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**The Report of the  
COMPILED 35th ANNUAL ACTUARIAL VALUATIONS  
Based Upon Data as of February 28, 2003  
and  
50 YEAR ACTUARIAL PROJECTIONS  
Beginning February 28, 2003  
for the  
Participating Employers  
of the  
MISSOURI LOCAL GOVERNMENT  
EMPLOYEES RETIREMENT SYSTEM**

**Submitted to  
THE BOARD OF TRUSTEES  
Missouri Local Government Employees Retirement System**

**Gabriel, Roeder, Smith & Company**

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October 8, 2003

The Board of Trustees  
Missouri Local Government Employees Retirement System  
Jefferson City, Missouri

**Submitted in this report** are the compiled results of the **35th annual actuarial valuations and 50-year actuarial projections** for the Missouri Local Government Employees Retirement System, as amended through February 28, 2003.

**The date of the valuations** was February 28, 2003. The projections cover the 50-year period beginning February 28, 2003.

**Actuarial valuations** of individual participating employers are made for the purposes of (i) revising employer contribution rates and (ii) examining the reserve strength of each separately experience-rated group. These individual valuations are made annually for each employer who was participating as of the preceding December 31. Such valuations were made for **803 groups (486 employers)**.

Actuarial valuations are also made of retired life benefits being paid from the Benefit Reserve Fund to determine the financial condition of this pooled Fund.

**The valuations were based upon data** furnished us concerning members, retirees and beneficiaries.

**The financial assumptions** used in making the valuations are shown in the Appendix of this report. Assumptions concerning future experience are needed for computing employer contribution rates. As time passes and actual experience develops, assumed and actual experiences are compared. From time to time one or more of the assumptions about the future are changed by the Board after consulting with the actuary. The non-economic assumptions used in performing the 2003 valuations were adopted by the Board in conjunction with a five year experience investigation for the period ending February 29, 2000. The last major changes were in economic assumptions, and these were first used in the 2001 valuations.

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**Your attention is directed particularly** to the COMMENTS on pages 2 and 3, and to the SHORT CONDITION TEST on page B-6.

Based upon the 2003 valuations it is our opinion that **LAGERS continues in sound condition in accordance with actuarial principles of level cost financing**. Overall financial condition is strong.

Respectfully submitted,

Mita D. Drazilov, A.S.A. M.A.A.A.      Judith A. Kermans, E.A., M.A.A.A.

MDD:JAK:rmg

## Comments on Valuation Results

**Individual valuations of participating employers.** There were 803 new employer contribution rates computed as of February 28, 2003. (Twenty-Eight groups had no active employees and a dollar contribution was calculated for them. These twenty-eight groups are excluded from the totals on this page.) Of the 803 new rates, 202 were decreases from the previous rates, 462 were increases from the previous rates and 139 were unchanged. Further detail is shown in section G. A ten year comparative schedule follows:

<b>Valuation Date</b>	<b>Decreases</b>	<b>Unchanged</b>	<b>Increases</b>	<b>Total</b>
2-28-94	246	96	303	645
2-28-95	403	67	185	655
2-29-96*	133	32	500	665
2-28-97	356	89	241	686
2-28-98	409	97	205	711
2-28-99	382	117	232	731
2-29-00	570	71	106	747
2-28-01*	605	97	75	777
2-28-02	326	157	308	791
<b>2-28-03</b>	<b>202</b>	<b>139</b>	<b>462</b>	<b>803</b>

\* Revised financial assumptions and/or funding method.

Decreases in employer contribution rates are seldom a problem. Increases can be a problem. Upward pressure on computed contribution rates resulted from (1) investment return on an actuarial value of assets basis being lower than the assumed rate and (2) other non-investment experience (including larger pay increases than assumed) for some valuation groups as well as membership changes for some small valuation groups. The upward pressure was somewhat offset by additional cost basis June 30, 2002 interest credits being allocated to the Employer Accumulation Fund due to the February 28, 2002 funded status of the Benefit Reserve Fund.

Investment return on a market value of assets basis was negative as of February 28, 2003. In addition, the market return has been negative the prior two valuation years causing the investment return on actuarial value of assets to be lower than assumed. (Beginning in 2003, the actuarial value of assets is not allowed to deviate from the market value of assets by more than 20%.) Unrecognized investment losses as of February 28, 2003 will be recognized over the next four years. If these unrecognized investment losses are not offset by future market gains (i.e. market returns in excess of the assumed rate), there will be an upward pressure on computed employer contribution rates.

**Retired life experience.** Financial activities were restructured in 1986. Sufficient reserves continue to provide benefit increases at the 4% maximum average annual rate, subject to inflation caps. The Benefit Reserve Fund funded ratio declined from 140.9% to 116.5% as of February 28, 2003, due to recognized investment return being lower than the assumed rate and additional cost basis June 30, 2002 interest credits being allocated to the Employer Accumulation Fund due to the February 28, 2002 funded status of the Benefit Reserve Fund. Page B-11 has detail.

## **Reserve Strength of Each Group Being Separately Experience-Rated**

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"Reserve strength" means the portion of accrued liabilities which are covered by accrued assets. The larger the portion, the greater the reserve strength. If liabilities become 100% covered by assets, the group is termed "fully funded."

At the time a local government joins LAGERS the reserve strength of that new employer is zero because there are no assets, while liabilities (for past service) have been generated.

Contributions to LAGERS are patterned so that reserve strength increases year by year.

However, this underlying pattern is being modified each year as actual financial experiences occur. Experiences more favorable than assumed cause reserve strength to increase more than planned, while less favorable experiences reduce reserve strength. Like snowflakes, no two groups have identical experiences.

In addition, reserve strength is lowered when a local government adopts a higher benefit formula (larger liabilities for past service are generated).

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The hundreds of separately experience-rated groups within LAGERS have considerable differences in reserve strength. These differences are summarized on page B-8.

Financially, LAGERS consists of a large number of diverse groups, not a large number of clones of a single LAGERS average.

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## **Section A**

### **Financial Principles**

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# **Financial Principles and Operational Techniques of LAGERS**

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**Promises Made, and To Be Paid For.** As each year is completed, the system in effect hands an "IOU" to each member then acquiring a year of service credit -- the "IOU" says: "The Missouri Local Government Employees Retirement System owes you one year's worth of retirement benefits, payments in cash commencing when you qualify for retirement."

The related *key financial questions* are:

**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?

**LAGERS intends that this year's taxpayers contribute the money to cover the IOUs being handed out this year.** By following this principle, **the employer contribution rate will remain approximately level from generation to generation** -- our children and our grandchildren will contribute the same percents of pay we contribute now.

(There are systems which have a design for deferring contributions to future taxpayers lured by a lower contribution rate now and putting aside the fact that the contribution rate must relentlessly grow much greater over decades of time -- consume now, and let your children face your **financial pollution** after you've retired.)

An inevitable by-product of the level-cost design is the accumulation of reserve assets, for decades, and the income produced when the assets are invested. **Invested assets are a by-product and not the objective.** **Investment income** becomes in effect **the 3rd contributor** for benefits to employees, and is interlocked with the contribution amounts required from employees and employers.

Translated to actuarial terminology, this level-cost objective means that the contribution rates must total at least the following:

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: liabilities for members' service already rendered; and the accrued assets of the governmental unit in the plan).



***Computing Contributions To Support System Benefits.*** From a given schedule of benefits and from the employee data and asset data furnished him, 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 return 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 pay increases; and the assumed age or ages at actual retirement.

In making an actuarial valuation the system must assume what the above experience will be, for the next year and for decades in the future. Only the subsequent actual experience of the System 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 the assumptions and regardless of the skill of the actuary and the calculations made. The future can be predicted with considerable but not complete precision, except that inflation seems to defy reliable prediction.

LAGERS copes with these continually changing differences by having ***annual actuarial valuations***, separately for each participating employer group. Each annual actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is continually changing employer contribution rates.

***Generally, the size of an annual change in employer rate is less than one percent of payroll (up or down)***, particularly for the larger groups, where activities of one or two employees have little effect on the group's status. In periods of volatile investment markets, groups with large Employer Accumulation Fund (EAF) balances may experience larger changes in computed rates.

To avoid causing employer budget problems, LAGERS provides a maximum annual increase of one percent of payroll for any one participating employer, but this limit is generally not needed (the February 28, 2003 valuations being a particular exception). Beginning with the February 28, 1999 valuations, the maximum allowed annual decrease in an employer contribution rate is also one percent of payroll, unless it is clear that a larger decrease will likely be long term in nature.



## The Actuarial Valuation Process

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The *actuarial valuation* is the mathematical process by which the contribution rate is determined, and the flow of activity constituting the valuation may be summarized as follows:

- A. ***Covered people data***, furnished by plan administrator, including:
  - Retired lives now receiving benefits
  - Former employees with vested benefits not yet payable
  - Active employees
  
- B. + ***Asset data*** (cash & investments), furnished by plan administrator
  
- C. + ***Assumptions concerning future financial experiences in various risk areas***, which assumptions are established by the Board of Trustees after consulting with the actuary
  
- D. + ***The funding method*** for determining employer contributions (the long-term, planned pattern for employer contributions)
  
- E. + ***Mathematically combining the assumptions, the funding method, and the data***
  
- F. = Determination of:
  - Plan financial position***
  - and/or ***New Employer Contribution Rate***.

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## **Section B**

### **Valuation Results**



**CHANGE in Employer Contributions\***  
**By Valuation Groups February 28, 2003**

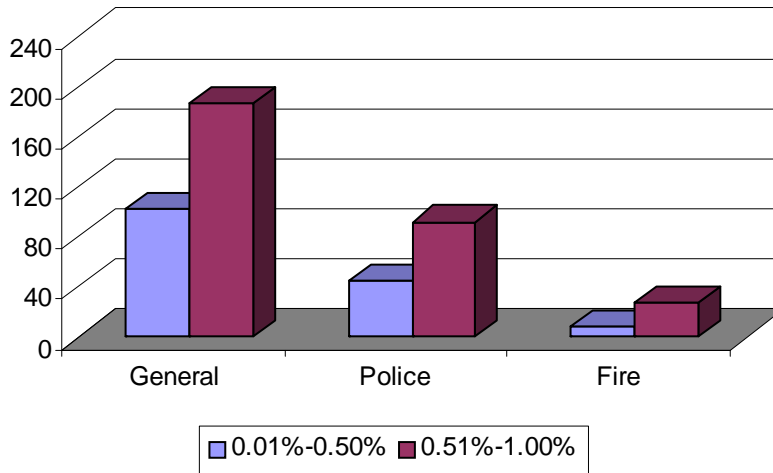
Group	Number of Active Members	Number of Valuation Groups with Indicated Change in Employer Contribution Rate						Totals
		Decreases			Unchanged 0.00%	Increases		
		Over 1.00%	0.51% to 1.00%	0.01% to 0.50%		0.01% to 0.50%	0.51% to 1.00%	
General:	1 - 9	9	19	37	29	34	59	187
	10 - 49	2	12	28	39	53	64	198
	50 & up	—	—	<u>16</u>	<u>9</u>	<u>16</u>	<u>64</u>	<u>105</u>
	Totals	11	31	81	77	103	187	490
Police:	1 - 9	5	18	17	23	17	34	114
	10 - 49	1	6	18	25	25	46	121
	50 & up	—	—	—	<u>3</u>	<u>3</u>	<u>12</u>	<u>18</u>
	Totals	6	24	35	51	45	92	253
Fire:	1 - 9	1	1	6	3	4	7	22
	10 - 49	1		4	8	4	15	32
	50 & up	—	<u>1</u>	—	—	—	<u>5</u>	<u>6</u>
	Totals	2	2	10	11	8	27	60
Totals		19	57	126	139	156	306	803

\* Includes changes in employer contribution rates due to actual experience, changes in actuarial assumptions and changes in actuarial methods. It does not include changes in employer contribution rates due to benefit program changes.

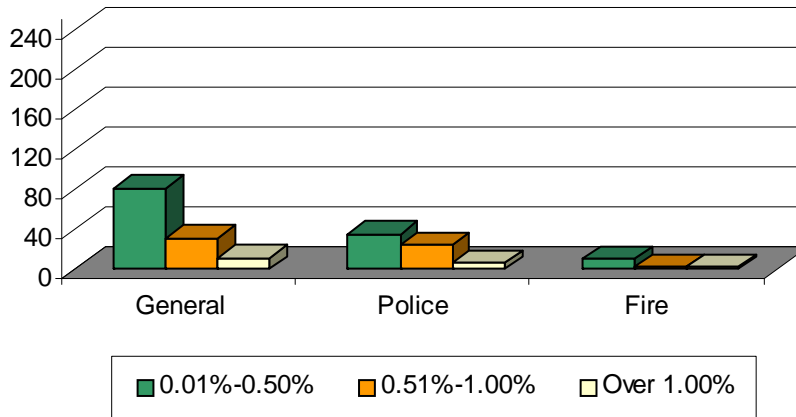
In broad terms, the smaller the group, the greater the chance of a relatively large change in employer rate from one year to the next.

# Missouri LAGERS Change in Employer Contribution Rate\* By Valuation Group

## Increases



## Decreases



\* Includes changes in employer contribution rates due to actual experience, changes in actuarial assumptions and changes in actuarial methods. It does not include changes in employer contribution rates due to benefit program changes.

## Schedule of Funding Progress

Each time a new employer joins the System, or an employer adopts a higher level of benefits, unfunded actuarial accrued liabilities are created. The law governing the System requires that these additional obligations be financed systematically over a period of future years.

In an inflationary economy the value of dollars is decreasing. This environment results in employee pays increasing in dollar amounts, retirement benefits increasing in dollar amounts, and then, unfunded actuarial accrued liabilities, all at a time when the actual substance of these items may be decreasing. Looking at just the dollar amounts of unfunded actuarial accrued liabilities can be misleading. Unfunded actuarial accrued liability dollars divided by active employee payroll provides an index which helps understanding. The smaller the ratio of unfunded liabilities to active member payroll, the stronger the System.

### Schedule of Funding Progress

Valuation Date	(a) Actuarial Value of Assets	(b) Entry Age Actuarial Accrued Liability	(b-a) Unfunded Accrued Liability (UAL)	(a/b) Funded Ratio	(c) Annual Covered Payroll	[(b-a)/c] UAL as a % of Covered Payroll
02/28/94	\$ 959,742,611	\$ 1,059,355,076	\$ 99,612,465	90.6%	\$ 505,208,639	19.7%
02/28/95	1,058,988,617	1,184,478,577	125,489,960	89.4	534,173,422	23.5
02/29/96 #	1,193,364,071	1,321,045,041	127,680,970	90.3	581,120,176	22.0
02/28/97	1,356,624,078	1,520,483,332	163,859,254	89.2	627,184,823	26.1
02/28/98	1,592,940,530	1,719,428,702	126,488,172	92.6	667,085,761	19.0
02/28/99	1,818,112,722	1,940,840,958	122,728,236	93.7	716,154,828	17.1
02/29/00	2,129,073,917	2,153,498,866	24,424,949	98.9	757,753,142	3.2
02/28/01 #	2,395,912,598	2,302,816,630	(93,095,968)	104.0	808,959,292	-
02/28/02	2,623,610,917	2,613,087,737	(10,523,180)	100.4	875,061,292	-
02/28/03	2,603,872,640	2,700,198,619	96,325,979	96.4	932,953,679	10.3

# Revised actuarial assumptions

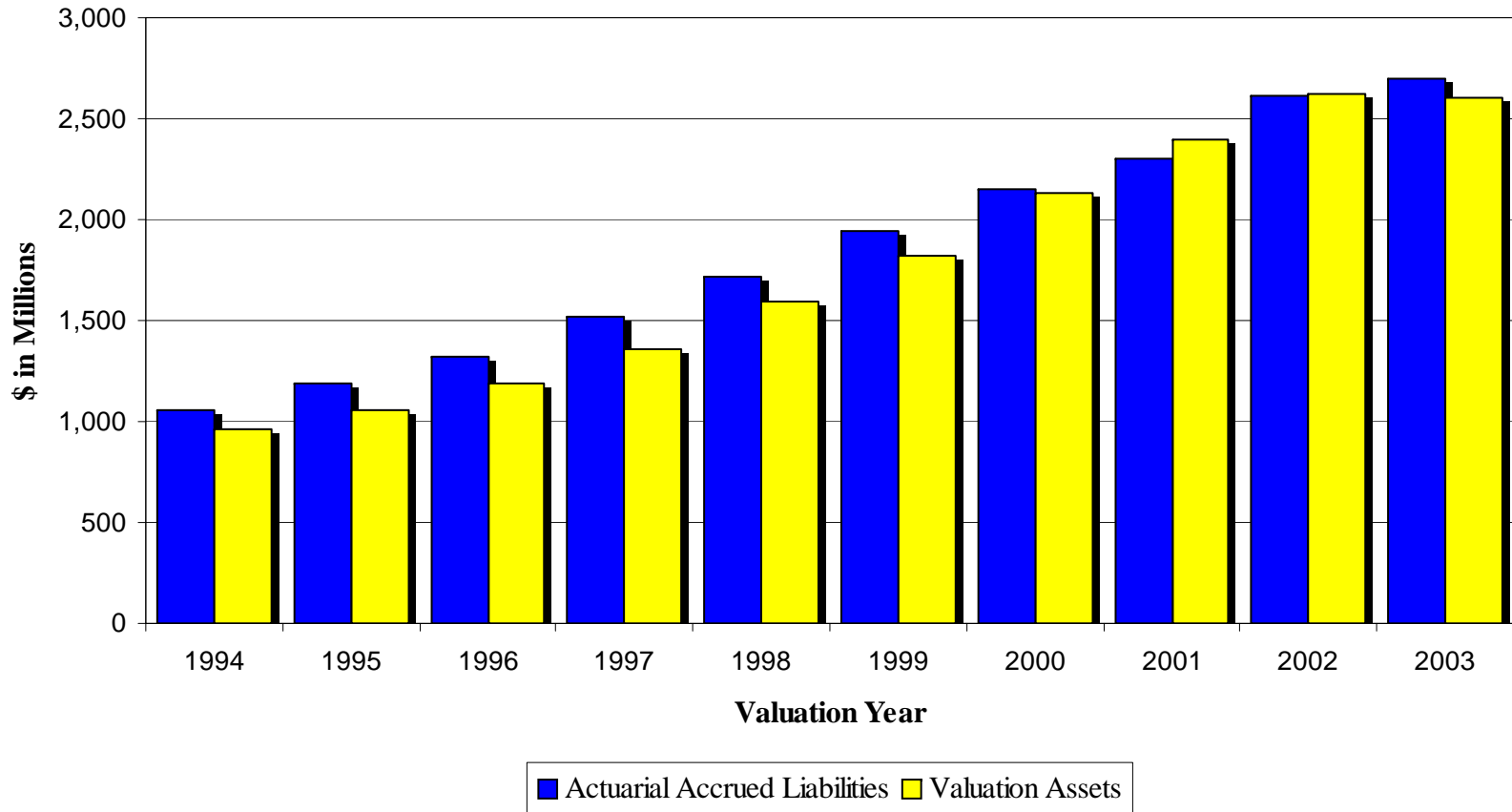
Each employer participating in the System is financially responsible for its own obligation. Accordingly, the aggregate numbers presented on this and the following pages are indicative only of the overall condition of the System and are not indicative of any one employer.

Factors that had a downward effect on the funded ratio this valuation year include:

- Employers adopting new benefit programs. For example, before reflecting the benefit changes adopted by political subdivisions during the year, the 2-28-02 and 2-28-03 Funded Ratios would have been 103.9% (instead of 100.4%) and 97.6% (instead of 96.4%), respectively.
- New employers joining LAGERS (who at time of joining do not have assets on hand to cover actuarial accrued liabilities associated with past service).
- The planned reduction in funding levels (through reduced employer contributions) for employers that are over 100% funded.
- Unfavorable investment experience based on the actuarial value of assets.

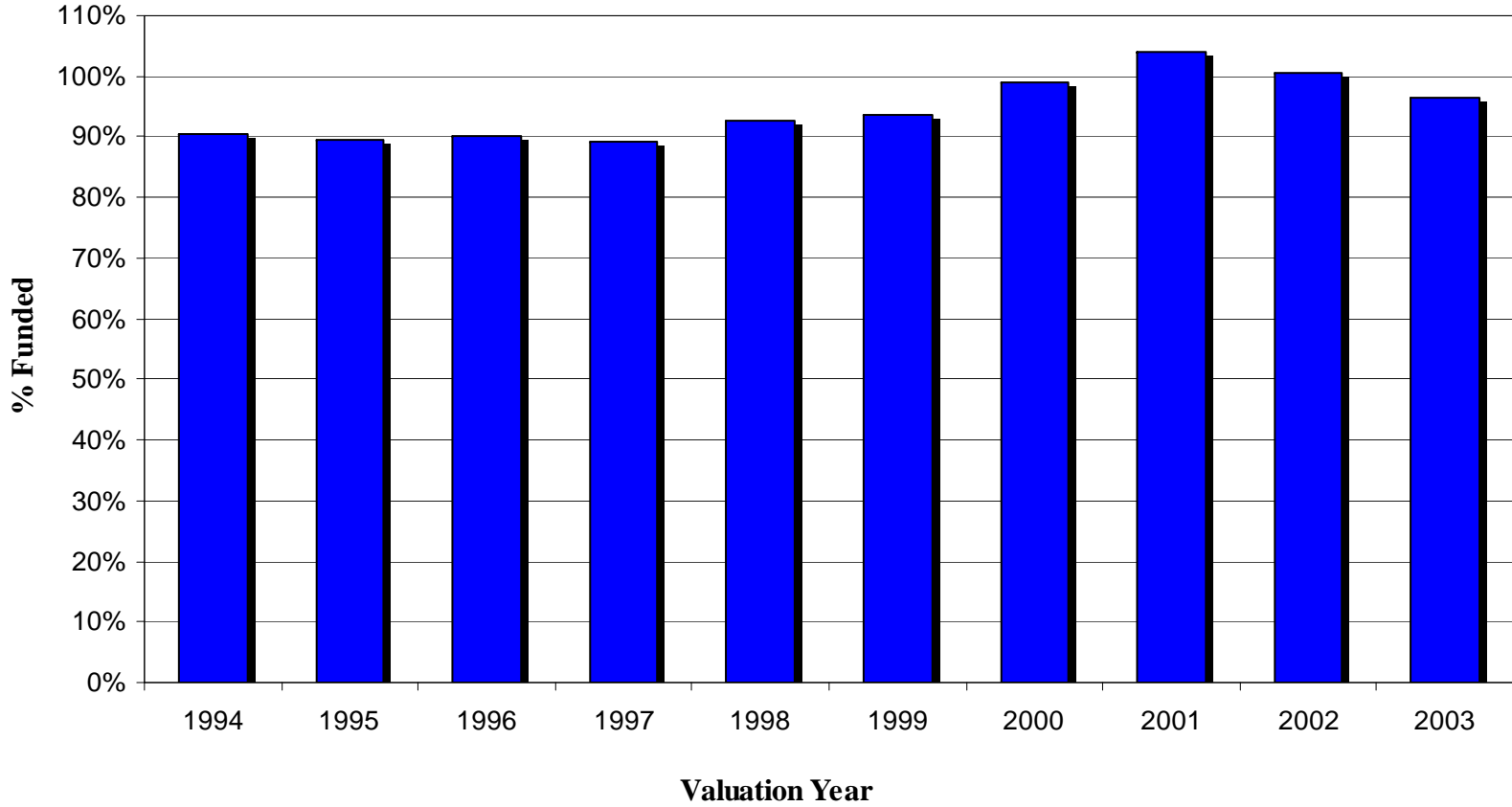
Factors that had an upward effect on the funded ratio this valuation year include scheduled employer contributions.

**Missouri LAGERS**  
**Portion of Actuarial Accrued Liabilities**  
**Covered by Valuation Assets**





**Missouri LAGERS  
Valuation Assets as a Percent of  
Actuarial Accrued Liabilities**









## Short Condition Test

The LAGERS funding objective is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the System are level in concept and soundly executed, the System will *pay all promised benefits when due -- the ultimate test of financial soundness*. Testing for level contribution rates is *the* long-term test.

A short condition test is one means of checking a system's progress under its funding program. In a short condition test, the plan's present assets (cash and investments) are compared with the actuarial accrued liabilities for: (1) active member contributions on deposit; (2) future benefits to present retired lives; and (3) service already rendered by active members. In a system that has been following the discipline of level percent of payroll financing, the liabilities for active member contributions on deposit and for future benefits to present retired lives will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members will be partially covered by the remainder of present assets. The larger the funded portion of liability 3, the stronger the condition of the system.

The schedule below illustrates the most recent 10 year history of the System's actuarial accrued liabilities and is indicative of the LAGERS policy of following the discipline of level percent of payroll financing.

### Short Condition Test Comparative Schedule

Valuation Date	Entry Age Accrued Liability For			Actuarial Value of Assets	Portion of Accrued Liability Covered by Assets		
	(1) Active Member Contributions	(2) Retirants and Beneficiaries*	(3) Active Members (Employer Financed Portion)		(1)	(2)	(3)
	02/28/94	\$ 61,796,221	\$ 346,699,587		\$ 650,859,268	\$ 959,742,611	100%
02/28/95	56,428,223	406,765,030	721,285,324	1,058,988,617	100	100	83
02/29/96 #	49,176,361	471,335,903	800,532,777	1,193,364,071	100	100	84
02/28/97	47,811,978	550,904,104	921,767,250	1,356,624,078	100	100	82
02/28/98	54,045,521	650,291,340	1,015,091,841	1,592,940,530	100	100	88
02/28/99	55,329,128	756,345,932	1,129,165,898	1,818,112,722	100	100	89
02/29/00	57,118,191	867,281,953	1,229,098,722	2,129,073,917	100	100	98
02/28/01 #	59,548,771	916,644,950	1,326,622,909	2,395,912,598	100	100	107
02/28/02	62,603,672	1,010,156,078	1,540,327,987	2,623,610,917	100	100	101
02/28/03	66,742,613	926,249,428	1,707,206,578	2,603,872,640	100	100	94

# Revised actuarial assumptions.

\* Includes reserve for future benefit increases.

## **Employers Accumulation Fund**

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*The Employers Accumulation Fund* assets totaled \$1,601,631,161 as of February 28, 2003 based on the actuarial value of assets. The individual participating Employers Accumulation Fund accrued liabilities (entry age actuarial cost method) were computed to be \$1,697,957,140 as of that date.

Each time a new employer joins the System, or an employer adopts a higher level of benefit, unfunded accrued liabilities are created. The law governing the System requires that these additional EAF liabilities be financed systematically over a period of future years.

*Each employer is financially responsible for its own EAF liabilities.* Accordingly, the aggregate numbers presented for the Employers Accumulation Fund are indicative only of overall condition and not indicative of the status of any individual employer.

### **Employers Accumulation Fund Aggregate Accrued Liabilities and Actuarial Value of Assets Comparative Statement**

<b>Valuation Date</b>	<b>Actuarial Value of Assets</b>	<b>Aggregate Accrued Liabilities</b>	<b>Ratio of Assets to Liabilities*</b>
2-28-94	\$ 542,150,265	\$ 641,762,730	84.5%
2-28-95	588,531,939	714,021,899	82.4
2-29-96#	668,023,673	795,704,643	84.0
2-28-97	756,144,924	920,004,178	82.2
2-28-98	882,637,910	1,009,126,082	87.5
2-28-99	1,000,606,196	1,123,334,432	89.1
2-29-00	1,198,046,097	1,222,471,046	98.0
2-28-01#	1,412,925,554	1,319,829,586	107.1
2-28-02	1,543,329,341	1,532,806,161	100.7
2-28-03	1,601,631,161	1,697,957,140	94.3

# *Revised actuarial assumptions.*

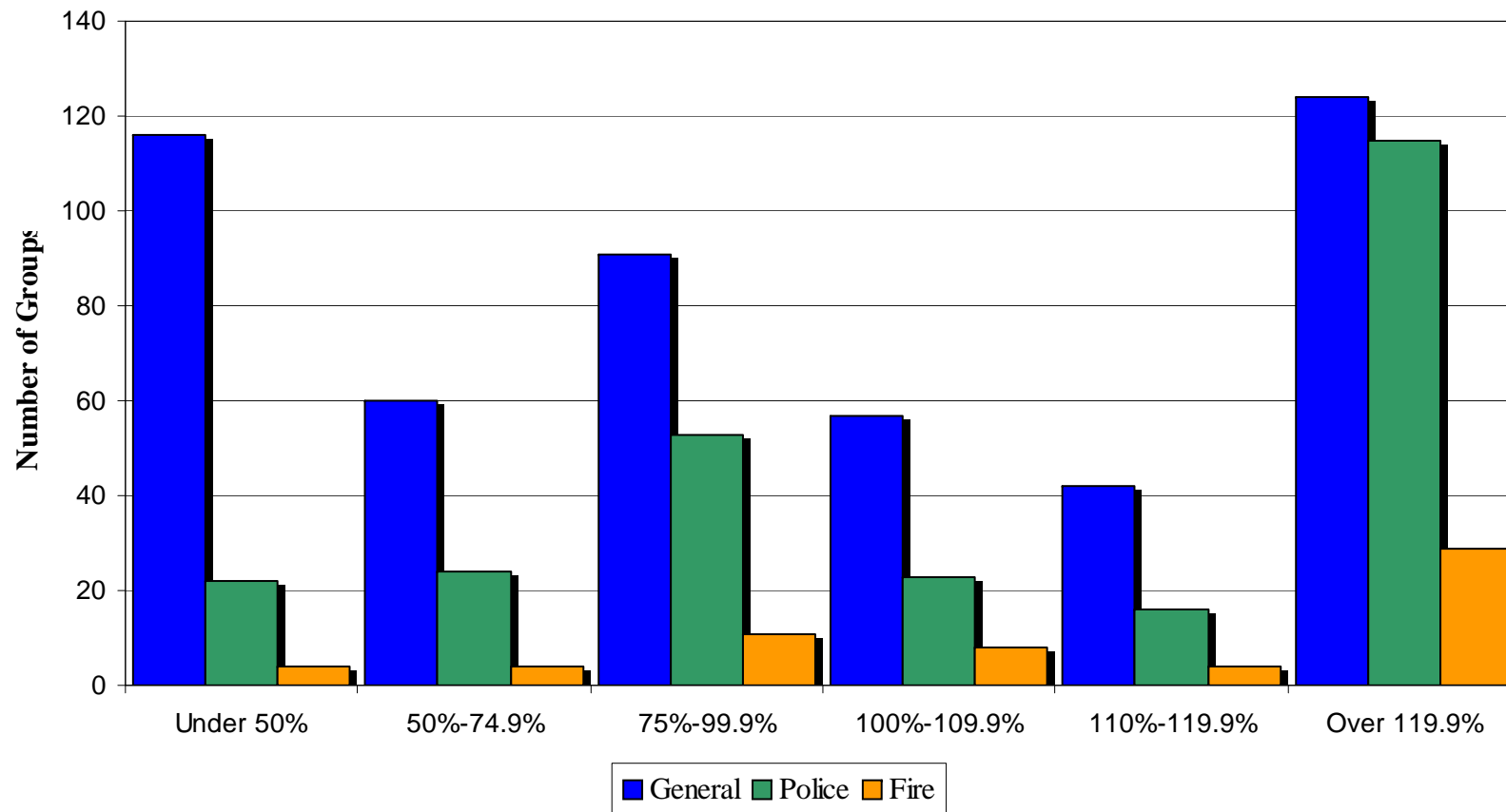
\* *The larger the ratio of assets to liabilities, the greater the reserve strength of the Employers Accumulation Fund.*

**Employers Accumulation Fund**  
**PORTION of LIABILITIES covered by ASSETS**  
**By Valuation Groups February 28, 2003**

Group	Number of Active Members	Number of Valuation Groups with Assets as a Percent of Actuarial Accrued Liabilities						Totals*
		Under 50.0%	50.0% - 74.9%	75.0% - 99.9%	100.0% - 109.9%	110.0% - 119.9%	Over 119.9%	
General:	1 - 9	85	26	21	15	5	35	187
	10 - 49	30	24	36	27	19	62	198
	50 & up	<u>1</u>	<u>10</u>	<u>34</u>	<u>15</u>	<u>18</u>	<u>27</u>	<u>105</u>
	Totals	116	60	91	57	42	124	490
Police:	1 - 9	17	12	19	7	5	54	114
	10 - 49	5	11	24	14	9	58	121
	50 & up	—	<u>1</u>	<u>10</u>	<u>2</u>	<u>2</u>	<u>3</u>	<u>18</u>
	Totals	22	24	53	23	16	115	253
Fire:	1 - 9	3	3	3	1	2	10	22
	10 - 49		1	6	4	2	19	32
	50 & up	<u>1</u>	—	<u>2</u>	<u>3</u>	—	—	<u>6</u>
	Totals	4	4	11	8	4	29	60
Totals*		142	88	155	88	62	268	803

\* Not included in this tabulation are 28 groups which presently have no active members.

**Missouri LAGERS  
Employers Accumulation Fund  
Portion of Liabilities Covered by Assets**







## Members Deposit Fund

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*The Members Deposit Fund* assets for active members totaled \$66,742,613 as of February 28, 2003.

The Members Deposit Fund actuarial accrued liabilities are set equal to assets.

### Members Deposit Fund Aggregate Actuarial Accrued Liabilities and Actuarial Value of Assets Comparative Statement

Valuation Date	Actuarial Value of Assets	Aggregate Accrued Liabilities	Ratio of Assets to Liabilities
2-28-94	\$ 66,788,290	\$ 66,788,290	100.0%
2-28-95	61,816,396	61,816,396	100.0
2-29-96	54,718,684	54,718,684	100.0
2-28-97	53,931,368	53,931,368	100.0
2-28-98	54,045,521	54,045,521	100.0
2-28-99	55,329,128	55,329,128	100.0
2-29-00	57,118,191	57,118,191	100.0
2-28-01	59,548,771	59,548,771	100.0
2-28-02	62,603,672	62,603,672	100.0
2-28-03	66,742,613	66,742,613	100.0

## Benefit Reserve Fund

*The Benefit Reserve Fund* assets as of February 28, 2003 totaled \$926,249,428 based on the actuarial value of assets. The present value of future benefits was computed to be \$794,736,064 as of that date.

When a member retires, there is transferred to the Benefit Reserve Fund a single sum reserve which will cover all future pension benefits; this reserve is calculated based on assumptions about mortality and an assumed annual investment return rate of 4%.

*Beginning in 1986*, each year LAGERS actual investment return rate is credited to the Benefit Reserve Fund. The excess, if any, of the actual investment return rate over the assumed 4% provides the money from which the Board can grant benefit increases after retirement. Beginning in 1999 the investment return credit is limited if the funded ratio exceeds 140%. Beginning in 2002 the threshold was changed to 125%.

The most recent such benefit increase occurred October 1, 2002 and consisted of an overall increase of 4% or less.

### Benefit Reserve Fund Actuarial Accrued Liabilities and Accrued Assets Comparative Statement

Annual Valuation Date	Pensions Being Paid	Benefit Increase % Last Oct. 1	Investment Return % Last June 30	Present Value of Future Benefits	Reserve for Future Experience	Accrued Liabilities	Actuarial Value of Assets	Ratio of Actuarial Value of Assets to PVFB
02/28/94	\$24,720,941	4.0%	11.7%	\$275,335,176	\$71,364,411	\$346,699,587	\$346,699,587	125.9%
02/28/95	28,599,681	4.0 @	8.5	320,595,384	86,169,646	406,765,030	406,765,030	126.9
02/29/96	32,341,869	4.0	7.0	361,100,952	110,234,951	471,335,903	471,335,903	130.5
02/28/97	36,759,417	4.0	13.5	410,670,528	140,233,576	550,904,104	550,904,104	134.1
02/28/98	41,599,468	4.0	11.4	467,563,884	182,727,456	650,291,340	650,291,340	139.1
02/28/99	46,365,846	4.0	17.0	520,260,156	236,085,776	756,345,932	756,345,932	145.4
02/29/00	51,921,290	4.0	5.6	583,429,164	283,852,789	867,281,953	867,281,953	148.7
02/28/01 #	57,989,017	4.0 @	14.4	636,824,117	279,820,833	916,644,950	916,644,950	143.9
02/28/02	65,001,494	4.0 @	3.1	717,019,826	293,136,252	1,010,156,078	1,010,156,078	140.9
02/28/03	71,769,505	4.0 @	(15.6)	794,736,064	131,513,364	926,249,428	926,249,428	116.5

# Revised actuarial assumptions.

@ The overall benefit increase % was 4.0% even though individuals received varying benefit increase %'s.



## Casualty Reserve Fund

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Beginning with the 1989 valuation, at the time a disability benefit becomes payable there is transferred from the Casualty Reserve Fund to the Benefit Reserve Fund the difference between (i) the full employer reserve covering the disability benefit and (ii) the accrued service liability of the Employer Accumulation Fund for the member who became disabled.

Employer contributions to cover the transfers described above are determined on a pooled-group basis (not separately for each financing group). The contribution rates, varying by size of benefit formula, were last changed in 1996.


If there is a positive balance in the Casualty Reserve Fund at any time, it indicates that cumulative past contributions have fully funded the cumulative past obligations --- similarly, a negative balance would indicate that cumulative past contributions have fallen short of the target.

For actuarial valuation purposes, actuarial accrued liabilities equal the actuarial value of assets.


### Casualty Reserve Fund Actuarial Value of Assets at Valuation Dates Comparative Statement

Valuation Date	Employer L-1 Contributions: Year Ended	Actuarial Value of Assets	Accrued Liabilities	Assets Expressed as Percents of Member Payroll	
				Total	Change
02/28/94	0.2%	\$ 4,104,469	\$ 4,104,469	0.8%	-0.2%
02/28/95	0.2	1,875,252	1,875,252	0.4	-0.4
02/29/96	0.5	(714,189)	(714,189)	-0.1	-0.5
02/28/97	0.5	(4,356,318)	(4,356,318)	-0.7	-0.6
02/28/98 @	0.5	5,965,759	5,965,759	0.9	1.6
02/28/99	0.5	5,831,466	5,831,466	0.8	-0.1
02/29/00	0.5	6,627,676	6,627,676	0.9	0.1
02/28/01	0.5	6,793,323	6,793,323	0.8	-0.1
02/28/02	0.5	7,521,826	7,521,826	0.9	0.1
02/28/03	0.5	9,249,438	9,249,438	1.0	0.1

@ Reflects special \$10 million transfer to the Casualty Reserve Fund.



**Section C**  
**Projection Results**



## **Introduction: The Nature of Actuarial Projections**

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Regular actuarial valuations measure the retirement system's present financial position and contribution adequacy by calculating and financing the liabilities created by the 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 return to be received. This is done by actuarial projections.

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 expected contributions and investment earnings produces the net cash flow of the system each year, and thus end of year asset levels.

Projection results are useful in demonstrating changing relationships among key elements affecting system financial activity. For example: how benefits 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). However, projections can increase the understanding of the emerging and changing relationships between future benefit payout and future investment income.

This section presents the results of a 50 year open group actuarial projection of LAGERS' experience based on regular actuarial assumptions and February 28, 2003 census data. Each department (general, police, fire, etc.) of each employer is separately projected, based on the benefit provisions and actuarial assumptions applicable to that department. The results have been summarized over the 803 departments and presented in this report.

## Summary Observations

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The actuarial projections of LAGERS are based on regular valuation assumptions and lead to some general observations:

- 1) The ratio of active members to retirees will decline gradually over the next 50 years from the present level of 2.5 to 1 to a low point of 0.7 to 1 (see page C-12). The decline in the active/retiree ratio may be postponed if the active member population grows, either due to new employers joining LAGERS or an increase in the existing employers' work forces. The ultimate active/retiree ratio may be greater than 0.7 to 1 if the lump sum cash out feature for short service vested members becomes much more popular.
- 2) The growth of the trust fund is expected to continue indefinitely, because of the projected 4% inflation. In real terms, assets will rise by about 69% over the present level, and remain approximately constant thereafter.
- 3) Investment return is now and will continue to be the largest source of revenue for the retirement system (see page C-14 or C-18).
- 4) In the next few years LAGERS' benefit payout will become larger than the employer and member contributions (see page C-16). The system will begin to rely in part on investment return to pay benefits. This is the normal and expected situation. At this point the system begins to reap the rewards of actuarial pre- or advance funding. In fact, in about 18 years investment income will pay more of the benefits than paid by employer and member contributions. Investment liquidity will become an important issue beginning in the next few years. Liquidity needs will increase gradually until eventually leveling off at about 3.5% of assets. The 3.5% annual real investment return (return in excess of inflation) will be used to pay benefits, while the 4% inflation portion of investment return will be needed to maintain the value of the portfolio.
- 5) Benefit payout relative to active member payroll will increase with time, and will level out at over 25% of payroll. Meanwhile, employer and member contributions will level out at about 10.2% of payroll based upon the 7.5% assumed investment return rate (see page C-18). If unrecognized investment losses are not offset by future market gains, employer contributions will increase in the short term



- 6) The current funded ratio, 96.4%, gradually increases towards 100% over the projection period. Since amortization periods never fall below 15 years, the negative unfunded accrued liability slowly gets smaller and smaller in real dollars, but never quite drops to zero. This smooth progression, of course, is based on earning a constant 7.5% projected investment return.
  
- 7) An interesting finding relates to the program of annual post-retirement benefit increases. The valuation assumption for investment return is 7.5% annually, and for post-retirement increases 2.88%, compounded annually. The projection assumes that a 7.5% annual rate of investment return is earned on the entire portfolio (including the retiree portion of the assets). Based on the projected 7.5% annual return, an annual 2.88% compound post-retirement benefit increase is supportable indefinitely. Annual increases above 2.88%, up to the maximum 4% average increase specified in statute, cannot be financed indefinitely by the Reserve for Future Experience in the Benefit Reserve Fund (\$293 million as of February 28, 2003). However, it turns out that unless investment return exceeds 7.5% on average, the Reserve for Future Experience will be exhausted in about 20-30 years (if the full 4% COLA is granted). Therefore, investment income in excess of 7.5% will be needed to maintain the 4% annual benefit increases.

## Characteristics of Future Members

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The assumed characteristics of future members have a powerful effect on the results of 50-year projections, since future members are the major portion of the active member group for most of the 50 years (see page C-5).

The characteristics assumed for these projections are those of current members at the time they were hired.

<b>Characteristics of Future Members At Time of Employment</b>	
<b>Age</b>	<b>Percent</b>
Below 25	22.1%
25-29	20.9%
30-34	15.9%
35-39	13.5%
40-44	11.2%
45-49	7.8%
50-54	4.9%
55 & Up	3.7%
Total	100.0%
Males	64.5%
Females	35.5%
Total	100.0%
Average Pay (2003 \$)	\$27,709

## LAGERS Active Member Population 2004-2053

February 28	Active Members			February 28	Active Members		
	Present	Future	Total		Present	Future	Total
2004	24,915	2,894	27,809	2029	1,697	26,112	27,809
2005	22,693	5,116	27,809	2030	1,438	26,371	27,809
2006	20,807	7,002	27,809	2031	1,210	26,599	27,809
2007	19,167	8,642	27,809	2032	1,010	26,799	27,809
2008	17,692	10,117	27,809	2033	833	26,976	27,809
2009	16,317	11,492	27,809	2034	680	27,129	27,809
2010	15,031	12,778	27,809	2035	549	27,260	27,809
2011	13,818	13,991	27,809	2036	439	27,370	27,809
2012	12,675	15,134	27,809	2037	347	27,462	27,809
2013	11,610	16,199	27,809	2038	271	27,538	27,809
2014	10,611	17,198	27,809	2039	208	27,601	27,809
2015	9,677	18,132	27,809	2040	156	27,653	27,809
2016	8,799	19,010	27,809	2041	115	27,694	27,809
2017	7,969	19,840	27,809	2042	82	27,727	27,809
2018	7,190	20,619	27,809	2043	57	27,752	27,809
2019	6,460	21,349	27,809	2044	38	27,771	27,809
2020	5,781	22,028	27,809	2045	25	27,784	27,809
2021	5,149	22,660	27,809	2046	16	27,793	27,809
2022	4,565	23,244	27,809	2047	10	27,799	27,809
2023	4,026	23,783	27,809	2048	6	27,803	27,809
2024	3,532	24,277	27,809	2049	3	27,806	27,809
2025	3,085	24,724	27,809	2050	2	27,807	27,809
2026	2,679	25,130	27,809	2051	1	27,808	27,809
2027	2,311	25,498	27,809	2052	0	27,809	27,809
2028	1,987	25,822	27,809	2053	0	27,809	27,809

Within 8 years it is expected that over half of the active member population will consist of people entering the system after the valuation date (February 28, 2003).

## LAGERS Present Active Members 2004-2053

February 28	Present Active Members	Group Averages		February 28	Present Active Members	Group Averages	
		Age	Service			Age	Service
2004	24,915	44.2	10.4	2029	1,697	57.6	30.7
2005	22,693	45.1	11.4	2030	1,438	58.1	31.5
2006	20,807	45.9	12.4	2031	1,210	58.5	32.3
2007	19,167	46.6	13.4	2032	1,010	59.0	33.1
2008	17,692	47.4	14.3	2033	833	59.4	33.9
2009	16,317	48.1	15.2	2034	680	59.9	34.7
2010	15,031	48.7	16.0	2035	549	60.3	35.5
2011	13,818	49.4	16.9	2036	439	60.7	36.3
2012	12,675	50.0	17.7	2037	347	61.2	37.2
2013	11,610	50.6	18.5	2038	271	61.6	38.0
2014	10,611	51.1	19.3	2039	208	62.1	38.8
2015	9,677	51.7	20.1	2040	156	62.6	39.7
2016	8,799	52.2	20.9	2041	115	63.0	40.6
2017	7,969	52.7	21.7	2042	82	63.6	41.4
2018	7,190	53.1	22.4	2043	57	64.1	42.3
2019	6,460	53.6	23.2	2044	38	64.8	43.2
2020	5,781	54.0	23.9	2045	25	65.5	44.1
2021	5,149	54.4	24.7	2046	16	66.2	45.1
2022	4,565	54.8	25.4	2047	10	66.8	46.0
2023	4,026	55.2	26.2	2048	6	67.4	46.9
2024	3,532	55.6	26.9	2049	3	68.0	47.8
2025	3,085	56.0	27.6	2050	2	68.5	48.7
2026	2,679	56.4	28.4	2051	1	69.0	49.5
2027	2,311	56.8	29.2	2052	0	69.3	50.2
2028	1,987	57.2	29.9	2053	0	69.8	51.0

Approximately 92% of the current active population will no longer be active after 25 years.

**LAGERS Future Active Members  
2004-2053**

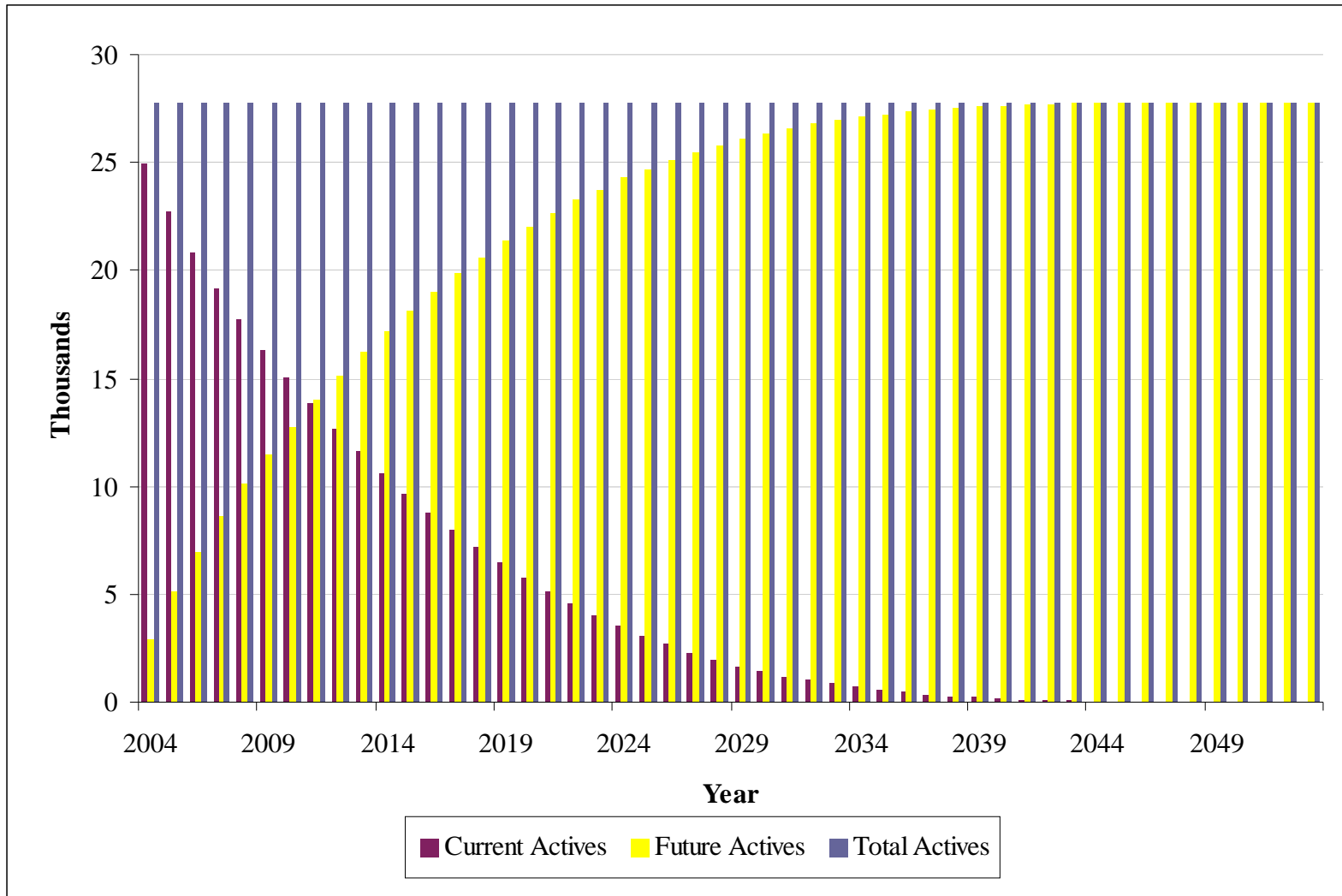
February 28	Future Active Members	Group Averages		February 28	Future Active Members	Group Averages	
		Age	Service			Age	Service
2004	2,894	33.5	0.0	2029	26,112	40.9	8.1
2005	5,116	34.0	0.5	2030	26,371	41.0	8.3
2006	7,002	34.3	0.9	2031	26,599	41.2	8.5
2007	8,642	34.7	1.3	2032	26,799	41.3	8.7
2008	10,117	35.1	1.7	2033	26,976	41.4	8.9
2009	11,492	35.4	2.1	2034	27,129	41.5	9.0
2010	12,778	35.8	2.4	2035	27,260	41.6	9.1
2011	13,991	36.1	2.8	2036	27,370	41.7	9.3
2012	15,134	36.5	3.1	2037	27,462	41.8	9.4
2013	16,199	36.8	3.5	2038	27,538	41.8	9.4
2014	17,198	37.1	3.8	2039	27,601	41.9	9.5
2015	18,132	37.5	4.2	2040	27,653	41.9	9.6
2016	19,010	37.8	4.5	2041	27,694	41.9	9.6
2017	19,840	38.1	4.8	2042	27,727	42.0	9.7
2018	20,619	38.4	5.1	2043	27,752	42.0	9.7
2019	21,349	38.6	5.4	2044	27,771	42.0	9.7
2020	22,028	38.9	5.8	2045	27,784	42.0	9.7
2021	22,660	39.2	6.0	2046	27,793	42.0	9.7
2022	23,244	39.4	6.3	2047	27,799	42.0	9.8
2023	23,783	39.7	6.6	2048	27,803	42.0	9.8
2024	24,277	39.9	6.9	2049	27,806	42.0	9.8
2025	24,724	40.1	7.2	2050	27,807	42.0	9.8
2026	25,130	40.3	7.4	2051	27,808	42.0	9.7
2027	25,498	40.5	7.7	2052	27,809	42.0	9.7
2028	25,822	40.7	7.9	2053	27,809	42.0	9.7

**LAGERS Total Active Members  
Group Averages - 2004-2053**

February 28	Total Active Members	Group Averages				February 28	Total Active Members	Group Averages			
		Age	Service	Pay				Age	Service	Pay	
				Inflated	2004 \$					Inflated	2004 \$
2004	27,809	43.1	9.3	\$34,949	\$34,949	2029	27,809	41.9	9.5	\$93,730	\$35,160
2005	27,809	43.0	9.4	36,390	34,990	2030	27,809	41.9	9.5	97,577	35,195
2006	27,809	43.0	9.5	37,891	35,032	2031	27,809	41.9	9.6	101,576	35,228
2007	27,809	42.9	9.6	39,436	35,058	2032	27,809	41.9	9.6	105,731	35,259
2008	27,809	42.9	9.7	41,030	35,073	2033	27,809	42.0	9.6	110,040	35,284
2009	27,809	42.8	9.7	42,659	35,063	2034	27,809	42.0	9.6	114,516	35,307
2010	27,809	42.8	9.8	44,354	35,054	2035	27,809	42.0	9.7	119,168	35,329
2011	27,809	42.7	9.8	46,107	35,038	2036	27,809	42.0	9.7	123,999	35,347
2012	27,809	42.6	9.8	47,922	35,016	2037	27,809	42.0	9.7	129,021	35,364
2013	27,809	42.5	9.8	49,809	34,995	2038	27,809	42.0	9.7	134,240	35,379
2014	27,809	42.5	9.7	51,768	34,973	2039	27,809	42.0	9.7	139,658	35,391
2015	27,809	42.4	9.7	53,811	34,955	2040	27,809	42.0	9.7	145,284	35,401
2016	27,809	42.3	9.7	55,939	34,939	2041	27,809	42.0	9.8	151,129	35,409
2017	27,809	42.3	9.6	58,155	34,926	2042	27,809	42.0	9.8	157,197	35,414
2018	27,809	42.2	9.6	60,474	34,922	2043	27,809	42.0	9.8	163,502	35,418
2019	27,809	42.1	9.6	62,892	34,922	2044	27,809	42.0	9.8	170,051	35,420
2020	27,809	42.0	9.5	65,418	34,927	2045	27,809	42.0	9.8	176,856	35,420
2021	27,809	42.0	9.5	68,057	34,939	2046	27,809	42.0	9.8	183,928	35,420
2022	27,809	41.9	9.5	70,808	34,953	2047	27,809	42.0	9.8	191,276	35,418
2023	27,809	41.9	9.4	73,679	34,971	2048	27,809	42.0	9.8	198,914	35,416
2024	27,809	41.9	9.4	76,677	34,994	2049	27,809	42.0	9.8	206,854	35,413
2025	27,809	41.9	9.4	79,807	35,022	2050	27,809	42.0	9.8	215,110	35,410
2026	27,809	41.9	9.4	83,073	35,053	2051	27,809	42.0	9.7	223,695	35,407
2027	27,809	41.9	9.5	86,473	35,084	2052	27,809	42.0	9.7	232,623	35,404
2028	27,809	41.9	9.5	90,029	35,122	2053	27,809	42.0	9.7	241,908	35,401

Average pay in year 2004 dollars provides a constant measure of purchasing power. In 2053, a participant earning a pay of \$241,908 will be in the same relative financial position as the average participant today.

# Active Population – Present and Future



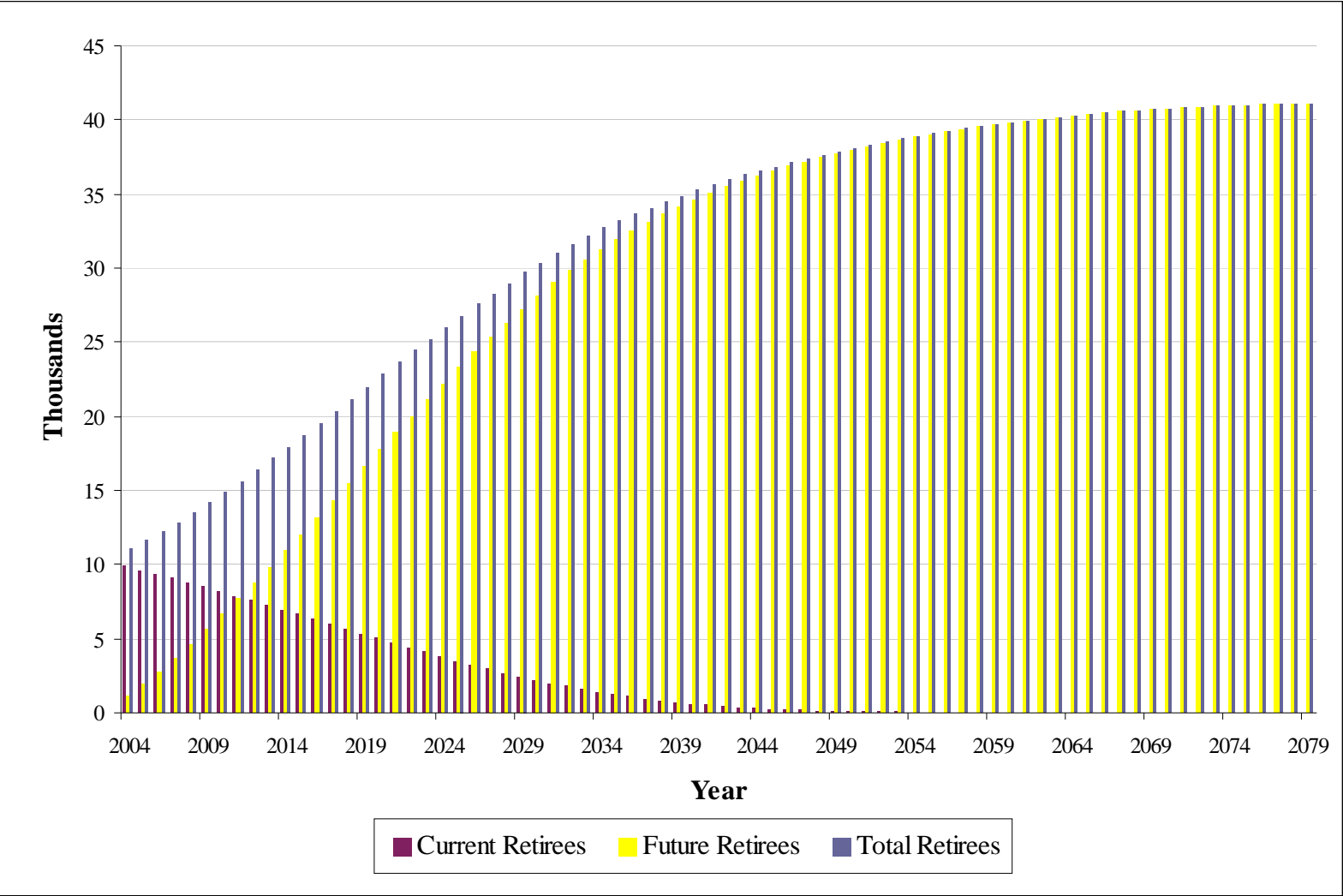
## LAGERS Retiree Population 2004-2053

February 28	Retirees			February 28	Retirees		
	Present	Future	Total		Present	Future	Total
2004	9,879	1,164	11,043	2029	2,460	27,259	29,719
2005	9,633	1,981	11,614	2030	2,227	28,135	30,362
2006	9,365	2,825	12,190	2031	2,005	29,034	31,039
2007	9,091	3,697	12,788	2032	1,797	29,855	31,652
2008	8,807	4,636	13,443	2033	1,603	30,627	32,230
2009	8,509	5,643	14,152	2034	1,423	31,306	32,729
2010	8,209	6,691	14,900	2035	1,258	31,947	33,205
2011	7,903	7,719	15,622	2036	1,106	32,539	33,645
2012	7,589	8,778	16,367	2037	965	33,111	34,076
2013	7,270	9,865	17,135	2038	840	33,654	34,494
2014	6,954	10,944	17,898	2039	727	34,167	34,894
2015	6,636	12,022	18,658	2040	626	34,663	35,289
2016	6,319	13,160	19,479	2041	536	35,104	35,640
2017	5,999	14,306	20,305	2042	459	35,526	35,985
2018	5,678	15,460	21,138	2043	390	35,903	36,293
2019	5,356	16,609	21,965	2044	329	36,253	36,582
2020	5,037	17,776	22,813	2045	277	36,584	36,861
2021	4,723	18,913	23,636	2046	232	36,900	37,132
2022	4,412	20,009	24,421	2047	193	37,199	37,392
2023	4,105	21,103	25,208	2048	160	37,483	37,643
2024	3,808	22,194	26,002	2049	133	37,750	37,883
2025	3,517	23,258	26,775	2050	108	37,999	38,107
2026	3,236	24,331	27,567	2051	90	38,234	38,324
2027	2,968	25,333	28,301	2052	74	38,458	38,532
2028	2,707	26,297	29,004	2053	61	38,666	38,727

The present retiree group changes much more gradually than the active member group. Just over half of the present retiree group is expected to be still drawing benefits after 15 years.



# Retiree Population – Present and Future



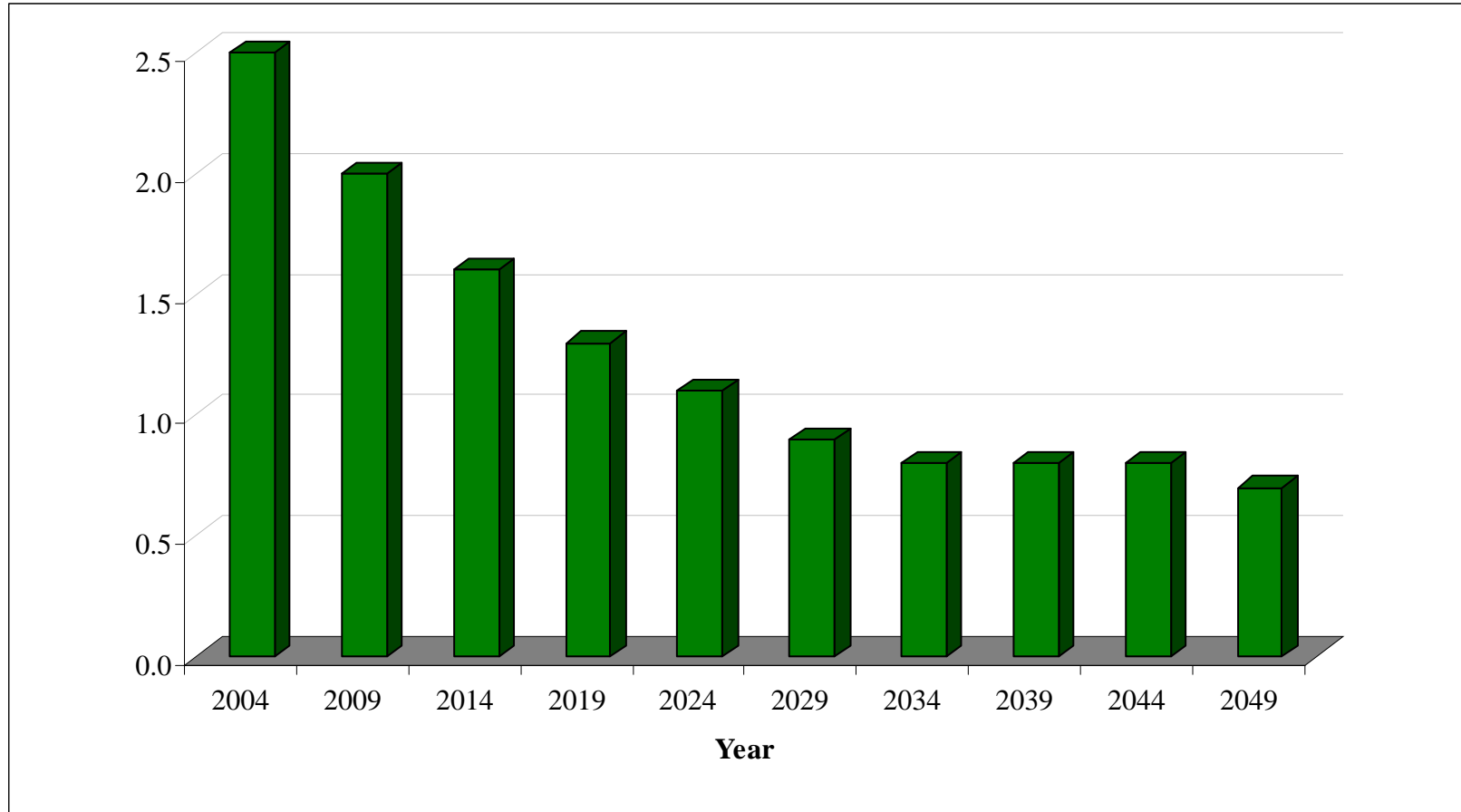
## Ratio of Active Members to Retirees - 2004-2053

<b>February 28</b>	<b>Active Members</b>	<b>Retirees</b>	<b>A/R</b>	<b>February 28</b>	<b>Active Members</b>	<b>Retirees</b>	<b>A/R</b>
2004	27,809	11,043	2.5	2029	27,809	29,719	0.9
2005	27,809	11,614	2.4	2030	27,809	30,362	0.9
2006	27,809	12,190	2.3	2031	27,809	31,039	0.9
2007	27,809	12,788	2.2	2032	27,809	31,652	0.9
2008	27,809	13,443	2.1	2033	27,809	32,230	0.9
2009	27,809	14,152	2.0	2034	27,809	32,729	0.8
2010	27,809	14,900	1.9	2035	27,809	33,205	0.8
2011	27,809	15,622	1.8	2036	27,809	33,645	0.8
2012	27,809	16,367	1.7	2037	27,809	34,076	0.8
2013	27,809	17,135	1.6	2038	27,809	34,494	0.8
2014	27,809	17,898	1.6	2039	27,809	34,894	0.8
2015	27,809	18,658	1.5	2040	27,809	35,289	0.8
2016	27,809	19,479	1.4	2041	27,809	35,640	0.8
2017	27,809	20,305	1.4	2042	27,809	35,985	0.8
2018	27,809	21,138	1.3	2043	27,809	36,293	0.8
2019	27,809	21,965	1.3	2044	27,809	36,582	0.8
2020	27,809	22,813	1.2	2045	27,809	36,861	0.8
2021	27,809	23,636	1.2	2046	27,809	37,132	0.7
2022	27,809	24,421	1.1	2047	27,809	37,392	0.7
2023	27,809	25,208	1.1	2048	27,809	37,643	0.7
2024	27,809	26,002	1.1	2049	27,809	37,883	0.7
2025	27,809	26,775	1.0	2050	27,809	38,107	0.7
2026	27,809	27,567	1.0	2051	27,809	38,324	0.7
2027	27,809	28,301	1.0	2052	27,809	38,532	0.7
2028	27,809	29,004	1.0	2053	27,809	38,727	0.7

The ratio of active members to retirees (A/R) is expected to decline steadily until it reaches a level of about 0.7. This is a reasonable result, given the mixture of retirement conditions in LAGERS, the 5 year vesting provision, and the large number of non-contributory members.

## Ratio of Active Members to Retirees

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## 50 Year Fund Projection

### Based on Valuation Assumptions – (\$ in Thousands)

Year Ended February 28	Assets BOY	Contributions				Benefits	Investment Income	Assets EOY	
		Current Cost	Disability Cost	UAAL Payment	Total			Inflated	2004 \$
		2004	\$2,603,873	\$91,718	\$5,667			\$2,067	\$99,452
2005	2,820,274	95,523	5,902	3,703	105,128	89,348	212,112	3,048,166	2,930,929
2006	3,048,166	99,462	6,145	5,067	110,674	99,689	229,025	3,288,176	3,040,103
2007	3,288,176	103,541	6,397	6,254	116,192	110,876	246,812	3,540,304	3,147,318
2008	3,540,304	107,744	6,657	7,515	121,916	123,183	265,476	3,804,513	3,252,114
2009	3,804,513	112,060	6,924	7,526	126,510	136,395	284,967	4,079,595	3,353,130
2010	4,079,595	116,511	7,199	6,287	129,997	150,373	305,205	4,364,424	3,449,268
2011	4,364,424	121,128	7,484	5,658	134,270	165,501	326,160	4,659,353	3,540,725
2012	4,659,353	125,905	7,779	6,585	140,269	182,398	347,871	4,965,095	3,627,946
2013	4,965,095	130,862	8,085	7,355	146,302	200,395	370,355	5,281,357	3,710,611
2014	5,281,357	136,012	8,404	8,137	152,553	219,584	393,587	5,607,913	3,788,505
2015	5,607,913	141,372	8,735	8,964	159,071	240,002	417,559	5,944,541	3,861,460
2016	5,944,541	146,956	9,080	9,482	165,518	261,394	442,244	6,290,909	3,929,283
2017	6,290,909	152,772	9,439	9,896	172,107	284,042	467,620	6,646,594	3,991,772
2018	6,646,594	158,845	9,814	9,859	178,518	307,596	493,655	7,011,171	4,048,776
2019	7,011,171	165,188	10,206	9,733	185,127	331,801	520,337	7,384,834	4,100,536
2020	7,384,834	171,808	10,615	9,606	192,029	356,890	547,680	7,767,653	4,147,213
2021	7,767,653	178,724	11,043	9,476	199,243	382,782	575,690	8,159,804	4,189,025
2022	8,159,804	185,940	11,489	9,339	206,768	409,227	604,393	8,561,738	4,226,315
2023	8,561,738	193,468	11,954	9,204	214,626	436,070	633,826	8,974,120	4,259,498
2024	8,974,120	201,328	12,439	9,071	222,838	463,459	664,036	9,397,535	4,288,913
2025	9,397,535	209,533	12,946	8,940	231,419	491,286	695,071	9,832,739	4,314,936
2026	9,832,739	218,096	13,475	8,811	240,382	519,646	726,985	10,280,460	4,337,895
2027	10,280,460	227,023	14,027	8,684	249,734	548,463	759,832	10,741,563	4,358,135
2028	10,741,563	236,337	14,602	8,559	259,498	577,575	793,689	11,217,175	4,376,061
2029	11,217,175	246,054	15,203	8,435	269,692	607,194	828,632	11,708,305	4,391,982
2030	11,708,305	256,161	15,827	8,313	280,301	637,310	864,735	12,216,031	4,406,191
2031	12,216,031	266,666	16,476	8,193	291,335	667,916	902,081	12,741,531	4,418,974
2032	12,741,531	277,586	17,151	8,075	302,812	699,395	940,742	13,285,690	4,430,478
2033	13,285,690	288,919	17,851	7,958	314,728	731,565	980,796	13,849,649	4,440,910
2034	13,849,649	300,682	18,578	7,843	327,103	764,374	1,022,327	14,434,705	4,450,489
2035	14,434,705	312,904	19,333	7,730	339,967	797,971	1,065,428	15,042,129	4,459,393
2036	15,042,129	325,601	20,118	7,619	353,338	832,367	1,110,195	15,673,295	4,467,797
2037	15,673,295	338,794	20,933	7,509	367,236	867,741	1,156,728	16,329,518	4,475,826
2038	16,329,518	352,507	21,780	7,400	381,687	904,535	1,205,107	17,011,777	4,483,489
2039	17,011,777	366,750	22,660	7,293	396,703	942,740	1,255,407	17,721,147	4,490,813
2040	17,721,147	381,538	23,574	7,188	412,300	982,528	1,307,702	18,458,621	4,497,789
2041	18,458,621	396,897	24,523	7,084	428,504	1,023,915	1,362,069	19,225,279	4,504,422
2042	19,225,279	412,849	25,508	6,982	445,339	1,066,873	1,418,589	20,022,334	4,510,740
2043	20,022,334	429,418	26,532	6,881	462,831	1,111,466	1,477,351	20,851,050	4,516,767
2044	20,851,050	446,629	27,595	6,782	481,006	1,157,734	1,538,451	21,712,773	4,522,533
2045	21,712,773	464,510	28,700	6,684	499,894	1,205,963	1,601,982	22,608,686	4,528,021
2046	22,608,686	483,092	29,848	6,588	519,528	1,256,217	1,668,025	23,540,022	4,533,218
2047	23,540,022	502,400	31,041	6,493	539,934	1,308,587	1,736,678	24,508,047	4,538,111
2048	24,508,047	522,466	32,281	6,399	561,146	1,363,163	1,808,027	25,514,057	4,542,685
2049	25,514,057	543,325	33,570	6,306	583,201	1,420,021	1,882,175	26,559,412	4,546,929
2050	26,559,412	565,012	34,910	6,215	606,137	1,479,246	1,959,214	27,645,517	4,550,835
2051	27,645,517	587,562	36,303	6,126	629,991	1,540,909	2,039,253	28,773,852	4,554,399
2052	28,773,852	611,011	37,752	6,037	654,800	1,605,126	2,122,402	29,945,928	4,557,614
2053	29,945,928	635,398	39,259	5,950	680,607	1,671,991	2,208,768	31,163,312	4,560,474



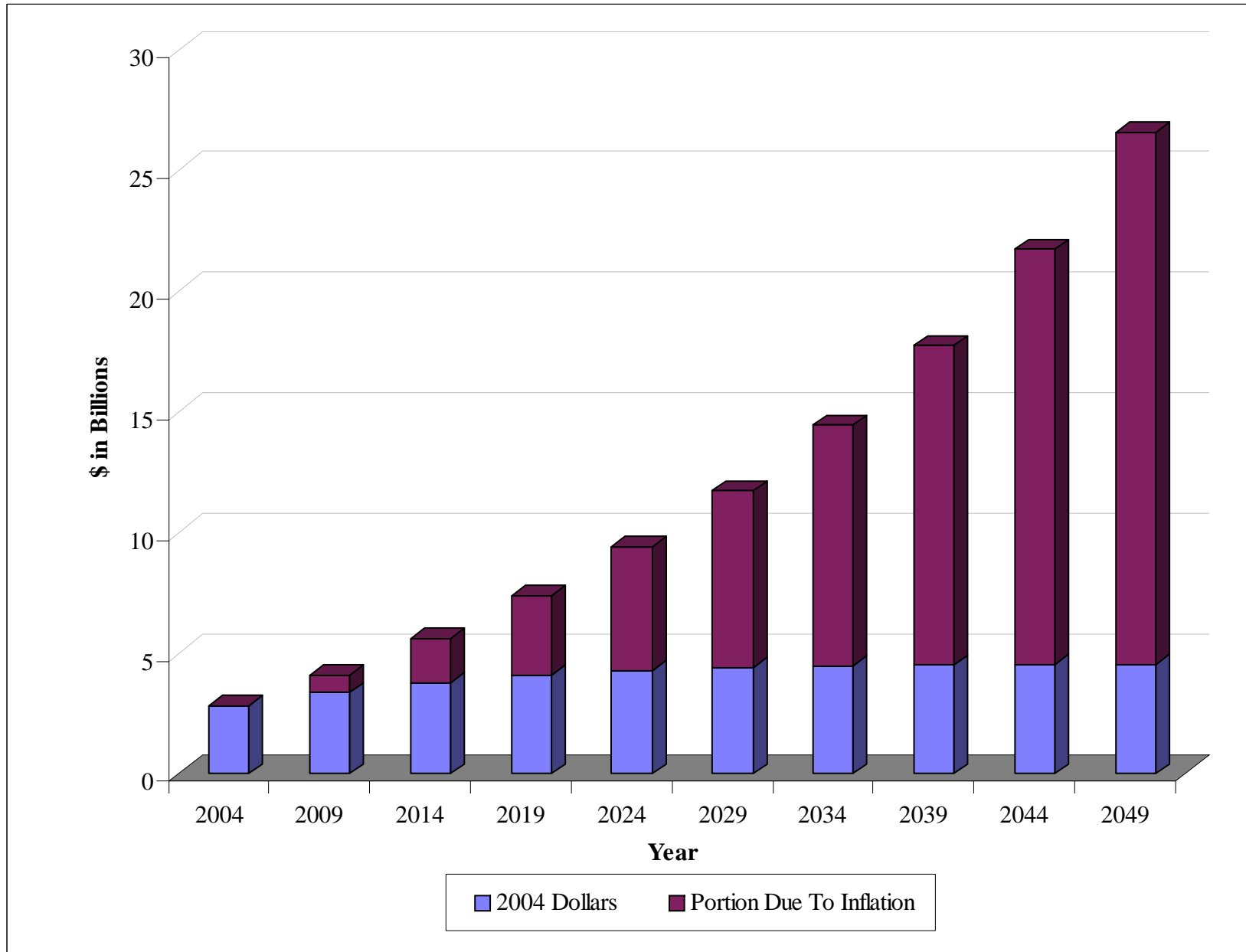








## Projected Trust Fund Assets

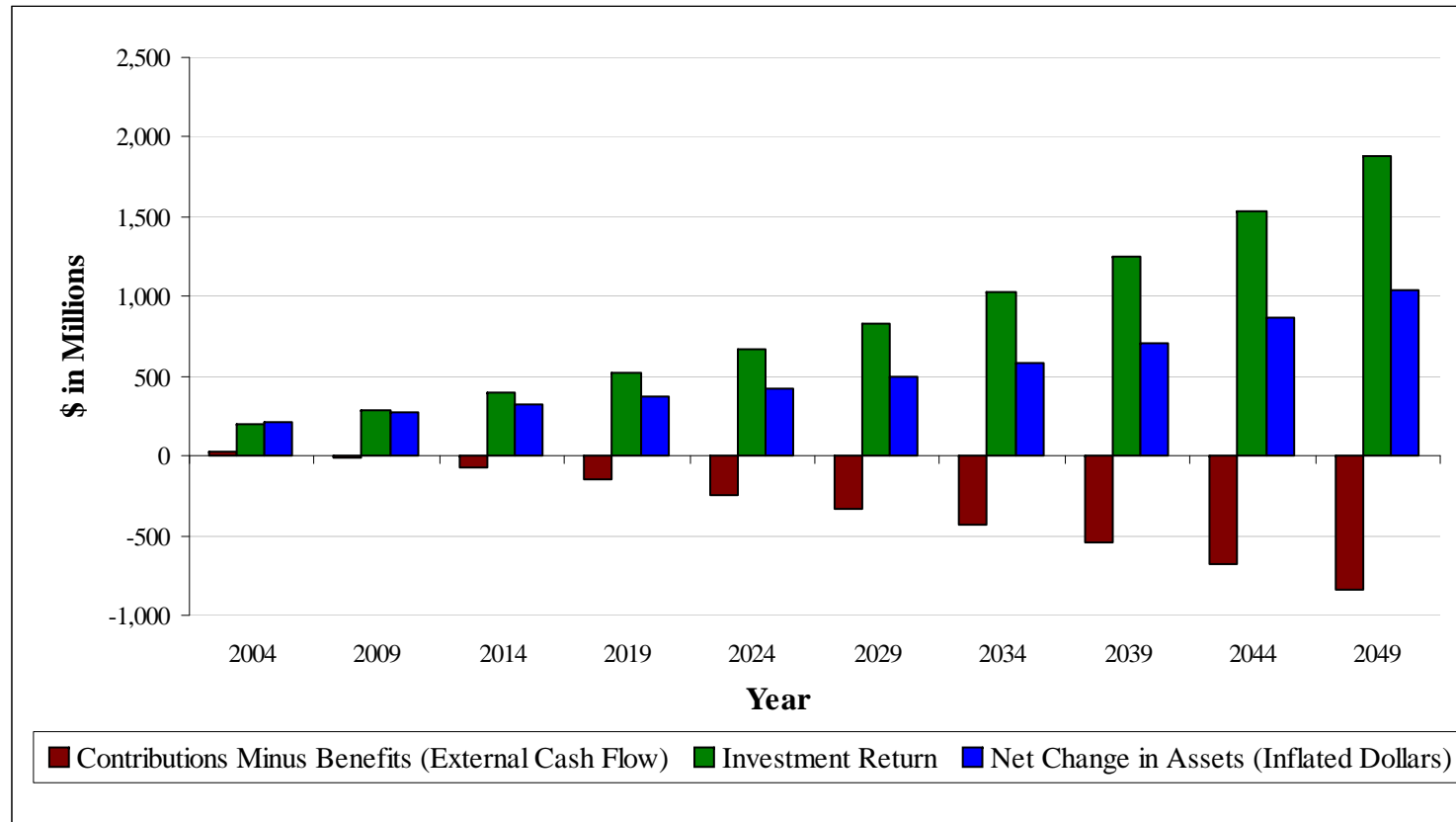


**Projected Non-Investment Cash Flow  
2004-2053 – (\$ in Thousands)**

Year Ended February 28	External Cash Flow		Net External Cash Flow		Year Ended February 28	External Cash Flow		Net External Cash Flow	
	Inflow	Outflow	\$	% of Assets		Inflow	Outflow	\$	% of Assets
2004	\$99,452	\$79,104	\$20,348	0.78 %	2029	\$269,692	\$607,194	\$(337,502)	(3.01)%
2005	105,128	89,348	15,780	0.56 %	2030	280,301	637,310	(357,009)	(3.05)%
2006	110,674	99,689	10,985	0.36 %	2031	291,335	667,916	(376,581)	(3.08)%
2007	116,192	110,876	5,316	0.16 %	2032	302,812	699,395	(396,583)	(3.11)%
2008	121,916	123,183	(1,267)	(0.04)%	2033	314,728	731,565	(416,837)	(3.14)%
2009	126,510	136,395	(9,885)	(0.26)%	2034	327,103	764,374	(437,271)	(3.16)%
2010	129,997	150,373	(20,376)	(0.50)%	2035	339,967	797,971	(458,004)	(3.17)%
2011	134,270	165,501	(31,231)	(0.72)%	2036	353,338	832,367	(479,029)	(3.18)%
2012	140,269	182,398	(42,129)	(0.90)%	2037	367,236	867,741	(500,505)	(3.19)%
2013	146,302	200,395	(54,093)	(1.09)%	2038	381,687	904,535	(522,848)	(3.20)%
2014	152,553	219,584	(67,031)	(1.27)%	2039	396,703	942,740	(546,037)	(3.21)%
2015	159,071	240,002	(80,931)	(1.44)%	2040	412,300	982,528	(570,228)	(3.22)%
2016	165,518	261,394	(95,876)	(1.61)%	2041	428,504	1,023,915	(595,411)	(3.23)%
2017	172,107	284,042	(111,935)	(1.78)%	2042	445,339	1,066,873	(621,534)	(3.23)%
2018	178,518	307,596	(129,078)	(1.94)%	2043	462,831	1,111,466	(648,635)	(3.24)%
2019	185,127	331,801	(146,674)	(2.09)%	2044	481,006	1,157,734	(676,728)	(3.25)%
2020	192,029	356,890	(164,861)	(2.23)%	2045	499,894	1,205,963	(706,069)	(3.25)%
2021	199,243	382,782	(183,539)	(2.36)%	2046	519,528	1,256,217	(736,689)	(3.26)%
2022	206,768	409,227	(202,459)	(2.48)%	2047	539,934	1,308,587	(768,653)	(3.27)%
2023	214,626	436,070	(221,444)	(2.59)%	2048	561,146	1,363,163	(802,017)	(3.27)%
2024	222,838	463,459	(240,621)	(2.68)%	2049	583,201	1,420,021	(836,820)	(3.28)%
2025	231,419	491,286	(259,867)	(2.77)%	2050	606,137	1,479,246	(873,109)	(3.29)%
2026	240,382	519,646	(279,264)	(2.84)%	2051	629,991	1,540,909	(910,918)	(3.29)%
2027	249,734	548,463	(298,729)	(2.91)%	2052	654,800	1,605,126	(950,326)	(3.30)%
2028	259,498	577,575	(318,077)	(2.96)%	2053	680,607	1,671,991	(991,384)	(3.31)%

The net external cash flow is currently in a positive position (i.e. benefits paid are less than contributions received). It is expected to decline steadily over the next 50 years. During this time, benefits paid will begin to exceed contributions received. Investment return will be needed to pay benefits (a natural result from level contribution financing). Long range, the 3.5% annual real investment return (return in excess of inflation) will be needed to pay benefits. The remainder of the investment return (the inflation portion) is needed to preserve the purchasing power of the assets.

## Projected Net Change in Assets Amounts of INFLATED Dollars



The results shown in the above chart do not show changes of constant value, because amounts of change are inflated dollar amounts.

The Net Change in Assets, the blue bars, indicate perpetual additions to trust fund assets. While this is true (and necessary) in inflated dollars, it is not true in terms of constant value. Constant value changes are shown by the chart on page C-15.

## LAGERS Cash Flows as %'s of Payroll - 2004-2053

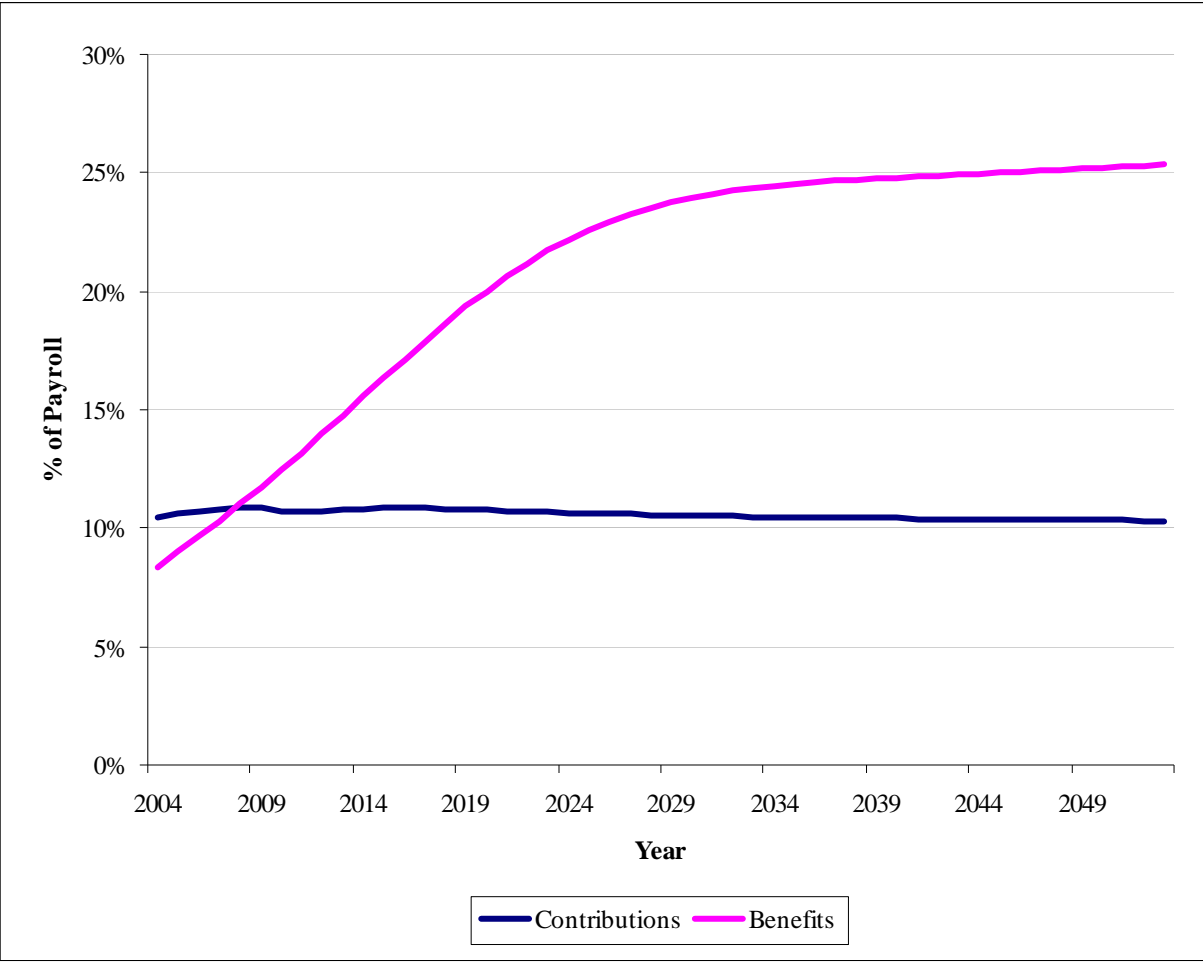
Year Ended February 28	External Cash Flow		Investment Return	Year Ended February 28	External Cash Flow		Investment Return
	Contributions Received	Benefits Paid			Contributions Received	Benefits Paid	
2004	10.44%	8.31%	20.58%	2029	10.56%	23.76%	32.43%
2005	10.60%	9.01%	21.38%	2030	10.54%	23.96%	32.51%
2006	10.72%	9.65%	22.17%	2031	10.52%	24.12%	32.58%
2007	10.81%	10.31%	22.96%	2032	10.51%	24.26%	32.64%
2008	10.90%	11.01%	23.73%	2033	10.49%	24.38%	32.69%
2009	10.87%	11.72%	24.49%	2034	10.48%	24.48%	32.74%
2010	10.74%	12.43%	25.23%	2035	10.46%	24.56%	32.79%
2011	10.67%	13.16%	25.93%	2036	10.45%	24.62%	32.84%
2012	10.73%	13.95%	26.61%	2037	10.44%	24.66%	32.88%
2013	10.77%	14.75%	27.25%	2038	10.43%	24.71%	32.92%
2014	10.80%	15.55%	27.87%	2039	10.42%	24.75%	32.96%
2015	10.84%	16.35%	28.44%	2040	10.41%	24.80%	33.01%
2016	10.85%	17.13%	28.98%	2041	10.40%	24.84%	33.05%
2017	10.85%	17.90%	29.48%	2042	10.39%	24.89%	33.09%
2018	10.82%	18.65%	29.93%	2043	10.38%	24.93%	33.13%
2019	10.79%	19.34%	30.33%	2044	10.37%	24.96%	33.17%
2020	10.76%	20.00%	30.70%	2045	10.36%	25.00%	33.21%
2021	10.74%	20.63%	31.02%	2046	10.36%	25.04%	33.25%
2022	10.71%	21.19%	31.30%	2047	10.35%	25.08%	33.29%
2023	10.68%	21.71%	31.55%	2048	10.34%	25.13%	33.33%
2024	10.66%	22.17%	31.76%	2049	10.34%	25.17%	33.36%
2025	10.64%	22.58%	31.94%	2050	10.33%	25.21%	33.39%
2026	10.61%	22.94%	32.10%	2051	10.33%	25.26%	33.42%
2027	10.59%	23.27%	32.23%	2052	10.32%	25.30%	33.45%
2028	10.57%	23.53%	32.34%	2053	10.32%	25.34%	33.48%

This schedule demonstrates two important points:

1. Benefit payout continues to grow in real dollars rising steadily throughout the projection period, and
2. Investment return has already become the largest source of revenue for the retirement system – a natural result of level contribution financing.

# Projected Pattern of Contribution Income and Benefit Payout

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**LAGERS Projected Financial Growth Rates  
2004-2053**

<b>Year Ended February 28</b>	<b>Contributions</b>	<b>Benefits</b>	<b>Assets</b>	<b>Year Ended February 28</b>	<b>Contributions</b>	<b>Benefits</b>	<b>Assets</b>
2005	5.71%	12.95%	8.08%	2030	3.93%	4.96%	4.34%
2006	5.28%	11.57%	7.87%	2031	3.94%	4.80%	4.30%
2007	4.99%	11.22%	7.67%	2032	3.94%	4.71%	4.27%
2008	4.93%	11.10%	7.46%	2033	3.94%	4.60%	4.24%
2009	3.77%	10.73%	7.23%	2034	3.93%	4.48%	4.22%
2010	2.76%	10.25%	6.98%	2035	3.93%	4.40%	4.21%
2011	3.29%	10.06%	6.76%	2036	3.93%	4.31%	4.20%
2012	4.47%	10.21%	6.56%	2037	3.93%	4.25%	4.19%
2013	4.30%	9.87%	6.37%	2038	3.94%	4.24%	4.18%
2014	4.27%	9.58%	6.18%	2039	3.93%	4.22%	4.17%
2015	4.27%	9.30%	6.00%	2040	3.93%	4.22%	4.16%
2016	4.05%	8.91%	5.83%	2041	3.93%	4.21%	4.15%
2017	3.98%	8.66%	5.65%	2042	3.93%	4.20%	4.15%
2018	3.73%	8.29%	5.49%	2043	3.93%	4.18%	4.14%
2019	3.70%	7.87%	5.33%	2044	3.93%	4.16%	4.13%
2020	3.73%	7.56%	5.18%	2045	3.93%	4.17%	4.13%
2021	3.76%	7.25%	5.05%	2046	3.93%	4.17%	4.12%
2022	3.78%	6.91%	4.93%	2047	3.93%	4.17%	4.11%
2023	3.80%	6.56%	4.82%	2048	3.93%	4.17%	4.10%
2024	3.83%	6.28%	4.72%	2049	3.93%	4.17%	4.10%
2025	3.85%	6.00%	4.63%	2050	3.93%	4.17%	4.09%
2026	3.87%	5.77%	4.55%	2051	3.94%	4.17%	4.08%
2027	3.89%	5.55%	4.49%	2052	3.94%	4.17%	4.07%
2028	3.91%	5.31%	4.43%	2053	3.94%	4.17%	4.07%
2029	3.93%	5.13%	4.38%	2054	3.94%	4.16%	4.06%

This schedule demonstrates that financial growth rates eventually stabilize at the underlying assumed rate of wage inflation (4.0% for LAGERS).

**LAGERS Projected Funded Ratios  
2004-2053 – (\$ in Thousands)**

<b>Year Ended February 28</b>	<b>Valuation Assets</b>	<b>Accrued Liabilities</b>	<b>Funded Ratio</b>	<b>Year Ended February 28</b>	<b>Valuation Assets</b>	<b>Accrued Liabilities</b>	<b>Funded Ratio</b>
2004	\$2,820,274	\$2,921,681	96.5%	2029	\$11,708,305	\$11,804,701	99.2%
2005	3,048,166	3,153,338	96.7%	2030	12,216,031	12,311,035	99.2%
2006	3,288,176	3,395,982	96.8%	2031	12,741,531	12,835,164	99.3%
2007	3,540,304	3,649,710	97.0%	2032	13,285,690	13,377,971	99.3%
2008	3,804,513	3,914,331	97.2%	2033	13,849,649	13,940,598	99.3%
2009	4,079,595	4,189,845	97.4%	2034	14,434,705	14,524,341	99.4%
2010	4,364,424	4,476,423	97.5%	2035	15,042,129	15,130,471	99.4%
2011	4,659,353	4,773,884	97.6%	2036	15,673,295	15,760,362	99.4%
2012	4,965,095	5,081,388	97.7%	2037	16,329,518	16,415,328	99.5%
2013	5,281,357	5,398,744	97.8%	2038	17,011,777	17,096,348	99.5%
2014	5,607,913	5,725,666	97.9%	2039	17,721,147	17,804,497	99.5%
2015	5,944,541	6,061,828	98.1%	2040	18,458,621	18,540,768	99.6%
2016	6,290,909	6,407,160	98.2%	2041	19,225,279	19,306,240	99.6%
2017	6,646,594	6,761,302	98.3%	2042	20,022,334	20,102,126	99.6%
2018	7,011,171	7,124,258	98.4%	2043	20,851,050	20,929,690	99.6%
2019	7,384,834	7,496,308	98.5%	2044	21,712,773	21,790,278	99.6%
2020	7,767,653	7,877,526	98.6%	2045	22,608,686	22,685,072	99.7%
2021	8,159,804	8,268,091	98.7%	2046	23,540,022	23,615,306	99.7%
2022	8,561,738	8,668,462	98.8%	2047	24,508,047	24,582,244	99.7%
2023	8,974,120	9,079,303	98.8%	2048	25,514,057	25,587,183	99.7%
2024	9,397,535	9,501,200	98.9%	2049	26,559,412	26,631,482	99.7%
2025	9,832,739	9,934,908	99.0%	2050	27,645,517	27,716,547	99.7%
2026	10,280,460	10,381,154	99.0%	2051	28,773,852	28,843,856	99.8%
2027	10,741,563	10,840,803	99.1%	2052	29,945,928	30,014,922	99.8%
2028	11,217,175	11,314,982	99.1%	2053	31,163,312	31,231,310	99.8%

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## **Section D**

### **Asset Data Used in the Valuations**



## Reported Accrued Assets Available for Benefits February 28, 2003

Statutory Funds	Reported Assets	Actuarial Value of Assets
Employers Accumulation Fund	\$1,419,824,053	\$1,601,631,161
Members Deposit Fund	66,742,613	66,742,613
Benefit Reserve Fund	825,313,577	926,249,428
Casualty Reserve Fund	8,241,503	9,249,438
<b>Total</b>	<b>\$2,320,121,746</b>	<b>\$2,603,872,640</b>

*The Actuarial Value of Assets* is based on market value, but with a 5-year smoothing of the difference between projected investment return, based on the actuarial assumption, and actual market to market returns. The actuarial value of assets is not permitted to deviate from market value by more than 20%. The derivation of the actuarial value of assets (also called the funding value of assets) is shown on pages D-3 and D-4. The funding value adjustment factor is applied to the reported cost value of each employer. The funding value adjustment factor serves two purposes:

- it incorporates the balance in the Income-Expense Fund for actuarial valuation purposes, since it is not allocated until June 30, and
- it converts the reported cost value of assets to the actuarial value of assets.

*The Employers Accumulation Fund* represents employer contributions accumulated for benefits to or on behalf of present members.

*The Members Deposit Fund* represents employee contributions accumulated for (1) monthly benefits upon future retirements and (2) refunds upon termination if monthly benefits are not payable.

*The Benefit Reserve Fund* represents employer and employee reserves held for the monthly benefits being paid to present retired lives.

*The Casualty Reserve Fund* represents employer contributions accumulated for the added liability incurred when a member becomes a disability retirement.

*The Income-Expense Fund* represents investment income received less administrative expenses paid. At the end of the system fiscal year interest is paid to the other four Funds from this Fund. The February 28, 2003 balance in the Income-Expense Fund was used for valuation purposes.

## Investment Activities

A retirement system acquires and invests assets as the result of following the financial objective of level contribution rates. The Board of Trustees of LAGERS has the responsibility for seeing that the assets are invested effectively and within the limits imposed by law. The Board retains professional money managers to assist in the investment process, and reviews their activities throughout each year. The Board retains another professional firm to provide measurements of investment performance, and their reports are also reviewed regularly.

There follows a table showing investment credits to the various Funds of the system for the last 5 years.

### Rates of Investment Return Allocated to LAGERS Fund Accounts

Year Ended June 30	Investment Credits as % of Fund Balance				Inflation Loss % (CPI)
	Casualty Reserve Fund A	Member Deposit Fund B	Benefit Reserve Fund C	Employer Accumulation Fund D	
1999	7.0%	4.0%	5.6%	15.6%	2.0%
2000	7.0	4.0	14.4	30.5	3.7
2001	7.0	4.0	3.1	5.8	3.2
2002	7.5	4.0	(15.6)	0.0	1.1
2003	7.5	4.0	(5.4)	(5.9)	2.1
5 Year Compound Average			(0.1)%	8.5%	2.4%

- A. Casualty Reserve assets are for the non-accrued service portion of disability benefits to future disabled lives. The investment percent is the rate set for actuarial purposes.
- B. Member Deposit assets are the contributions of present members. The investment percent, set by the Board, affects amounts payable to members who request a refund. The percent does not affect the monthly benefit of a retiring member.
- C. Benefit Reserve assets are for benefits to present retired lives. The investment credit is the remainder of net investment return after crediting the Casualty Reserve assets. This revised allocation of investment credits is intended to provide the resources for additional benefit increases after retirement, and is based upon a 1986 change in the LAGERS law. Beginning in 1999 the investment credit to the Benefit Reserve Fund (BRF) is limited, if the funded ratio of the BRF exceeds 140%. Beginning in 2002 the threshold was changed to 125%. In addition, for the 2002 interest credits the BRF interest credit was further reduced to permit a 0.0% interest credit to the EAF.
- D. Employer Accumulation assets are for benefits to future retired lives including the accrued service portion of disability benefits. The investment credit is the remainder of net investment return after crediting the Casualty Reserve assets, followed by a further adjustment for the investment credit to the Member Deposit assets (and beginning in 1999 for any reallocation of investment credits from the Benefit Reserve Fund). The Employer Accumulation Fund is responsible for covering liability increases resulting from inflation losses. The percentages shown include net realized capital gains on sale of investments (cost value).





## Missouri LAGERS

### Development of Funding Value of Retirement System Assets

Year Ending February 28:	1998	1999	2000	2001	2002
A. Actuarial Value Beginning of Year	\$1,352,136,335	\$1,588,516,530	\$1,811,923,839	\$2,123,617,043	\$2,389,634,186
B. Market Value End of Year	1,885,644,230	2,011,620,041	2,485,015,501	2,489,404,871	2,407,123,169
C. Market Value Beginning of Year	1,490,354,747	1,885,644,230	2,011,620,041	2,485,015,501	2,489,404,871
D. Non-Investment/Administrative Net Cash Flow	44,014,639	30,577,683	24,151,871	26,601,543	27,079,368
E. Investment Income					
E1. Market Total: B-C-D	351,274,844	95,398,128	449,243,589	(22,212,173)	(109,361,070)
E2. Assumed Rate of Return	7.00%	7.00%	7.00%	7.00%	7.50%
E3. Amount for Immediate Recognition	96,190,056	112,266,376	127,679,984	149,584,247	180,238,040
E4. Amount for Phased-In Recognition: E1-E2	255,084,788	(16,868,248)	321,563,605	(171,796,420)	(289,599,110)
F. Phased-In Recognition of Investment Income					
F1. Current Year: 0.20 x E4	51,016,958	(3,373,650)	64,312,721	(34,359,284)	(57,919,822)
F2. First Prior Year	12,234,609	51,016,958	(3,373,650)	64,312,721	(34,359,284)
F3. Second Prior Year	35,670,710	12,234,609	51,016,958	(3,373,650)	64,312,721
F4. Third Prior Year	(14,985,376)	35,670,710	12,234,609	51,016,958	(3,373,650)
F5. Fourth Prior Year	12,238,599	(14,985,377)	35,670,711	12,234,608	51,016,956
F6. Total Recognized Phase-Ins	96,175,500	80,563,250	159,861,349	89,831,353	19,676,921
G. Actuarial Value End of Year					
G1. Preliminary Actuarial Value End of Year: A+D+E3+F6	\$1,588,516,530	\$1,811,923,839	\$2,123,617,043	\$2,389,634,186	\$2,616,628,515
G2. Upper Corridor Limit: 120% x B					
G3. Lower Corridor Limit: 80% x B					
G4. Actuarial Value End of Year	\$1,588,516,530	\$1,811,923,839	\$2,123,617,043	\$2,389,634,186	\$2,616,628,515
H. Difference between Market & Actuarial Value	297,127,700	199,696,202	361,398,458	99,770,685	(209,505,346)
I. Ratio of Actuarial Value to Market Value	84.2%	90.1%	85.5%	96.0%	108.7%
J. Actuarial Value Adjustment Factor (ratio of actuarial value to EAF+MDF+CRF+BRF cost value)	1.1445	1.0993	1.1467	1.0381	1.0741
K. Recognized Rate of Return	14.00%	12.02%	15.76%	11.20%	8.32%
L. Market Rate of Return	23.23%	5.02%	22.20%	(0.89)%	(4.37)%

The asset valuation method recognizes assumed investment income (line E2) fully each year. Differences between actual and expected investment income (line E3) are phased in over a closed 5 year period. If in the future, total investment income (line E1) were always equal to assumed investment income (line E2), Funding Value and Market Value would be identical 4 years after the valuation date (line H).

Note: Asset values on this page differ slightly from asset values reported elsewhere in this report, due to a number of miscellaneous closing entries that are not included in the above amounts and rounding.



## Missouri LAGERS

### Development of Funding Value of Retirement System Assets

Year Ending February 28:	2003	2004	2005	2006	2007
A. Actuarial Value Beginning of Year	\$2,616,628,515				
B. Market Value End of Year	2,169,862,393				
C. Market Value Beginning of Year	2,407,123,169				
D. Non-Investment/Administrative Net Cash Flow	19,398,493				
E. Investment Income					
E1. Market Total: B-C-D	(256,659,269)				
E2. Assumed Rate of Return	7.50%				
E3. Amount for Immediate Recognition	196,974,582				
E4. Amount for Phased-In Recognition: E1-E2	(453,633,851)				
F. Phased-In Recognition of Investment Income					
F1. Current Year: 0.20 x E4	(90,726,770)				
F2. First Prior Year	(57,919,822)	(72,768,306)			
F3. Second Prior Year	(34,359,284)	(46,455,168)	(72,768,306)		
F4. Third Prior Year	64,312,721	(27,558,204)	(46,455,168)	(72,768,306)	
F5. Fourth Prior Year	<u>(3,373,648)</u>	<u>51,582,656</u>	<u>(27,558,204)</u>	<u>(46,455,168)</u>	<u>(72,768,305)</u>
F6. Total Recognized Phase-Ins	(122,066,803)	(95,199,022)	(146,781,678)	(119,223,474)	(72,768,305)
G. <b>Actuarial Value End of Year</b>					
G1. Preliminary Actuarial Value End of Year: A+D+E3+F6	\$2,710,934,787				
G2. Upper Corridor Limit: 120% x B	\$2,603,834,872				
G3. Lower Corridor Limit: 80% x B	\$1,735,889,914				
G4. Actuarial Value End of Year	\$2,603,834,872				
H. Difference between Market & Actuarial Value	(433,972,479)	(338,773,457)	(191,991,779)	(72,768,305)	
I. Ratio of Actuarial Value to Market Value	120.0%				
J. Actuarial Value Adjustment Factor (ratio of actuarial value to EAF+MDF+CRF+BRF cost value)	1.1223				
K. Recognized Rate of Return	(1.23)%				
L. Market Rate of Return	(10.62)%				

The asset valuation method recognizes assumed investment income (line E2) fully each year. Differences between actual and expected investment income (line E3) are phased in over a closed 5 year period. If in the future, total investment income (line E1) were always equal to assumed investment income (line E2), Funding Value and Market Value would be identical 4 years after the valuation date (line H).

Note: Asset values on this page differ slightly from asset values reported elsewhere in this report, due to a number of miscellaneous closing entries that are not included in the above amounts and rounding.

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## **Section E**

### **Benefit Provisions Considered in the Valuation**



**Missouri Local Government Employees Retirement System**  
**Brief Summary of LAGERS**  
**Benefits and Conditions Evaluated and/or Considered**  
**Through February 28, 2003**  
**(Section references are to RSMo)**

***Voluntary Retirement.*** Sections 70.645 & 70.600. A member may retire with an age & service allowance after both (i) completing 5 years of credited service, and (ii) attaining the minimum service retirement age.

The minimum service retirement age is age 60 for a general employee and age 55 for a police or fire employee. Optionally, employers may also elect to provide for unreduced benefits for employees whose combination of years of age and years of service equals 80 or more.

***Final Average Salary.*** Section 70.600. The average of a member's monthly compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) of credited service producing the highest monthly average, which period is contained within the 120 consecutive months of credited service immediately preceding retirement.

***Age & Service Allowance.*** Section 70.655. The allowance, payable monthly for life, equals a specified percent of a member's final average salary multiplied by the number of years of credited service. Each employer elects the percent applicable to its members, from the following programs:

- L-1 Benefit Program: 1.00% for life
- L-3 Benefit Program: 1.25% for life
- L-7 Benefit Program: 1.50% for life
- LT-4 Benefit Program: 1.00% for life, plus 1.00% to age 62
- LT-5 Benefit Program: 1.25% for life, plus 0.75% to age 62
- LT-8 Benefit Program: 1.50% for life, plus 0.50% to age 62
- LT-4(65) Benefit Program: 1.00% for life, plus 1.00% to age 65
- LT-5(65) Benefit Program: 1.25% for life, plus 0.75% to age 65
- LT-8(65) Benefit Program: 1.50% for life, plus 0.50% to age 65
- L-9 Benefit Program: 1.60% for life
- LT-10(65) Benefit Program: 1.60% for life, 0.40% to age 65
- L-6 Benefit Program: 2.00% for life

The only LT benefit programs available for adoption after August 1, 1994 are the LT(65) programs.

Benefit program L-11, available only to groups not covered by social security, provides for 2.50% for life.

Subsequent to joining the System the governing body can elect to change benefit programs for the employees, but not more often than once every 2 years.

**Early Allowance.** Section 70.670. A member may retire with an early allowance after both (i) completing 5 years of credited service, and (ii) attaining age 55 if a general employee or age 50 if a police or fire employee.

The early allowance amount, payable monthly for life, is computed in the same manner as an age & service allowance, based upon the service and earnings record to time of early retirement, but reduced to reflect the fact that the age when payments begin is younger than the minimum service retirement age. The amount of the reduction is 1/2% of 1% (.005) for each month the age at retirement is younger than the minimum service retirement age.

**Deferred Allowance.** Section 70.675. If a member leaves LAGERS-covered employment (i) before attaining the early retirement age, and (ii) after completing 5 years of credited service, the member becomes eligible for a deferred allowance; provided the former member lives to the minimum service retirement age and does not withdraw the accumulated contributions.

The deferred allowance amount, payable monthly for life from the minimum service retirement age, is computed in the same manner as an age & service allowance, based upon the service and earnings record to time of leaving LAGERS coverage.

Deferred allowances are also payable any time after reaching the early retirement age, with the reduction for early retirement noted on the previous page.

**Non-Duty Disability Allowance.** Section 70.680. A member with 5 or more years of credited service who becomes totally and permanently disabled from other than duty-connected causes become eligible to receive a non-duty disability allowance computed in the same manner as an age & service allowance, based upon the service & earnings record to time of disability.

**Duty Disability Allowance.** Section 70.680. A member who becomes totally and permanently disabled from duty-connected causes becomes eligible to receive a duty disability allowance computed in the same manner as an age & service allowance, based upon the earnings record to time of disability but based upon the years of credited service the member would have completed had the member continued in LAGERS-covered employment to age 60.

**Death-in-Service.** Section 70.661. Upon the death of a member who had completed 5 years of credited service, the eligible surviving dependents receive the following benefits:

(a) The surviving spouse receives an allowance equal to the Option A allowance (joint and 75% survivor benefit) computed based upon the deceased members' service & earnings record to time of death.

(b) When no spouse benefit is payable, the dependent children under age 18 (age 23 if they are full-time students) each receive an equal share of 60% of an age & service allowance computed based upon the deceased member's service & earnings record to time of death.

(c) If the death is determined to be duty related, the 5 year service requirement is waived and the benefit is based on years of credited service the member would have completed had the member continued in LAGERS-covered employment to age 60.

***Benefit Changes After Retirement.*** Section 70.655. For retirements effective after September 28, 1975, there is an annual redetermination of monthly benefit amount, beginning the October first following 12 months of retirement. As of each October first the amount of each eligible benefit is redetermined as follows:

(a) Subject to the maximum in (b), the redetermined amount is the amount otherwise payable multiplied by: 100% plus up to 4%, as determined by the LAGERS Board of Trustees, for each full year of retirement.

(b) The redetermined amount may not exceed the amount otherwise payable multiplied by the ratio of the Consumer Price Index for the immediately preceding month of June to the Consumer Price Index for the month of June immediately preceding retirement.

***Member Contributions.*** Sections 70.690 & 70.700. Each member contributes 4% of compensation beginning after completion of sufficient employment of 6 months of credited service.

If a member leaves LAGERS-covered employment before an allowance is payable, the accumulated contributions are refunded to the member. If the member dies, his accumulated contributions are refunded to a designated beneficiary.

The law governing LAGERS also has a provision for the adoption of a non-contributory plan in which the full cost of LAGERS participation is paid by the employer. Adoption of the non-contributory provisions may be done at the time of membership or a later date; however, a change from contributory to non-contributory or vice-versa may not be made more frequently than every 5 years. Under the non-contributory provisions there is no individual account maintained for each employee and no refund of contributions if an employee terminates before being eligible for a benefit.

***Employer Contributions.*** Section 70.730. Each employer contributes the remainder amounts necessary to finance the employees' participation in LAGERS. Contributions to LAGERS are determined based upon level-percent-of-payroll principles, so that contribution rates do not have to increase over decades of time.



## Benefit Programs in Effect as of February 28, 2003

*Benefit programs now available* to each employer are:

L-1, since 1967	LT-8, since 1988
L-3, since 1975	LT-8(65), since 1994
LT-4, since 1977	L-9, since 1995
LT-4(65), since 1994	LT-10(65) since 1995
LT-5, since 1977	L-11, since 2000
LT-5(65), since 1994	Non-Contributory, since 1983
L-6, since 1987	3 Year Final Average Salary (FAS), since 1984
L-7, since 1988	Rule of 80, since 1988

The only LT benefit programs that can be adopted after August 1, 1994 are the LT(65) programs.

Please see pages E-1 through E-3 for a summary of LAGERS provisions.

When the 2003 actuarial valuations were made, the Benefit Programs evaluated were as follows:

FAS	Groups	Benefit Programs																				Totals
		Non-Contributory										Contributory										
		L-1	L-3	LT-4	LT-5	L-6	L-7	LT-8	L-9	LT-10	L-11	L-1	L-3	LT-4	LT-5	L-6	L-7	LT-8	L-9	LT-10	L-11	
5 yr.	General	42	32	1	9	9	36	11	5	2		48	26			1	11	4	7			244
	Police	23	20	1	5	7	24	5	2			24	11			1	7	3	3			136
	Fire	<u>3</u>	<u>3</u>	---	<u>3</u>	<u>3</u>	<u>3</u>	<u>3</u>	<u>1</u>	---		<u>1</u>	<u>4</u>			---	<u>1</u>	---	---			<u>25</u>
	Totals	68	55	2	17	19	63	19	8	2		73	41			2	19	7	10			405
3 yr.	General	14	14		5	20	63	24	12	11	1	15	19		2	14	31	3	5	3		256
	Police	8	6		5	10	30	17	10	7		4	6		1	9	12	1	4	1		131
	Fire	<u>2</u>	<u>2</u>		<u>3</u>	<u>3</u>	<u>7</u>	<u>10</u>	<u>1</u>	<u>4</u>	---	---	<u>1</u>		<u>2</u>	---	<u>3</u>	---	<u>1</u>	---		<u>39</u>
	Totals	24	22		13	33	100	51	23	22	1	19	26		5	23	46	4	10	4		426

*The above LT columns include both the LT(62) and LT(65) benefit programs. The table includes 28 groups with no active members.*

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## Section F

### Participant Data

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## Participating Employers Evaluated February 28, 2003

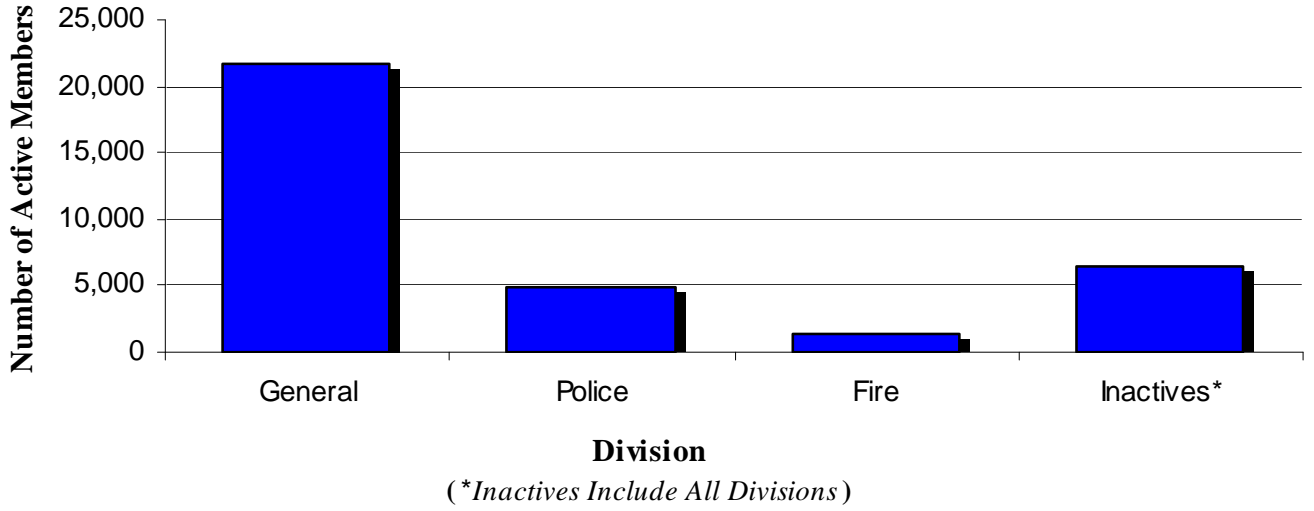
Type of Group	Number of Participating Employers
General Only	223
Fire Only	4
General and Police	203
General and Fire	6
General and Police and Fire	50
<b>Total</b>	<b>486</b>

## Active and Inactive Members in Valuations February 28, 2003

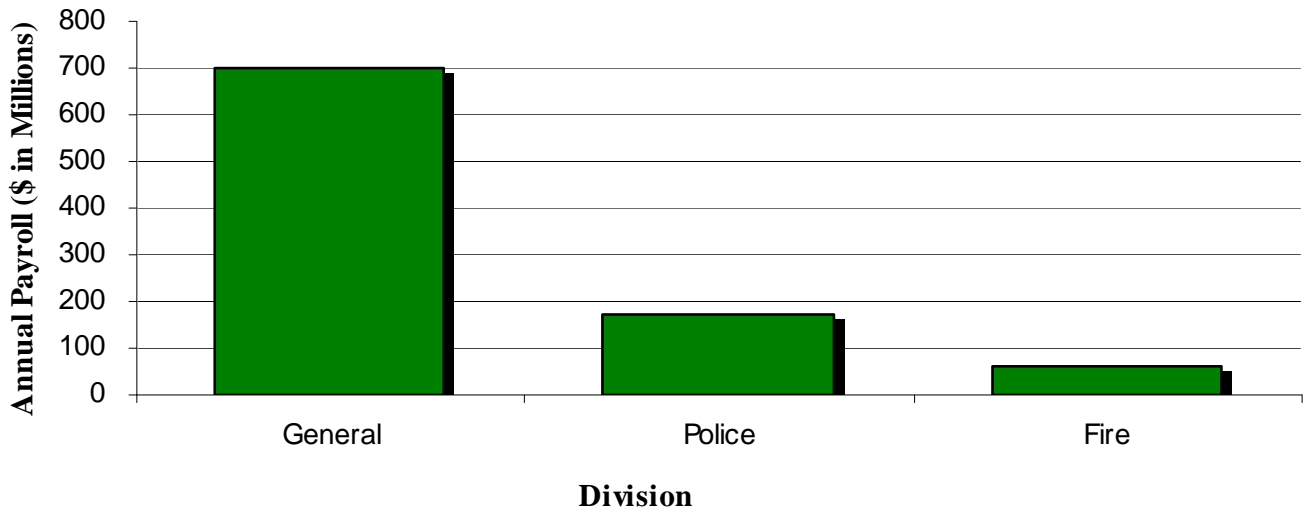
Classification	Number of		Annual Payroll
	Active Members	Valuation Groups*	
Active members			
General	21,599	490	\$700,844,308
Police	4,841	253	173,416,650
Fire	<u>1,369</u>	<u>60</u>	<u>58,692,721</u>
Total Actives	27,809	803	\$932,953,679
Inactive Members	<u>6,541</u>		
Total members	34,350		

\* Each Police group and each Fire group is evaluated separately. Each general group is evaluated separately, but also may be broken into sub-groups for separate financial experience if the employer desires separate employer rates for internal accounting purposes.

**Missouri LAGERS  
Active Members by Division**

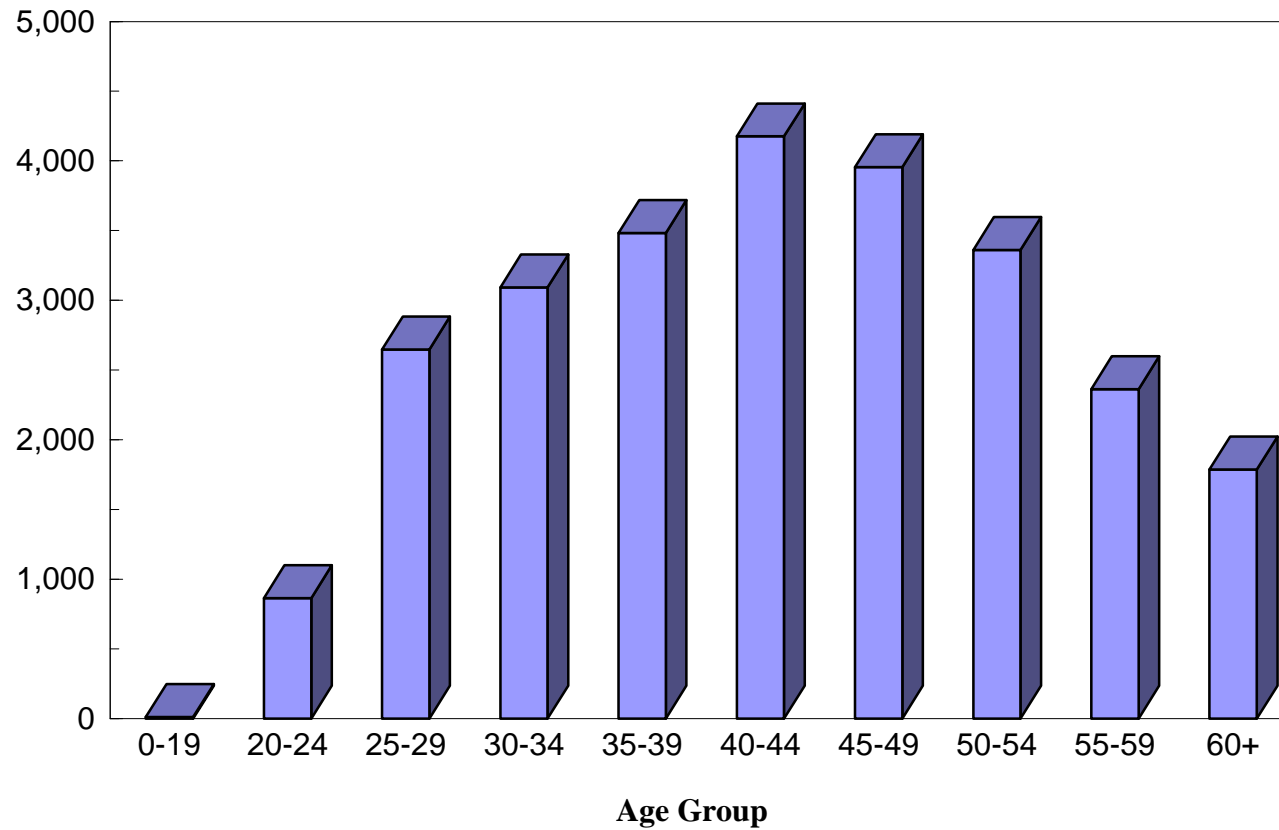


**Missouri LAGERS  
Annual Payroll by Division**

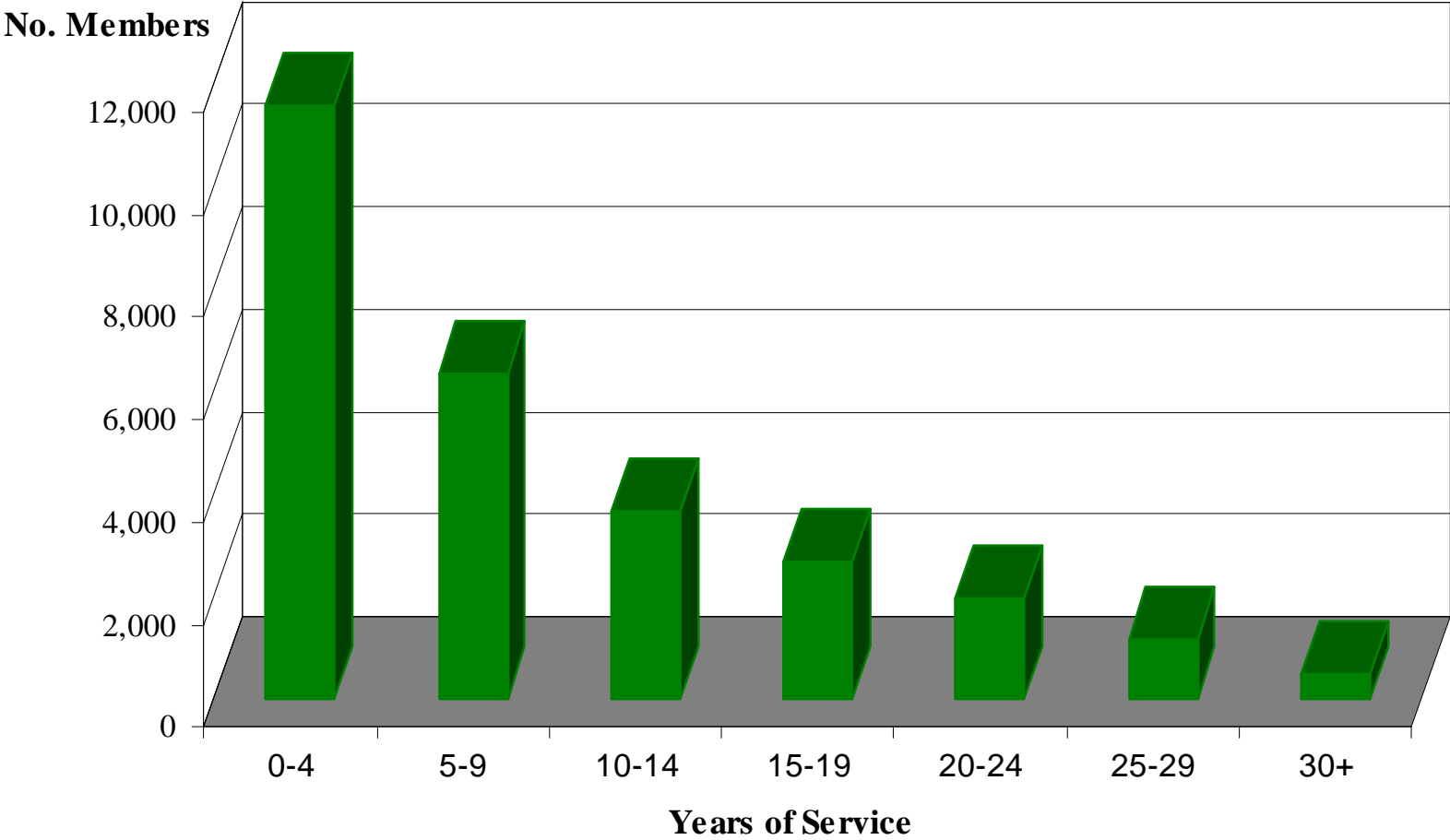


**Missouri LAGERS  
Distribution of Active Members  
By Age  
February 28, 2003**

**No. Members**



**Missouri LAGERS  
Distribution of Active Members  
By Service  
February 28, 2003**







**GENERAL MEMBERS**  
**MEN Active Members February 28, 2003**  
**By Attained Age and Years of Service**

Attained 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	4							4	\$ 58,139
20-24	436	11						447	10,632,355
25-29	676	153	0					829	23,665,727
30-34	755	405	92	3				1,255	41,359,243
35-39	587	392	266	125	5			1,375	47,832,497
40-44	627	459	302	292	209	14		1,903	69,198,639
45-49	556	404	301	274	309	171	10	2,025	76,942,978
50-54	429	327	238	236	268	236	77	1,811	72,510,860
55-59	336	261	196	175	191	127	115	1,401	53,624,295
60	54	38	28	31	29	14	20	214	7,844,230
61	46	36	34	27	16	16	18	193	6,691,252
62	44	28	17	20	22	13	16	160	5,662,061
63	27	20	18	14	11	6	10	106	3,843,862
64	23	23	21	11	7	2	9	96	2,879,553
65	21	20	12	7	8	4	3	75	2,869,845
66	9	18	12	8	8	3	3	61	2,019,460
67	5	11	4	4	2	2	3	31	1,106,111
68	6	9	3	1	4	1	1	25	979,277
69	9	5	8	4		2		28	964,014
70 & Over	23	24	18	18	5	5	6	99	3,171,843
<b>Totals</b>	<b>4,673</b>	<b>2,644</b>	<b>1,570</b>	<b>1,250</b>	<b>1,094</b>	<b>616</b>	<b>291</b>	<b>12,138</b>	<b>\$433,856,241</b>

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

Age: 44.7 years  
Service: 10.2 years  
Annual Pay: \$35,744

**GENERAL MEMBERS**  
**WOMEN Active Members February 28, 2003**  
**By Attained Age and Years of Service**

Attained 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	3							3	\$ 49,610
20-24	307	1						308	6,436,568
25-29	595	117	2					714	18,201,359
30-34	653	284	75	2				1,014	28,116,532
35-39	560	286	158	68	4			1,076	30,203,751
40-44	652	377	190	137	78	6		1,440	41,466,475
45-49	590	400	236	149	117	59	3	1,554	45,589,843
50-54	455	366	254	154	97	77	22	1,425	42,805,480
55-59	301	224	197	138	103	68	28	1,059	30,621,672
60	40	50	29	36	18	10	10	193	5,307,469
61	29	39	21	23	10	12	10	144	4,020,757
62	28	36	19	19	13	6	5	126	3,471,067
63	26	31	11	7	10	2	3	90	2,402,409
64	11	9	5	15	11	5	2	58	1,647,055
65	17	15	8	4	5	6	6	61	1,708,143
66	10	7	8	3	1	4	2	35	790,855
67	6	11	8	7	3	0	7	42	1,320,185
68	3	8	9	7	5	1	3	36	1,034,086
69	3	2	5	1	2	1	2	16	418,021
70 & Over	14	15	11	9	6	5	7	67	1,376,730
<b>Totals</b>	<b>4,303</b>	<b>2,278</b>	<b>1,246</b>	<b>779</b>	<b>483</b>	<b>262</b>	<b>110</b>	<b>9,461</b>	<b>\$266,988,067</b>

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

Age: 44.6 years  
Service: 8.2 years  
Annual Pay: \$28,220



**POLICE Active Members February 28, 2003**  
**By Attained Age and Years of Service**

Attained 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
20-24	198							198	\$ 5,226,295
25-29	694	89						783	23,613,068
30-34	595	421	54					1,070	36,159,625
35-39	292	230	170	45				737	26,473,114
40-44	132	112	123	153	27			547	21,380,431
45-49	103	114	99	115	109	37		577	23,568,705
50-54	72	61	70	81	67	83	15	449	19,198,216
55-59	73	54	55	42	30	37	22	313	12,084,597
60	10	11	7	12	3	1	2	46	1,574,753
61	4	8	3	4	2	1	2	24	932,691
62	3	4	4	5	4	3	1	24	849,078
63	1	6	2	4	1	4	2	20	776,232
64	2	6	7	1	1		1	18	585,503
65	2	2	4	1	3		1	13	414,511
66		1						1	25,479
67	1	1	2					4	76,007
68	1	3		1	1			6	183,608
69			2	2				4	110,879
70 & Over	2	1	2	2				7	183,858
<b>Totals</b>	<b>2,185</b>	<b>1,124</b>	<b>604</b>	<b>468</b>	<b>248</b>	<b>166</b>	<b>46</b>	<b>4,841</b>	<b>\$173,416,650</b>

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

Age: 39.0 years  
Service: 8.3 years  
Annual Pay: \$35,822

**FIRE Active Members February 28, 2003  
By Attained Age and Years of Service**

Attained 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
20-24	23							23	\$ 660,499
25-29	121	35						156	5,311,182
30-34	140	100	26					266	10,144,654
35-39	56	77	79	20				232	9,619,859
40-44	22	30	55	70	26			203	9,281,545
45-49	15	20	33	56	73	26	2	225	10,657,063
50-54	7	9	19	19	30	68	14	166	8,164,997
55-59	5	3	3	5	12	26	23	77	3,848,385
60			1	1	2		4	8	429,945
61							1	1	51,037
62			1		2		2	5	192,539
63	1		1	1		1	1	5	264,150
64					1			1	30,698
69		1						1	36,168
70 & Over									
<b>Totals</b>	<b>390</b>	<b>275</b>	<b>218</b>	<b>172</b>	<b>146</b>	<b>121</b>	<b>47</b>	<b>1,369</b>	<b>\$58,692,721</b>

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

Age: 40.4 years  
Service: 12.2 years  
Annual Pay: \$42,873

## Participating Employers and Members in Valuations 10 Year Comparative Statement

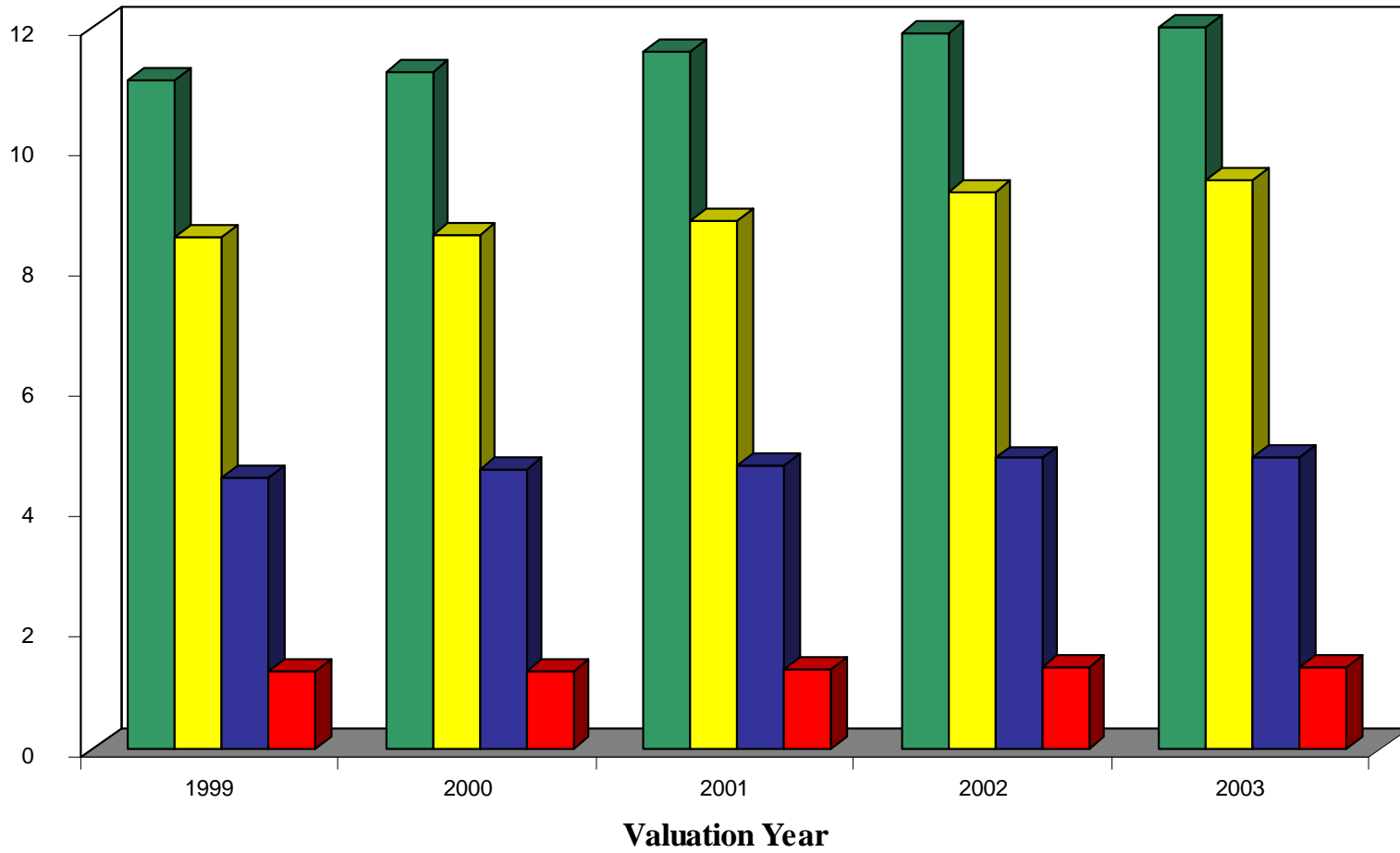
Valuation Date	Number of		Active Members				Inflation Increase % (C.P.I.)
	Participating Employers	Valuation Groups	Number	Annual Payroll	Average Pay	% Increase	
2-28-94	371	645	21,339	\$505,208,639	\$23,675	3.0%	2.5%
2-28-95	376	655	21,984	534,173,422	24,298	2.6	2.9
2-29-96	384	665	23,000	581,120,176	25,266	4.0	2.7
2-28-97	398	686	23,924	627,184,823	26,216	3.8	3.0
2-28-98	415	711	24,767	667,085,761	26,934	2.7	1.4
2-28-99	432	731	25,391	716,154,828	28,205	4.7	1.6
2-29-00	443	747	25,747	757,753,142	29,431	4.3	3.2
2-28-01	463	777	26,423	808,959,105	30,616	4.0	3.5
2-28-02	477	791	27,328	875,061,292	32,021	4.6	1.1
2-28-03	486	803	27,809	932,953,679	33,549	4.8	3.0
			10 Year Compound Average			3.8	2.5

**Active Members in Valuations - Group Averages**  
**(averages not used in valuations; computed and shown because of general information value)**

Employee Type	Valuation at 2-28	No. of Members	----- Group Averages -----		Annual Payroll Average	Change	Inflation Increase % (C.P.I)
			Completed Years Age	Service			
General - Men	1994	9,882	43.2	10.2	25,542	+3.7	+2.5
	1995	10,068	43.2	10.1	26,190	+2.5	+2.9
	1996	10,398	43.4	10.1	27,310	+4.3	+2.7
	1997	10,694	43.5	10.1	28,327	+3.7	+3.0
	1998	10,955	43.8	10.2	28,943	+2.2	+1.4
	1999	11,109	44.0	10.3	30,325	+4.8	+1.6
	2000	11,250	44.2	10.2	31,583	+4.1	+3.2
	2001	11,576	44.4	10.2	32,769	+3.8	+3.5
	2002	11,895	44.5	10.2	34,171	+4.3	+1.1
	2003	12,138	44.7	10.2	35,744	+4.6	+2.1
General - Women	1994	6,632	43.1	8.0	19,477	+3.5	+2.5
	1995	6,935	43.2	7.9	20,156	+3.5	+2.9
	1996	7,413	43.0	7.8	20,984	+4.1	+2.7
	1997	7,834	43.1	7.8	21,730	+3.6	+3.0
	1998	8,227	43.2	7.8	22,412	+3.1	+1.4
	1999	8,491	43.3	7.9	23,406	+4.4	+1.6
	2000	8,543	43.7	8.0	24,551	+4.9	+3.2
	2001	8,793	44.1	8.0	25,716	+4.7	+3.5
	2002	9,260	44.3	8.0	26,924	+4.7	+1.1
	2003	9,461	44.6	8.2	28,220	+4.8	+2.1
Police	1994	3,714	39.0	7.6	24,425	+1.8	+2.5
	1995	3,831	38.9	7.6	25,049	+2.6	+2.9
	1996	4,049	38.8	7.6	26,006	+3.8	+2.7
	1997	4,173	38.7	7.8	27,318	+5.0	+3.0
	1998	4,330	38.7	7.8	28,545	+4.5	+1.4
	1999	4,492	38.6	7.9	29,926	+4.8	+1.6
	2000	4,654	38.8	8.0	30,996	+3.6	+3.2
	2001	4,720	38.8	8.0	32,307	+4.2	+3.5
	2002	4,831	38.9	8.1	34,034	+5.3	+1.1
	2003	4,841	39.0	8.3	35,822	+5.3	+2.1
Fire	1994	1,111	39.1	11.4	29,629	+0.5	+2.5
	1995	1,150	39.2	11.4	30,215	+2.0	+2.9
	1996	1,140	39.6	11.8	31,840	+5.4	+2.7
	1997	1,223	39.5	11.7	32,729	+2.8	+3.0
	1998	1,255	39.4	11.7	33,491	+2.3	+1.4
	1999	1,299	39.6	11.7	35,490	+6.0	+1.6
	2000	1,300	39.6	11.8	37,275	+5.0	+3.2
	2001	1,334	39.8	11.9	38,242	+2.6	+3.5
	2002	1,342	40.1	12.1	40,876	+6.9	+1.1
	2003	1,369	40.4	12.2	42,873	+4.9	+2.1

# Missouri LAGERS Active Members 1999 - 2003

Members (Thousands)



■ General - Men ■ General - Women ■ Police ■ Fire

## Retirants and Beneficiaries Added to and Removed from Rolls 10 Year Comparative Statement

Year Ended	Added to Rolls		Removed from Rolls		Rolls End of Year		% Incr. in Annual Allowances	Retired Lives in Relation to Active Members	
	No.	Annual Allowances*	No.	Annual Allowances	No.	Annual Allowances		Active Members Per Benefit Recipient	Allowances as Percents of Active Payroll
2-28-94	544	\$3,500,340	293	\$ 930,039	6,204	\$24,720,941	11.6%	3.4	4.9%
2-28-95	712	5,075,916	282	1,197,176	6,634	28,599,681	15.7	3.3	5.4
2-29-96	653	4,764,570	246	1,022,382	7,041	32,341,869	13.1	3.3	5.6
2-28-97	695	5,656,604	275	1,239,056	7,461	36,759,417	13.7	3.2	5.9
2-28-98	741	6,251,387	315	1,411,336	7,887	41,599,468	13.2	3.1	6.2
2-28-99	748	6,620,521	339	1,854,143	8,296	46,365,846	11.5	3.1	6.5
2-29-00	769	7,394,519	371	1,839,075	8,694	51,921,290	12.0	3.0	6.9
2-28-01	816	8,094,550	330	2,026,823	9,180	57,989,017	11.7	2.9	7.2
2-28-02	806	9,203,832	385	2,191,355	9,601	65,001,494	12.1	2.9	7.4
2-28-03	870	9,313,332	364	2,545,321	10,107	71,769,505	10.4	2.8	7.7

\* Includes post-retirement adjustments.

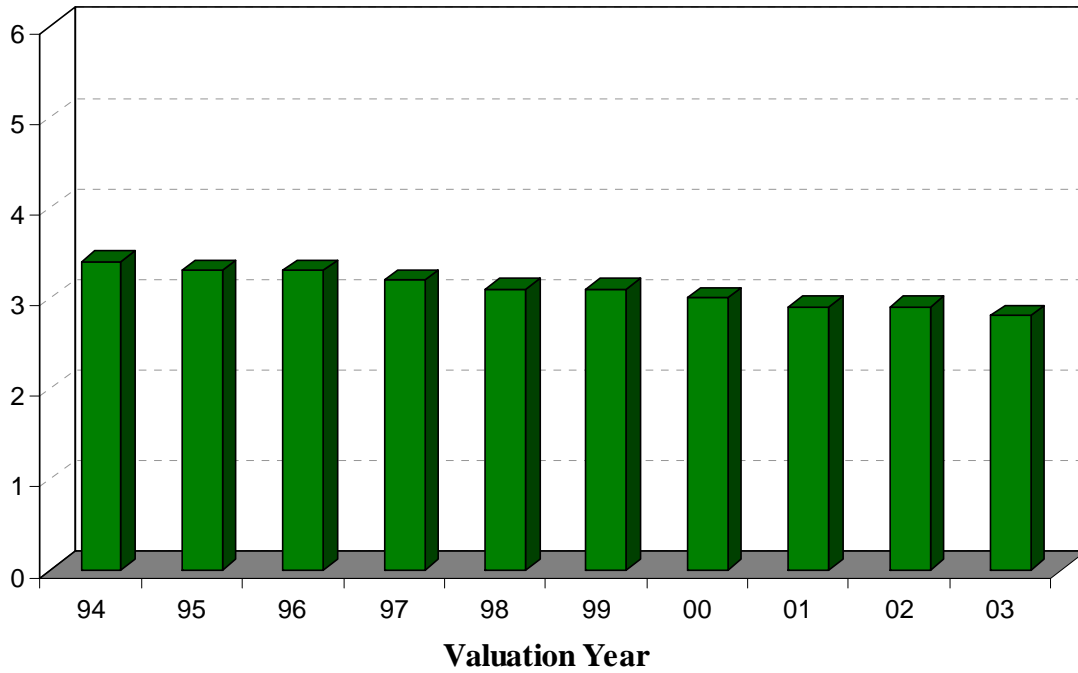




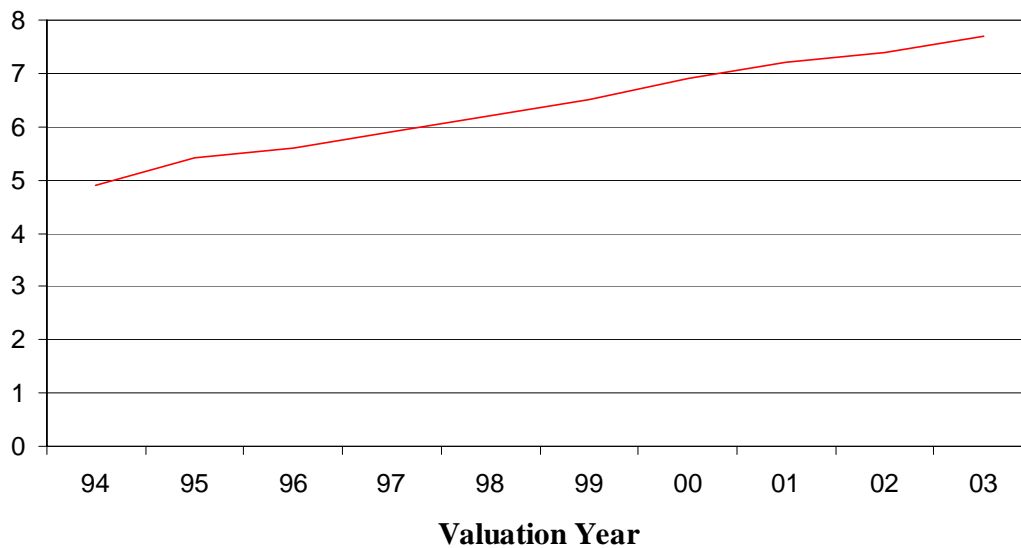


## Retirants and Beneficiaries Comparative Data

### Active Members Per Benefit Recipient



### Allowances as % of Active Pay



**Retirants and Beneficiaries on Rolls February 28, 2003  
By Disbursing Fund and Type of Benefit Being Paid**

<b>Type of Benefit</b>	<b>Number</b>	<b>Annual Allowances</b>
Service Early & Deferred		
Life Option	4,815	\$33,326,331
Option A	1,354	11,203,422
Option B	894	10,157,379
Option C	810	5,259,529
Beneficiary Receiving	<u>807</u>	<u>3,243,882</u>
Totals	8,680	63,190,543
Duty Disability		
Life Option	210	2,310,087
Option A	86	801,182
Option B	31	306,563
Option C	<u>20</u>	<u>185,312</u>
Totals	347	3,603,144
Non-Duty Disability		
Life Option	206	1,201,286
Option A	85	490,670
Option B	40	303,930
Option C	<u>44</u>	<u>281,759</u>
Totals	375	2,277,645
Beneficiary receiving	<u>149</u>	<u>607,148</u>
Total Disability	871	6,487,937
Death-In-Service		
Spouse Receiving	523	2,033,160
Children Receiving	<u>33</u>	<u>57,865</u>
Totals	556	2,091,025
<b>Totals</b>	<b>10,107</b>	<b>\$71,769,505</b>

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## **Section G**

### **Computed Employer Contributions: Summary of Computed Employer Contribution Rates**

**Computed Employer Contributions: Non-Contributory Plans  
5 Year Final Average Salary  
By Valuation Groups February 28, 2003**

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							Totals
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	
<b>Benefit Program L-1</b>									
General:	1-9	6	2	7	4	4	2	1	26
	10-49	6	2	4		3			15
	50 & up	—	—	1	—	—	—	—	1
	Totals	12	4	12	4	7	2	1	42
Police:	1-9	4	2	4	2	2		3	17
	10-49	3	2			1			6
	50 & up	—	—	—	—	—		—	—
	Totals	7	4	4	2	3		3	23
Fire:	1-9			1					1
	10-49	2							2
	50 & up	—		—					—
	Totals	2		1					3
Totals:		21	8	17	6	10	2	4	68
<b>Benefit Program L-3</b>									
General:	1-9	5	1	3	1	1	2		13
	10-49	5		2	4	1			12
	50 & up	5	2	—	—	—	—		7
	Totals	15	3	5	5	2	2		32
Police:	1-9	5	2		1			1	9
	10-49	8			1	2			11
	50 & up	—	—		—	—		—	—
	Totals	13	2		2	2		1	20
Fire:	1-9		1						1
	10-49	2							2
	50 & up	—	—						—
	Totals	2	1						3
Totals		30	6	5	7	4	2	1	55

\* Dollar contribution rates for groups presently without active members.

**Computed Employer Contributions: Non-Contributory Plans**  
**5 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program LT-4 (62 or 65)</b>									
General:	1-9					1			1
	10-49					—			—
	50 & up					—			—
	Totals					1			1
Police:	1-9				1				1
	10-49								
	50 & up				—				—
	Totals				1				1
Fire:	1-9								
	10-49								
	50 & up								
	Totals								0
Totals:				1	1				2
<b>Benefit Program LT-5 (62 or 65)</b>									
General:	1-9		1	1	1				3
	10-49			2	1				3
	50 & up		$\frac{1}{2}$	$\frac{1}{4}$	—	$\frac{1}{1}$			$\frac{3}{9}$
	Totals		2	4	2	1			9
Police:	1-9		1		1				2
	10-49			3					3
	50 & up		—	—	—				—
	Totals		1	3	1				5
Fire:	1-9					1			1
	10-49				1		1		2
	50 & up				—	—	—		—
	Totals				1	1	1		3
Totals		3	7	4	2	1		17	

\* Dollar contribution rates for groups presently without active members.  
The above totals include both the LT(62) and LT(65) benefit programs. Of the 2 LT-4 benefit programs, 0 are LT-4(62) and 2 are LT-4(65). Of the 17 LT-5 benefit programs, 1 is LT-5(62) and 16 are LT-5(65).

**Computed Employer Contributions: Non-Contributory Plans**  
**5 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program L-6</b>									
General:	1-9	1					2		3
	10-49						2		2
	50 & up	—				$\frac{2}{2}$	$\frac{2}{2}$		$\frac{4}{4}$
	Totals	1				2	6		9
Police:	1-9						1		1
	10-49	1			1		2		4
	50 & up	—			—	$\frac{1}{1}$	$\frac{1}{1}$		$\frac{2}{2}$
	Totals	1			1	1	4		7
Fire:	1-9							1	1
	10-49								
	50 & up					$\frac{1}{1}$	$\frac{1}{1}$	—	$\frac{2}{2}$
	Totals					1	1	1	3
Totals:		2			1	4	11	1	19
<b>Benefit Program L-7</b>									
General:	1-9	2		2		2	3		9
	10-49	3	2	3	2	3	5		18
	50 & up	$\frac{1}{1}$	$\frac{1}{1}$	$\frac{4}{4}$	—	$\frac{3}{3}$	—		$\frac{9}{9}$
	Totals	6	3	9	2	8	8		36
Police:	1-9	4		2	1	2	2		11
	10-49	5	1	3	1	2	1		13
	50 & up	—	—	—	—	—	—		—
	Totals	9	1	5	2	4	3		24
Fire:	1-9								
	10-49	2			1				3
	50 & up	—			—				—
	Totals	2			1				3
Totals		17	4	14	5	12	11		63

*\* Dollar contribution rates for groups presently without active members.*

**Computed Employer Contributions: Non-Contributory Plans**  
**5 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program LT-8 (62 or 65)</b>									
General:	1-9		1			1	1		3
	10-49					1	1		2
	50 & up		<u>2</u>	<u>2</u>	<u>1</u>	—	<u>1</u>		<u>6</u>
	Totals		3	2	1	2	3		11
Police:	1-9						1		1
	10-49	1		2					3
	50 & up	—		—	<u>1</u>		—		<u>1</u>
	Totals	1		2	1		1		5
Fire:	1-9								
	10-49		1			1	1		3
	50 & up		—			—	—		—
	Totals		1			1	1		3
Totals:		1	4	4	2	3	5		19
<b>Benefit Program L-9</b>									
General:	1-9	2							2
	10-49					1	2		3
	50 & up	—				—	—		—
	Totals	2				1	2		5
Police:	1-9	1							1
	10-49				1				1
	50 & up	—			—				—
	Totals	1			1				2
Fire:	1-9								
	10-49					1			1
	50 & up					—			—
	Totals					1			1
Totals		3			1	2	2		8

\* Dollar contribution rates for groups presently without active members.

The above totals include both the LT(62) and LT(65) benefit programs. Of the 19 LT-8 benefit programs, 5 are LT-8(62) and 14 are LT-8(65).

**Computed Employer Contributions: Non-Contributory Plans**  
**5 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Concluded)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program LT-10(65)</b>									
General:	1-9	1					1		2
	10-49								
	50 & up	---					---		---
	Totals	1					1		2
Police:	1-9								
	10-49								
	50 & up								---
	Totals								0
Fire:	1-9								
	10-49								
	50 & up								---
	Totals								0
Totals:		1					1		2
<b>Benefit Program L-11</b>									
General:	1-9								
	10-49								
	50 & up								---
	Totals								0
Police:	1-9								
	10-49								
	50 & up								---
	Totals								0
Fire:	1-9								
	10-49								
	50 & up								---
	Totals								0
Totals:									0

*\*Dollar contribution rates for groups presently without active members.*



**Computed Employer Contributions: Contributory Plans  
5 Year Final Average Salary  
By Valuation Groups February 28, 2003**

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program L-1</b>									
General:	1-9	12	7	4	2	1	2	2	30
	10-49	14	3						17
	50 & up	<u>1</u>	—	—	—	—	—	—	<u>1</u>
	Totals	27	10	4	2	1	2	2	48
Police:	1-9	12		2	2	1		2	19
	10-49	4	1						5
	50 & up	—	—	—	—	—	—	—	—
	Totals	16	1	2	2	1		2	24
Fire:	1-9	1							1
	10-49								
	50 & up	—							—
	Totals	1							1
Totals:		44	11	6	4	2	2	4	73
<b>Benefit Program L-3</b>									
General:	1-9	4	2	4	2	1	1		14
	10-49	7	1	3					11
	50 & up	<u>1</u>	—	—	—	—	—	—	<u>1</u>
	Totals	12	3	7	2	1	1		26
Police:	1-9	3	3					1	7
	10-49	4							4
	50 & up	—	—					—	—
	Totals	7	3					1	11
Fire:	1-9	2					1	1	4
	10-49								
	50 & up	—					—	—	—
	Totals	2					1	1	4
Totals		21	6	7	2	1	2	2	41

*\* Dollar contribution rates for groups presently without active members.*

**Computed Employer Contributions: Contributory Plans**  
**5 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program LT-4 (62 or 65)</b>									
General:	1-9								
	10-49								
	50 & up								—
	Totals								0
Police:	1-9								
	10-49								
	50 & up								—
	Totals								0
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:									0
<b>Benefit Program LT-5 (62 or 65)</b>									
General:	1-9								
	10-49								
	50 & up								—
	Totals								0
Police:	1-9								
	10-49								
	50 & up								—
	Totals								0
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals									0

\* Dollar contribution rates for groups presently without active members.

The above totals include both the LT(62) and LT(65) benefit programs.

**Computed Employer Contributions: Contributory Plans**  
**5 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program L-6</b>									
General:	1-9								
	10-49								
	50 & up		$\frac{1}{1}$						$\frac{1}{1}$
	Totals		1						1
Police:	1-9								
	10-49	1							1
	50 & up	—							—
	Totals	1							1
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:		1	1						2
<b>Benefit Program L-7</b>									
General:	1-9	1	1				2		4
	10-49	4	1	1	1				7
	50 & up	—	—	—	—		—		—
	Totals	5	2	1	1		2		11
Police:	1-9	5				1			6
	10-49				1				1
	50 & up	—			—	—			—
	Totals	5			1	1			7
Fire:	1-9			1					1
	10-49								
	50 & up			—					—
	Totals			1					1
Totals		10	2	2	2	1	2		19

\* Dollar contribution rates for groups presently without active members.

**Computed Employer Contributions: Contributory Plans**  
**5 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program LT-8 (62 or 65)</b>									
General:	1-9		1						1
	10-49	1		1	1				3
	50 & up	—	—	—	—				—
	Totals	1	1	1	1				4
Police:	1-9	1		1					2
	10-49	1							1
	50 & up	—		—					—
	Totals	2		1					3
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:		3	1	2	1				7
<b>Benefit Program L-9</b>									
General:	1-9	1		1			1		3
	10-49	3							3
	50 & up	—		$\frac{1}{2}$			—		$\frac{1}{2}$
	Totals	4		$\frac{1}{2}$			1		7
Police:	1-9	1						1	2
	10-49		1						1
	50 & up	—	—					—	—
	Totals	1	1					1	3
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals		5	1	2			1	1	10

\* Dollar contribution rates for groups presently without active members.

The above totals include both the LT(62) and LT(65) benefit programs. Of the 7 LT-8 benefit programs, 2 are LT-8(62) and 5 are LT-8(65).

**Computed Employer Contributions: Contributory Plans**  
**5 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Concluded)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program LT-10(65)</b>									
General:	1-9								
	10-49								
	50 & up								—
	Totals								0
Police:	1-9								
	10-49								
	50 & up								—
	Totals								0
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:									0
<b>Benefit Program L-11</b>									
General:	1-9								
	10-49								
	50 & up								—
	Totals								0
Police:	1-9								
	10-49								
	50 & up								—
	Totals								0
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:									0

\* Dollar contribution rates for groups presently without active members.

**Computed Employer Contributions: Non-Contributory Plans  
3 Year Final Average Salary  
By Valuation Groups February 28, 2003**

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program L-1</b>									
General:	1-9	1		3	2		1		7
	10-49	3	2		1	1			7
	50 & up	—	—	—	—	—	—		—
	Totals	4	2	3	3	1	1		14
Police:	1-9	3		2		1		1	7
	10-49				1				1
	50 & up	—		—	—	—		—	—
	Totals	3		2	1	1		1	8
Fire:	1-9		1				1		2
	10-49								
	50 & up		—				—		—
	Totals		1				1		2
Totals:		7	3	5	4	2	2	1	24
<b>Benefit Program L-3</b>									
General:	1-9	3					4		7
	10-49	2	1	1					4
	50 & up	<u>1</u>	<u>2</u>	—			—		<u>3</u>
	Totals	6	3	1			4		14
Police:	1-9	1	2						3
	10-49	3							3
	50 & up	—	—						—
	Totals	4	2						6
Fire:	1-9								
	10-49	2							2
	50 & up	—							—
	Totals	2							2
Totals		12	5	1			4		22

\* Dollar contribution rates for groups presently without active members.

**Computed Employer Contributions: Non-Contributory Plans**  
**3 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program LT-4 (62 or 65)</b>									
General:	1-9								
	10-49								
	50 & up								—
	Totals								0
Police:	1-9								
	10-49								
	50 & up								—
	Totals								0
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:								0	
<b>Benefit Program LT-5 (62 or 65)</b>									
General:	1-9						1		1
	10-49		1	1	1				3
	50 & up	<u>1</u>	—	—	—		—		<u>1</u>
	Totals	1	1	1	1		1		5
Police:	1-9	1					1		2
	10-49	3							3
	50 & up	—					—		—
	Totals	4					1		5
Fire:	1-9	1							1
	10-49	1		1					2
	50 & up	—		—					—
	Totals	2		1					3
Totals		7	1	2	1		2	13	

\* Dollar contribution rates for groups presently without active members.

The above totals include both the LT(62) and LT(65) benefit programs. Of the 13 LT-5 benefit programs, 7 are LT-5(62) and 6 are LT-5(65).

**Computed Employer Contributions: Non-Contributory Plans**  
**3 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program L-6</b>									
General:	1-9	1					4		5
	10-49			1		1	1		3
	50 & up	—		—		—	<u>12</u>		<u>12</u>
	Totals	1		1		1	17		20
Police:	1-9						1		1
	10-49	1			1	2	2		6
	50 & up	—			—	—	<u>3</u>		<u>3</u>
	Totals	1			1	2	6		10
Fire:	1-9								
	10-49						2		2
	50 & up						<u>1</u>		<u>1</u>
	Totals						3		3
Totals:		2		1	1	3	26		33
<b>Benefit Program L-7</b>									
General:	1-9			1	1	1	9	3	15
	10-49	5	5	4	6	4	3		27
	50 & up	<u>4</u>	<u>1</u>	<u>10</u>	<u>4</u>	<u>2</u>	—	—	<u>21</u>
	Totals	9	6	15	11	7	12	3	63
Police:	1-9	3		1	1	1		1	7
	10-49	7	2	3	4	2			18
	50 & up	—	<u>1</u>	<u>3</u>	<u>1</u>	—		—	<u>5</u>
	Totals	10	3	7	6	3		1	30
Fire:	1-9	1				1			2
	10-49	1	1		1		2		5
	50 & up	—	—		—	—	—		—
	Totals	2	1		1	1	2		7
Totals		21	10	22	18	11	14	4	100

\* Dollar contribution rates for groups presently without active members.



**Computed Employer Contributions: Non-Contributory Plans**  
**3 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program LT-8 (62 or 65)</b>									
General:	1-9						1		1
	10-49	2		2	3	1	4		12
	50 & up	<u>1</u>	<u>1</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>1</u>		<u>11</u>
	Totals	3	1	5	6	3	6		24
Police:	1-9				1		3	1	5
	10-49	4	2	1	1				8
	50 & up	<u>2</u>	—	<u>1</u>	<u>1</u>		—	—	<u>4</u>
	Totals	6	2	2	3		3	1	17
Fire:	1-9		1	1					2
	10-49	1	1		2		1		5
	50 & up	—	—	<u>1</u>	—	<u>1</u>	<u>1</u>		<u>3</u>
	Totals	1	2	2	2	1	2		10
Totals:		10	5	9	11	4	11	1	51
<b>Benefit Program L-9</b>									
General:	1-9						1		1
	10-49	1		3	1	2			7
	50 & up	<u>1</u>		<u>1</u>	—	<u>2</u>	—		<u>4</u>
	Totals	2		4	1	4	1		12
Police:	1-9	1		2	1	1			5
	10-49	2		1	1				4
	50 & up	—		—	—	<u>1</u>			<u>1</u>
	Totals	3		3	2	2			10
Fire:	1-9		1						1
	10-49								
	50 & up		—						—
	Totals		1						1
Totals		5	1	7	3	6	1		23

\* Dollar contribution rates for groups presently without active members.

The above totals include both the LT(62) and LT(65) benefit programs. Of the 51 LT-8 benefit programs, 7 are LT-8(62) and 44 are LT-8(65).

**Computed Employer Contributions: Non-Contributory Plans**  
**3 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Concluded)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program LT-10(65)</b>									
General:	1-9			1			2		3
	10-49		1	1			1		3
	50 & up		<u>1</u>	<u>1</u>		<u>2</u>	<u>1</u>		<u>5</u>
	Totals		2	3		2	4		11
Police:	1-9	2							2
	10-49		1	2	1	1			5
	50 & up	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>			<u>—</u>
	Totals	2	1	2	1	1			7
Fire:	1-9	1					1		2
	10-49					2			2
	50 & up	<u>—</u>				<u>—</u>	<u>—</u>		<u>—</u>
	Totals	1				2	1		4
Totals:		3	3	5	1	5	5		22
<b>Benefit Program L-11</b>									
General:	1-9						1		1
	10-49								
	50 & up						<u>—</u>		<u>—</u>
	Totals						1		1
Police:	1-9								
	10-49								
	50 & up								
	Totals								0
Fire:	1-9								
	10-49								
	50 & up								
	Totals								0
Totals:						1		1	

\* Dollar contribution rates for groups presently without active members.

**Computed Employer Contributions: Contributory Plans  
3 Year Final Average Salary  
By Valuation Groups February 28, 2003**

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program L-1</b>									
General:	1-9	5	1	4	3			1	14
	10-49		1						1
	50 & up	—	—	—	—			—	—
	Totals	5	2	4	3			1	15
Police:	1-9	2	1						3
	10-49	1							1
	50 & up	—	—						—
	Totals	3	1						4
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:		8	3	4	3			1	19
<b>Benefit Program L-3</b>									
General:	1-9	3	2	1		2			8
	10-49	7	1		1				9
	50 & up	2	—	—	—	—			2
	Totals	12	3	1	1	2			19
Police:	1-9	2		1					3
	10-49	3							3
	50 & up	—		—					—
	Totals	5		1					6
Fire:	1-9				1				1
	10-49								
	50 & up				—				—
	Totals				1				1
Totals		17	3	2	2	2			26

\* Dollar contribution rates for groups presently without active members.

**Computed Employer Contributions: Contributory Plans**  
**3 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99%	11.00% -12.99%	Over 12.99%	Other*	Totals
<b>Benefit Program LT-4 (62 or 65)</b>									
General:	1-9								
	10-49								
	50 & up								—
	Totals								0
Police:	1-9								
	10-49								
	50 & up								—
	Totals								0
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:									0
<b>Benefit Program LT-5 (62 or 65)</b>									
General:	1-9	1							1
	10-49		1						1
	50 & up	—	—						—
	Totals	1	1						2
Police:	1-9								
	10-49			1					1
	50 & up			—					—
	Totals			1					1
Fire:	1-9					1	1		2
	10-49								
	50 & up					—	—		—
	Totals					1	1		2
Totals		1	1	1		1	1		5

\* Dollar contribution rates for groups presently without active members.

The above totals include both the LT(62) and LT(65) benefit programs. Of the 5 LT-5 benefit program, 0 are LT-5(62) and 5 are LT-5(65).

**Computed Employer Contributions: Contributory Plans**  
**3 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							Totals
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	
<b>Benefit Program L-6</b>									
General:	1-9		1			1	1	2	5
	10-49	3		1			1		5
	50 & up	<u>1</u>	—	—	<u>1</u>	<u>1</u>	<u>1</u>	—	<u>4</u>
	Totals	4	1	1	1	2	3	2	14
Police:	1-9	2	1	1					4
	10-49	2	1	1					4
	50 & up	—	—	—		<u>1</u>			<u>1</u>
	Totals	4	2	2		1			9
Fire:	1-9								
	10-49								
	50 & up								
	Totals								0
Totals:		8	3	3	1	3	3	2	23
<b>Benefit Program L-7</b>									
General:	1-9	3	4		1	2	2		12
	10-49	8	2	3	1	1			15
	50 & up	<u>4</u>	—	—	—	—	—		<u>4</u>
	Totals	15	6	3	2	3	2		31
Police:	1-9	3		1				1	5
	10-49	4	1	1					6
	50 & up	—	<u>1</u>	—				—	<u>1</u>
	Totals	7	2	2				1	12
Fire:	1-9						1	2	3
	10-49								
	50 & up						—	—	—
	Totals						1	2	3
Totals		22	8	5	2	3	3	3	46

\* Dollar contribution rates for groups presently without active members.

**Computed Employer Contributions: Contributory Plans**  
**3 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Continued)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals
<b>Benefit Program LT-8 (62 or 65)</b>									
General:	1-9					1			1
	10-49								
	50 & up	<u>2</u>				—			<u>2</u>
	Totals	2				1			3
Police:	1-9								
	10-49	1							1
	50 & up	—							—
	Totals	1							1
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:		3				1			4
<b>Benefit Program L-9</b>									
General:	1-9								
	10-49	3							3
	50 & up	—	<u>1</u>			<u>1</u>			<u>2</u>
	Totals	3	1			1			5
Police:	1-9							1	1
	10-49	2	1						3
	50 & up	—	—					—	—
	Totals	2	1					1	4
Fire:	1-9								
	10-49			1					1
	50 & up			—					—
	Totals			1					1
Totals		5	2	1	1			1	10

\* Dollar contribution rates for groups presently without active members.

The above totals include both the LT(62) and LT(65) benefit programs. Of the 4 LT-8 benefit programs, 3 are LT-8(62) and 1 is LT-8(65).

**Computed Employer Contributions: Contributory Plans**  
**3 Year Final Average Salary**  
**By Valuation Groups February 28, 2003**  
*(Concluded)*

Group	Number of Active Members	Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
		Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99%	11.00% -12.99%	Over 12.99%	Other*	Totals
<b>Benefit Program LT-10(65)</b>									
General:	1-9				1			1	2
	10-49	1							1
	50 & up	—			—			—	—
	Totals	1			1			1	3
Police:	1-9							1	1
	10-49								
	50 & up							—	—
	Totals							1	1
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:		1			1			2	4
<b>Benefit Program L-11</b>									
General:	1-9								
	10-49								
	50 & up								—
	Totals								0
Police:	1-9								
	10-49								
	50 & up								—
	Totals								0
Fire:	1-9								
	10-49								
	50 & up								—
	Totals								0
Totals:									0

\* Dollar contribution rates for groups presently without active members.

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**Section H**

**Appendix**

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**SUMMARY OF  
ASSUMPTIONS USED FOR LAGERS ACTUARIAL VALUATIONS  
Assumptions Adopted by LAGERS Board after Consulting with Actuary**

*The actuarial assumptions used* in making the valuations are shown in this Appendix of the report.

**ECONOMIC ASSUMPTIONS -----**

*The investment return rate* used in making the valuations was 7.5% per year, compounded annually (net after administrative expenses). The real rate of return is the portion of total investment return which is more than the inflation rate. Considering inflation recognition of 4%, the 7.5% investment return rate translates to an assumed real rate of return of 3.5%. Adopted 2001.

*Pay increase assumptions* for individual active members are shown for sample ages on pages H-4 and H-5. Part of the assumption for each age is for merit and/or seniority increase, and the other 4% recognizes inflation. Adopted 2001.

*The active member payroll* is assumed to increase 4% annually, which is the portion of the individual pay increase assumptions attributable to inflation. Adopted 1987.

*Post-retirement increases* are assumed to be 2.88%, compounded annually.

*The number of active members* per employer is assumed to continue at the present number. Adopted 1967.

**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 2000, set back 1 year for men and 7 years for women. The disability post-retirement rates were equal to the standard rates set forward 10 years. Related values are shown on page H-3. Adopted 2001.

*The probabilities of age and service retirement* are shown on page H-3. Adopted 2001.

*The probabilities of withdrawal from service and death in service* are shown for sample ages on pages H-4 and H-5. It is assumed that all contributory members terminating before age 40 or with less than 10 years service, and a percentage (General: 30%, Police-Fire: 20%) of contributory members terminating after age 40 with 10 or more years service, withdraw their contributions and forfeit any vested employer-financed benefit. The mortality table used to evaluate mortality among active members was the 1983 Group Annuity Mortality Table set back 0 years for men and 0 years for women. Adopted 2001.

**An individual entry age actuarial cost method of valuation** was used in determining age & service allowance normal costs and the allocation of actuarial present values between service rendered before and after the valuation date. The entry-age actuarial cost method has the following characteristics:

- (i) the annual normal costs for each individual active member, payable from the member's actual date of employment to the member's projected date of retirement are sufficient to accumulate the actuarial present value of the member's benefit at the time of retirement;
- (ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Unfunded accrued liabilities are amortized by level (principal & interest) percent of payroll contributions. Except for amortization of the liabilities associated with the Non-Contributory Refund provision, the minimum amortization period is 15 years. Adopted 1987.

**Contribution rates for disability** retirement are determined using a modified terminal funding method. Contribution rates are periodically adjusted based on the trend of the balance of the Casualty Reserve Fund (CRF). The funding objective is to have assets in the CRF sufficient to cover the future liabilities for disability retired lives. Adopted 1967.

**Future service credit** is always assumed to accrue at the rate of 1 year of credit every 12 calendar months. Lower service accrual rates (service breaks or less-than-full-time employment) or higher service accrual rates (addition of military credit or reinstatement of prior service) are reflected as they are reported. Any lower or higher accrual rates may result in small financial gains or losses when reported. Adopted 1967.

**The form of benefit payment** assumed in the valuation is the Life Option. However, for members with accumulated member contributions, the residual refund available upon an early death after retirement is approximated by assuming pension payments are made for at least 3 years. Adopted 1967.

**Employer contribution dollars** were assumed to be *paid in equal installments* throughout the employer fiscal year. Adopted 1967.

**The Funding Value of Assets** recognize assumed investment return fully each year. Differences between actual and assumed investment return are phased in over a closed 5 year period. Funding value is not permitted to deviate from market value by more than 20%. Adopted 1995 and 2003.

**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.

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

**Single Life Retirement Values**  
**(1971 Group Annuity Mortality Table projected to 2000,**  
**setback 1 year for men and 7 years for women, & i = .075)**

Sample Attained Ages	Present Value of \$1.00 Monthly Increasing for Life		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	\$185.35	\$202.23	29.17	34.67
55	169.49	188.33	24.82	30.06
60	151.82	172.80	20.70	25.67
65	132.52	155.51	16.82	21.50
70	112.72	136.48	13.32	17.57
75	94.11	116.64	10.36	13.99
80	76.88	97.74	7.83	10.91

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

Ages	Without Rule of 80 Eligibility				With Rule of 80 Eligibility			
	General*		Police*	Fire*	General		Police	Fire
	Men	Women			Men	Women		
50			3%	4%	25%	25%	25%	25%
51			3	4	15	15	25	25
52			3	4	15	15	25	25
53			3	4	15	15	25	25
54			3	4	15	15	25	25
55	2%	4%	15	20%	15	15	25	25
56	2	4	10	20	15	15	25	25
57	2	4	10	15	15	15	15	10
58	2	4	10	15	15	15	25	15
59	2	4	10	15	15	15	20	10
60	10	10	10	20	25	30	20	20
61	10	10	10	20	25	20	25	15
62	35	20	35	40	35	25	30	45
63	25	20	30	40	35	20	25	35
64	25	20	35	35	35	35	50	70
65	40	30	100	100	35	50	100	100
66	30	25			35	35		
67	30	20			35	30		
68	20	25			25	25		
69	25	25			35	50		
70	100	100			100	100		

\* First 5 years of retirement pattern only apply to early retirement.

**GENERAL - MEN**  
**Separations from Active Employment Before Age & Service Retirement**  
**& Individual Pay Increase Assumptions**

Sample Ages	Years of Service	Percent of Active Members Separating within the Next Year		Pay Increase Assumptions for an Individual Employee		
		Death	Other	Merit & Seniority	Base (Economy)	Increase Next Year
ALL	0		21.00%			
	1		16.00			
	2		12.00			
	3		11.00			
	4		10.00			
25	5 & Over	0.05%	8.40	3.9%	4%	7.9%
30		0.06	7.00	2.9	4	6.9
35		0.09	5.60	2.0	4	6.0
40		0.12	4.40	1.6	4	5.6
45		0.22	3.60	1.2	4	5.2
50		0.39	3.10	1.0	4	5.0
55		0.61	2.30	0.8	4	4.8
60		0.92	1.20	0.5	4	4.5
65	1.56	0.00	0.0	4	4.0	

**GENERAL - WOMEN**  
**Separations from Active Employment Before Age & Service Retirement**  
**& Individual Pay Increase Assumptions**

Sample Ages	Years of Service	Percent of Active Members Separating within the Next Year		Pay Increase Assumptions for an Individual Employee		
		Death	Other	Merit & Seniority	Base (Economy)	Increase Next Year
ALL	0		23.00%			
	1		20.00			
	2		16.00			
	3		14.00			
	4		12.00			
25	5 & Over	0.03%	11.10	3.9%	4%	7.9%
30		0.03	9.60	2.9	4	6.9
35		0.05	8.10	2.0	4	6.0
40		0.07	7.00	1.6	4	5.6
45		0.10	5.70	1.2	4	5.2
50		0.16	4.90	1.0	4	5.0
55		0.25	3.00	0.8	4	4.8
60		0.42	1.40	0.5	4	4.5
65	0.71	0.00	0.0	4	4.0	

**POLICE**  
**Separations from Active Employment Before Age & Service Retirement**  
**& Individual Pay Increase Assumptions**

Sample Ages	Years of Service	Percent of Active Members Separating within the Next Year		Pay Increase Assumptions for an Individual Employee		
		Death	Other	Merit & Seniority	Base (Economy)	Increase Next Year
ALL	0		20.00%			
	1		18.00			
	2		16.00			
	3		14.00			
	4		12.00			
25	5 & Over	0.05%	11.10	3.9%	4%	7.9%
30		0.06	9.00	2.9	4	6.9
35		0.09	7.00	2.0	4	6.0
40		0.12	5.80	1.6	4	5.6
45		0.22	5.00	1.2	4	5.2
50		0.39	3.50	1.0	4	5.0
55		0.61	1.00	0.8	4	4.8

**FIRE**  
**Separations from Active Employment Before Age & Service Retirement**  
**& Individual Pay Increase Assumptions**

Sample Ages	Percent of Active Members Separating within the Next Year		Pay Increase Assumptions for an Individual Employee		
	Death	Other	Merit & Seniority	Base (Economy)	Increase Next Year
25	0.05%	6.80	3.9%	4%	7.9%
30	0.06	5.00	2.9	4	6.9
35	0.09	3.60	2.0	4	6.0
40	0.12	2.40	1.6	4	5.6
45	0.22	1.50	1.2	4	5.2
50	0.39	0.80	1.0	4	5.0
55	0.61	0.20	0.8	4	4.8

## SUMMARY OF ADDITIONAL ASSUMPTIONS USED FOR 50-YEAR PROJECTIONS

*The investment return rate* used in the asset projections was 7.5% per year, both before and after retirement.

*Future Active Employees* are assumed to have characteristics (age, sex, pay rate) that are similar to the characteristics of current employees at the time they were hired. Specifics are shown on page C-4.

*Future service credit* is always assumed to accrue at the rate of 1 year of credit every 12 calendar months.

*The forms of benefit payment* assumed in the projection are shown below, based on past experience. For members with accumulated member contributions, the residual refund available upon an early death after retirement is approximated by assuming pension payments are made for at least 3 years.

Benefit Form	Percent Electing
Life Option	60%
75% Joint & Survivor	19
50% Joint & Survivor	12
10 Year Certain	9

90% of active members were assumed to be married.

*Post-Retirement Benefit Increases.* The projection assumes that a 7.5% annual rate of investment return is earned on the entire portfolio (including the retiree portion of the assets). Based on the projected 7.5% annual return, an annual 2.88% compound post-retirement benefit increase is supportable. Annual increases above 2.88%, up to the maximum 4% average increase specified in statute, are projected to be paid out until the exhaustion of the Reserve for Future Experience in the Benefit Reserve Fund.

*Projected benefits for disability* retirement are determined using probabilities of disability which were determined empirically to approximate the operation of the terminal funding method currently used to establish contributions. Probabilities of disability are shown below for sample ages:

<u>Sample Ages</u>	<u>General Men</u>	<u>General Women</u>	<u>Police</u>	<u>Fire</u>
25	0.16%	0.02%	0.08%	0.07%
30	0.21	0.02	0.10	0.11
35	0.27	0.03	0.14	0.25
40	0.35	0.06	0.20	0.39
45	0.46	0.12	0.31	0.62
50	0.60	0.25	0.52	0.95







## LAGERS Retainer Actuarial Fees 10 Year Comparative Statement

Valuation Date As of	Number of Valuation Groups	Annual Actuarial Fees (nearest \$1)	Consumer Price Index (1967 is 100)	AVERAGE FEE PER GROUP	
				Unadjusted Dollars	1967* Dollars
2/28/1994	645	\$147,990	439.3	\$229	\$52
2/28/1995	655	151,898	452.0	232	51
2/29/1996	665	155,981	464.2	235	51
2/28/1997	686	159,701	478.2	233	49
2/28/1998	711	164,711	484.9	232	48
2/28/1999	731	166,991	492.9	228	46
2/29/2000	747	169,995	508.7	228	45
2/28/2001	777	174,985	526.7	225	43
2/28/2002	791	180,971	532.7	229	43
2/28/2003	803	183,775	548.5	229	42

\* A goal for LAGERS during the initial design activity in 1966 and 1967 was that the actuarial retainer fee be approximately \$100 annually per valuation group - - - an amount substantially less than the amount the municipality would pay if it arranged independently for an actuarial valuation of comparable quality.

October 8, 2003

Mr. William R. Schwartz  
Executive Secretary  
Missouri Local Government  
Employees Retirement System  
701 West Main Street  
Jefferson City, Missouri 65101

Dear Bill:

Please find enclosed 10 copies of the *Compiled Report of the February 28, 2003 valuations* for the participating employers of the Missouri Local Government Employees Retirement System.

Sincerely,

Mita D. Drazilov

MDD:rmg  
Enclosures

CC: Ms. Melissa Benton (KPMG Peat Marwick)

# **MISSOURI LOCAL GOVERNMENT EMPLOYEES RETIREMENT SYSTEM**

**Compiled 35th Annual Actuarial Valuations  
As of February 28, 2003**

**50 Year Actuarial Projection  
Beginning February 28, 2003**

**GABRIEL, ROEDER, SMITH & COMPANY  
ACTUARIES, CONSULTANTS**