9.35	164,691,836	100
2004-05	2003	10.64	195,648,983	100
2005-06	2004	12.59	227,233,195	100
2006-07	2005	12.78		
<b>2007-08</b>	<b>2006</b>	<b>12.84</b>		

9-22-2006



## Supplemental Disclosure Information

June 30, 2006

(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)
6/30/1997 #*@	\$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
6/30/2003 # &	6,057,329,072	6,662,291,406	90.9	604,962,334	1,739,895,364	34.8
6/30/2004 *	6,118,214,495	7,230,010,928	84.6	1,111,796,433	1,737,454,454	64.0
6/30/2005 &@	6,435,344,102	7,578,028,017	84.9	1,142,683,915	1,806,600,560	63.3
<b>6/30/2006</b>	<b>6,836,567,188</b>	<b>8,013,205,414</b>	<b>85.3</b>	<b>1,176,638,226</b>	<b>1,777,277,138</b>	<b>66.2</b>

# After changes in benefit provisions.

\* After a change in assumptions.

@ After a change in asset method.

& After changes in methods other than the 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, 2006 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 following page)

## June 30, 2006 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 a Wage Inflation Assumption of 4.00% and  
an Investment Return Assumption of 8.50% Compounded Annually**

*Level % of Payroll Amortization:  
Open Amortization over 30 years*

Year	Active Member Payroll	Unfunded Actuarial Accrued Liability	UAAL Adjusted for Wage Inflation	Annual Contributions		UAAL as % of Payroll
				Dollars	% of Payroll	
-----\$ in millions-----						
1	\$1,777	\$1,177	\$1,177	\$71	3.97 %	66.20 %
2	1,848	1,203	1,157	72	3.91	65.09
3	1,922	1,230	1,137	74	3.84	63.99
4	1,999	1,258	1,118	76	3.78	62.91
5	2,079	1,286	1,099	77	3.71	61.85
6	2,162	1,315	1,081	79	3.65	60.80
7	2,249	1,344	1,062	81	3.59	59.78
8	2,339	1,374	1,044	83	3.53	58.77
9	2,432	1,405	1,027	84	3.47	57.78
10	2,530	1,437	1,010	86	3.41	56.80
11	2,631	1,469	992	88	3.35	55.84
12	2,736	1,502	976	90	3.30	54.90
13	2,845	1,536	959	92	3.24	53.97
14	2,959	1,570	943	94	3.19	53.06
15	3,078	1,606	927	96	3.13	52.17
16	3,201	1,642	911	99	3.08	51.29
17	3,329	1,678	896	101	3.03	50.42
18	3,462	1,716	881	103	2.98	49.57
19	3,600	1,755	866	105	2.93	48.73
20	3,744	1,794	851	108	2.88	47.91

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

*Level % of Payroll Amortization:  
Open Amortization over 30 years  
(concluded)*

Year	Active Member Payroll	Unfunded Actuarial Accrued Liability	UAAL Adjusted for Wage Inflation	Annual Contributions		UAAL as % of Payroll
				Dollars	% of Payroll	
-----\$ in millions-----						
21	\$3,894	\$1,834	\$837	\$110	2.83 %	47.10 %
22	4,050	1,875	823	113	2.78	46.31
23	4,212	1,918	809	115	2.73	45.52
24	4,380	1,961	795	118	2.69	44.76
25	4,556	2,005	782	120	2.64	44.00
26	4,738	2,050	769	123	2.60	43.26
27	4,927	2,096	756	126	2.55	42.53
28	5,125	2,143	743	129	2.51	41.81
29	5,330	2,191	731	132	2.47	41.10
30	5,543	2,240	718	134	2.43	40.41

## Active Members in Funding Program as of June 30, 2006

### By Age and Years of Service

#### Male

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	11							11	\$ 220,176
20-24	579	2						581	13,315,306
25-29	1,483	252	2					1,737	48,182,893
30-34	1,054	819	142	1				2,016	61,642,916
35-39	836	860	575	114	4			2,389	80,813,265
40-44	733	690	563	541	168	2		2,697	96,590,705
45-49	711	737	507	598	432	186	8	3,179	119,164,804
50-54	651	704	484	623	453	455	100	3,470	136,622,401
55-59	643	539	458	516	392	307	233	3,088	123,232,233
60	93	99	78	100	56	42	38	506	20,937,016
61	67	67	59	61	40	24	25	343	14,754,839
62	61	58	50	55	39	20	26	309	12,601,132
63	44	56	47	34	25	20	26	252	11,097,305
64	41	54	48	32	15	10	27	227	9,850,762
65	15	42	19	27	16	6	28	153	6,630,159
66	10	29	12	13	8	3	11	86	4,083,039
67	13	16	13	13	3	2	23	83	4,163,395
68	9	11	12	4	5	4	15	60	3,195,903
69	6	9	9	6	3	2	11	46	2,048,010
70 & Over	28	34	28	32	14	1	14	151	6,262,636
<b>Totals</b>	<b>7,088</b>	<b>5,078</b>	<b>3,106</b>	<b>2,770</b>	<b>1,673</b>	<b>1,084</b>	<b>585</b>	<b>21,384</b>	<b>\$ 775,408,895</b>

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

Age: 45.5 years.

Service: 10.7 years.

Annual Pay: \$36,261

# Active Members in Funding Program as of June 30, 2006

## By Age and Years of Service

### Female

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	29							29	\$ 487,935
20-24	1,021	15						1,036	22,141,810
25-29	2,280	556	8					2,844	73,908,087
30-34	1,474	1,493	327	6				3,300	93,696,913
35-39	1,260	1,380	1,043	334	24			4,041	119,703,650
40-44	1,237	1,221	850	728	454	49		4,539	138,853,409
45-49	1,137	1,209	813	757	725	656	53	5,350	167,998,127
50-54	982	1,116	819	784	640	675	365	5,381	175,356,222
55-59	753	904	715	681	544	331	255	4,183	134,330,967
60	93	126	110	111	75	41	27	583	17,828,578
61	67	96	86	62	53	26	14	404	12,754,670
62	53	80	67	69	34	16	19	338	10,670,677
63	43	71	62	57	38	22	12	305	10,054,180
64	39	49	39	44	20	9	14	214	6,772,424
65	20	42	37	31	13	10	9	162	4,875,522
66	16	23	21	23	11	2	6	102	3,379,063
67	11	13	7	15	3	3	9	61	1,898,667
68	8	10	16	15	7	3	7	66	2,137,058
69	3	6	12	7	1	5	7	41	1,291,925
70 & Over	21	20	25	26	11	12	15	130	3,728,359
<b>Totals</b>	<b>10,547</b>	<b>8,430</b>	<b>5,057</b>	<b>3,750</b>	<b>2,653</b>	<b>1,860</b>	<b>812</b>	<b>33,109</b>	<b>\$ 1,001,868,243</b>

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

Age: 44.3 years.

Service: 10.6 years.

Annual Pay: \$30,260

Basic Series

Year-by-Year Total Returns (1926-2005)

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
2002	-22.10	-13.28	16.33	17.84	12.93	1.65	2.38
2003	28.70	60.70	5.27	1.45	2.40	1.02	1.88
2004	10.87	18.39	8.72	8.51	2.25	1.20	3.26
2005	4.91	5.69	5.87	7.81	1.36	2.98	3.42

GABRIEL ROEDER SMITH & COMPANY from SBBi Yearbook

\* Calculated using December to December CPI-U (1982-84=100, when available), not seasonally adjusted.