The Report of the
COMPILED 36th ANNUAL ACTUARIAL VALUATIONS
Based Upon Data as of February 29, 2004
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 Actuaries • Consultants

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September 2, 2004

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

*Submitted in this report* are the compiled results of the *36th annual actuarial valuations* for the Missouri Local Government Employees Retirement System, as amended through February 29, 2004.

The date of the valuations was February 29, 2004.

**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 valuation date. Such valuations were made for **828 groups** (**499 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 by LAGERS staff 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 2004 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 to economic assumptions, which were first used in the 2001 valuations.

*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 2004 valuations it is our opinion that *LAGERS continues in sound condition in accordance with actuarial principles of level cost financing*. The 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.

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### **Comments on Valuation Results**

*Individual valuations of participating employers*. There were 828 new employer contribution rates computed as of February 29, 2004. (Twenty-Five groups had no active employees and a dollar contribution was calculated for them. These twenty-five groups are excluded from the totals on this page.) Of the 828 new rates, 314 were decreases from the previous rates, 378 were increases from the previous rates and 136 were unchanged. Further detail is shown in section F. A ten year comparative schedule follows:

Valuation				
Date	Decreases	Unchanged	Increases	Total
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
2-28-03	202	139	462	803
2-29-04	314	136	378	828

<sup>\*</sup> 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 employer contribution rates existed for many employers. This stemmed from the fact that their February 28, 2003 computed employer contribution rate was capped based upon the one percent maximum allowable increase in computed employer contribution rates (non benefit-change related). The decline in the investment markets in 2001 through 2003 has been and continues to be the primary cause of the contribution rate increases.

Investment return exceeded the assumed rate of return on a market value of assets basis as of February 29, 2004, mostly offsetting the scheduled unrecognized investment losses from prior years. This enabled the number of increases in employer contribution rates to decline from the previous year. The market value and actuarial value of assets are now virtually the same. This is a marked improvement over the prior year when actuarial value exceeded market value by 20%. (Beginning in 2003, the actuarial value of assets is not allowed to deviate from the market value of assets by more than 20%.)

**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 116.5% to 115.8% as of February 29, 2004, due to slightly unfavorable investment experience based upon the actuarial value of assets and scheduled reserve transfers for retirements that occurred during the valuation year. Page B-11 has detail.

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

"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).

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.

# **Section A**

# **Financial Principles**

## Financial Principles and Operational Techniques of LAGERS

**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, 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.

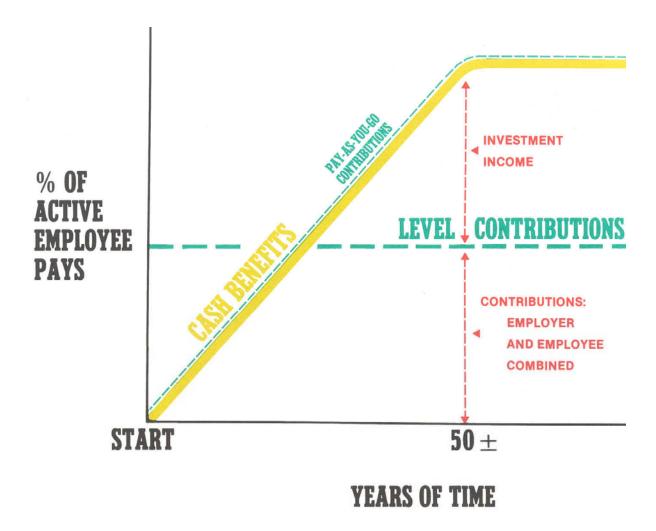
In making an actuarial valuation the system must assume what the above experience will be, for the next year and for decades in the future. Only the subsequent actual experience of the System can indicate the degree of accuracy of the assumptions.

**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. Historically, this limit has generally not been 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.



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

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

**Economic Risk Areas** 

Rates of investment return

Rates of pay increase

Changes in active member group size

Non-Economic Risk Areas

Ages at actual retirement

Rates of mortality

Rates of withdrawal of active members (turnover)

Rates of disability

### **The Actuarial Valuation Process**

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.

# **Section B**

**Valuation Results** 

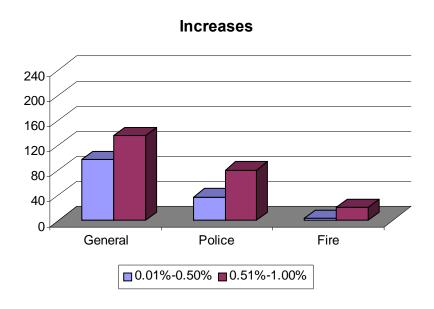
# CHANGE in Employer Contributions\* By Valuation Groups February 29, 2004

			Number of Valuation Groups with Indicated Change in Employer Contribution Rate							
	Number of	]	Decreases	nange in L	inployer com	Increa				
	Active	Over	0.51%	0.01%	Unchanged	0.01%	0.51%			
Group	Members	1.00%	to 1.00%	to 0.50%	0.00%	to 0.50%	to 1.00%	Totals		
General:	1 - 9	19	8	50	33	27	46	183		
	10 - 49	8	24	44	33	44	56	209		
	50 & up	<u>5</u>	<u>3</u>	29	13	<u>27</u>	34	111		
	Totals	32	35	123	79	98	136	503		
Police:	1 - 9	13	15	20	22	16	37	123		
	10 - 49	4	13	27	24	17	36	121		
	50 & up		1	3	<u>2</u>	<u>5</u>	<u>8</u>	<u>19</u>		
	Totals	17	29	50	48	38	81	263		
Fire:	1 - 9	3	5	8	3	2	3	24		
	10 - 49	1	1	8	6	2	14	32		
	50 & up		0	2			<u>4</u>	<u>6</u>		
	Totals	4	6	18	9	4	21	62		
Totals		53	70	191	136	140	238	828		

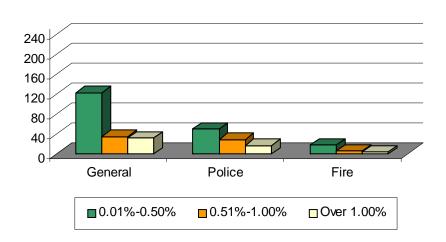
<sup>\*</sup> Includes changes in employer contribution rates due to actual experience, changes in actuarial assumptions and changes in actuarial methods. It does not include changes in employer contribution rates due to benefit program changes.

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



### **Decreases**



<sup>\*</sup> 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
02/28/95	\$ 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
02/29/04	2,808,907,263	2,929,171,779	120,264,516	95.9	989,446,058	12.2

#### # Revised actuarial assumptions

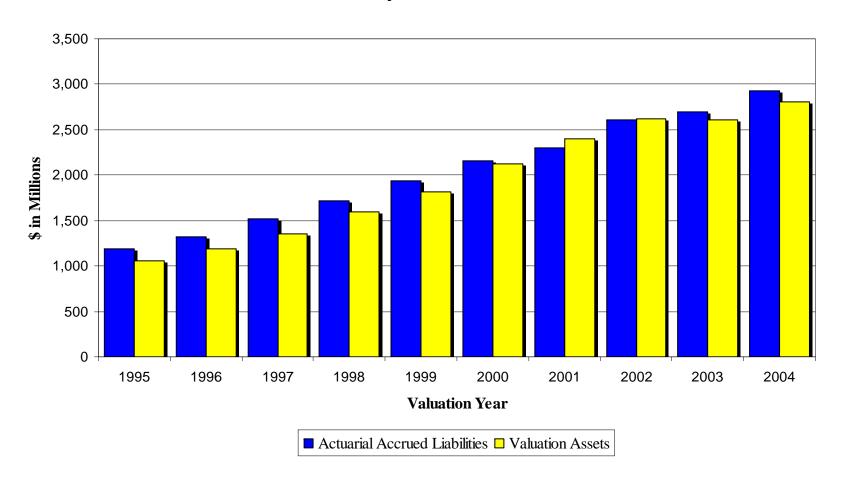
Each employer participating in the System is financially responsible for its own obligation. Accordingly, the aggregate numbers presented on this and the following pages are indicative only of the overall condition of the System and are not indicative of any one employer.

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

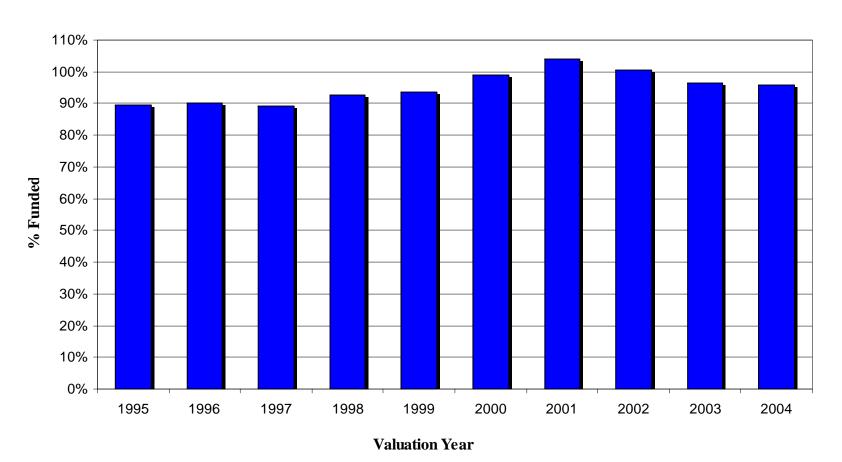
- Employers adopting new benefit programs. For example, before reflecting the benefit changes adopted by political subdivisions during the year, the 2-28-03 and 2-29-04 Funded Ratios would have been 97.6% (instead of 96.4%) and 96.3% (instead of 95.9%), respectively.
- New employers joining LAGERS (who 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.
- Slightly 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.

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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**

	Entr	y Age Accrued I			•		
	(1)	(2)	(3)		l I	Portion of	
	Active	Retirants	Active Members		Accr	ued Lia	bility
Valuation	Member	and	(Employer Financed	<b>Actuarial Value</b>	Cove	red by A	Assets
Date	Contributions	Beneficiaries*	Portion)	of Assets	(1)	(2)	(3)
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
02/29/04	70,562,031	1,026,668,962	1,831,940,786	2,808,907,263	100	100	93

<sup>#</sup> Revised actuarial assumptions.

<sup>\*</sup> Includes reserve for future benefit increases.

### **Employers Accumulation Fund**

*The Employers Accumulation Fund* assets totaled \$1,697,031,492 as of February 29, 2004 based on the actuarial value of assets. The individual participating Employers Accumulation Fund accrued liabilities (entry age actuarial cost method) were computed to be \$1,817,296,008 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

Valuation	Actuarial	Aggregate	Ratio of
	Value	Accrued	Assets to
Date	of Assets	Liabilities	Liabilities*
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
2-29-04	1,697,031,492	1,817,296,008	93.4

<sup>#</sup> Revised actuarial assumptions.

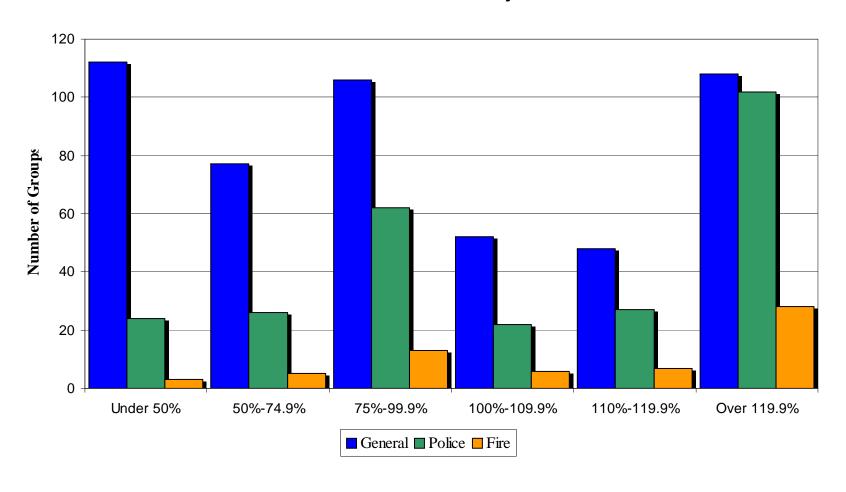
<sup>\*</sup> The larger the ratio of assets to liabilities, the greater the reserve strength of the Employers Accumulation Fund.

# Employers Accumulation Fund PORTION of LIABILITIES covered by ASSETS By Valuation Groups February 29, 2004

			Num	ber of Valu	ation Gro	ups with A	Assets		
	Number of		as a Percent of Actuarial Accrued Liabilities						
	Active	Under	50.0%	75.0%	100.0%	110.0%	Over		
Group	Members	50.0%	- 74.9%	- 99.9%	- 109.9%	- 119.9%	119.9%	Totals*	
General:	1 - 9	80	30	24	7	10	32	183	
	10 - 49	28	39	41	28	19	54	209	
	50 & up	<u>4</u>	8	<u>41</u>	<u>17</u>	<u>19</u>	<u>22</u>	<u>111</u>	
	Totals	112	77	106	52	48	108	503	
Police:	1 - 9	20	17	23	5	8	50	123	
	10 - 49	3	7	30	14	16	51	121	
	50 & up	<u>1</u>	<u>2</u>	<u>9</u>	<u>3</u>	3	<u>1</u>	<u>19</u>	
	Totals	24	26	62	22	27	102	263	
Fire:	1 - 9	2	4	4	1	2	11	24	
	10 - 49		1	7	2	5	17	32	
	50 & up	<u>1</u>		2	3			6	
	Totals	3	5	13	6	7	28	62	
Totals*		139	108	181	80	82	238	828	

<sup>\*</sup> Not included in this tabulation are 25 groups which presently have no active members.

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



# **Members Deposit Fund**

The Members Deposit Fund assets for active members totaled \$70,562,031 as of February 29, 2004.

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

	Actuarial	Aggregate	Ratio of
Valuation	Value	Accrued	Assets to
Date	of Assets	Liabilities	Liabilities
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
2-29-04	70,562,031	70,562,031	100.0

### **Benefit Reserve Fund**

*The Benefit Reserve Fund* assets as of February 29, 2004 totaled \$1,026,668,962 based on the actuarial value of assets. The present value of future benefits was computed to be \$886,280,744 as of that date.

When a member retires, there is transferred to the Benefit Reserve Fund a single sum reserve which is expected to 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, 2003 and consisted of an overall increase of 4% or less.

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

				Present				Ratio of
Annual		Benefit	Investment	Value of	Reserve for		Actuarial	Actuarial Value
Valuation	Pensions	Increase %	Return %	Future	Future	Accrued	Value of	of Assets to
Date	Being Paid	Last Oct. 1	Last June 30	Benefits	Experience	Liabilities	Assets	PVFB
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
02/29/04	79,465,768	4.0	(5.4)	886,280,744	140,388,218	1,026,668,962	1,026,668,962	115.8

<sup>#</sup> Revised actuarial assumptions.

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

### **Casualty Reserve Fund**

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	Employer L-1 Contributions:	Actuarial Value of	Accrued	Assets Expressed as Perce of Member Payroll	
Date	Year Ended	Assets	Liabilities	Total	Change
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
02/29/04	0.5	14,644,778	14,644,778	1.5	0.5

<sup>@</sup> Reflects special \$10 million transfer to the Casualty Reserve Fund.

# **Section C**

**Asset Data Used in the Valuations** 

# Reported Accrued Assets Available for Benefits February 29, 2004

Statutory Funds	Reported Assets	Actuarial Value of Assets
Employers Accumulation Fund Members Deposit Fund Benefit Reserve Fund Casualty Reserve Fund	\$1,320,367,739 70,562,031 807,891,849 11,524,062	\$1,697,031,492 70,562,031 1,026,668,962 14,644,778
Total	\$2,210,345,681	\$2,808,907,263

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 C-3 and C-4. The funding value adjustment factor is applied to the reported cost value of assets 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 29, 2004 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

	Inves	Investment Credits as % of Fund Balance						
	Casualty	Member	Benefit	Employer				
	Reserve	Deposit	Reserve	Accumulation	Inflation			
Year Ended	Fund	Fund	Fund	Fund	Loss %			
June 30	A	В	C	D	(CPI)			
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			
2004	7.5	4.0	11.4	11.8	3.2			
5 Yea	ar Compound Av	verage	1.0%	7.8%	2.7%			

- **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

Ye	ar Ending February 28:	2000	2001	2002	2003
A.	Actuarial Value Beginning of Year	\$1,811,923,839	\$2,123,617,043	\$2,389,634,186	\$2,616,628,515
B.	Market Value End of Year	2,485,015,501	2,489,404,871	2,407,123,169	2,169,862,393
C.	Market Value Beginning of Year	2,011,620,041	2,485,015,501	2,489,404,871	2,407,123,169
D.	Non-Investment/Administrative Net Cash Flow	24,151,871	26,601,543	27,079,368	19,398,493
E.	Investment Income E1. Market Total: B-C-D E2. Assumed Rate of Return E3. Amount for Immediate Recognition E4. Amount for Phased-In Recognition: E1-E2	449,243,589 7.00% 127,679,984 321,563,605	(22,212,173) 7.00% 149,584,247 (171,796,420)	(109,361,070) 7.50% 180,238,040 (289,599,110)	(256,659,269) 7.50% 196,974,582 (453,633,851)
F.	Phased-In Recognition of Investment Income F1. Current Year: 0.20 x E4 F2. First Prior Year F3. Second Prior Year F4. Third Prior Year F5. Fourth Prior Year F6. Total Recognized Phase-Ins	64,312,721 (3,373,650) 51,016,958 12,234,609 35,670,711 159,861,349	(34,359,284) 64,312,721 (3,373,650) 51,016,958 12,234,608 89,831,353	(57,919,822) (34,359,284) 64,312,721 (3,373,650) 51,016,956 19,676,921	(90,726,770) (57,919,822) (34,359,284) 64,312,721 (3,373,648) (122,066,803)
G.	Actuarial Value End of Year G1. Preliminary Actuarial Value End of Year: A+D+E3+F6 G2. Upper Corridor Limit: 120% x B G3. Lower Corridor Limit: 80% x B G4. Actuarial Value End of Year	\$2,123,617,043 \$2,123,617,043	\$2,389,634,186 \$2,389,634,186	\$2,616,628,515 \$2,616,628,515	\$2,710,934,787 \$2,603,834,872 \$1,735,889,914 \$2,603,834,872
H.	Difference between Market & Actuarial Value	361,398,458	99,770,685	(209,505,346)	(433,972,479)
I.	Ratio of Actuarial Value to Market Value	85.5%	96.0%	108.7%	120.0%
J.	Actuarial Value Adjustment Factor (ratio of actuarial value to EAF+MDF+CRF+BRF cost value)	1.1467	1.0381	1.0741	1.1223
K.	Recognized Rate of Return	15.76%	11.20%	8.32%	(1.23)%
L.	Market Rate of Return	22.20%	(0.89)%	(4.37)%	(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).

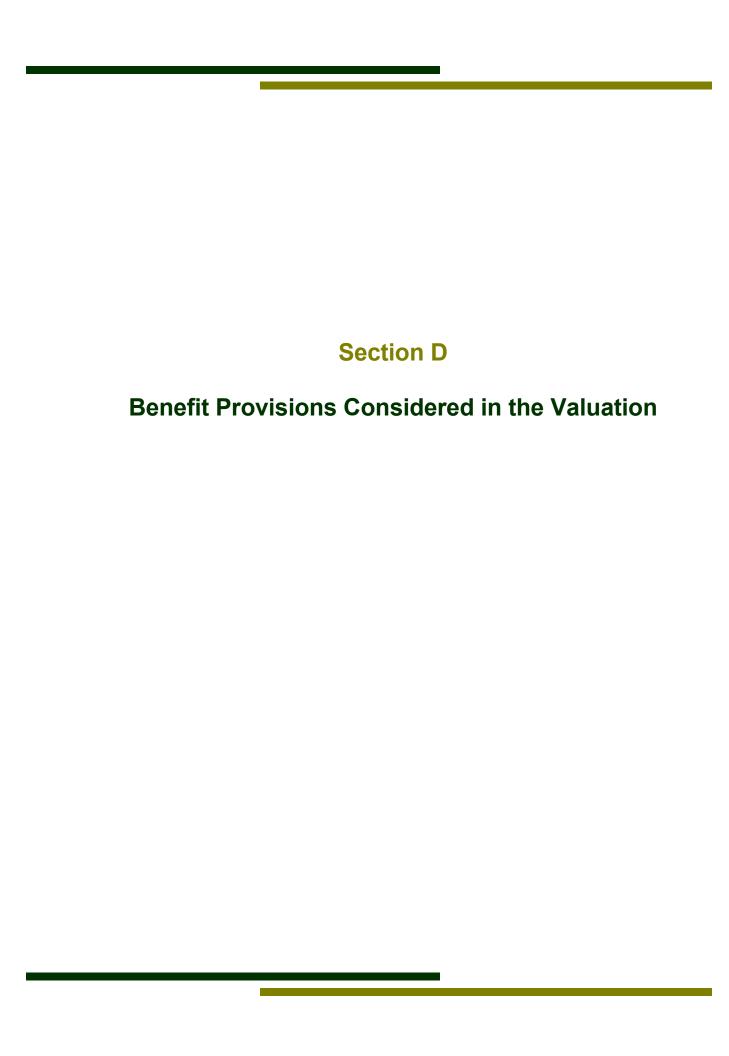
Note: Asset values on this page differ slightly from asset values reported elsewhere in this report, due to a number of miscellaneous closing entries that are not included in the above amounts and rounding.

# Missouri LAGERS Development of Funding Value of Retirement System Assets

Ye	ar Ending February 28:	2004	2005	2006	2007	2008
A.	Actuarial Value Beginning of Year	\$2,603,834,872				
B.	Market Value End of Year	2,831,382,994				
C.	Market Value Beginning of Year	2,169,862,393				
D.	Non-Investment/Administrative Net Cash Flow	14,085,194				
E.	Investment Income E1. Market Total: B-C-D E2. Assumed Rate of Return E3. Amount for Immediate Recognition E4. Amount for Phased-In Recognition: E1-E2	647,435,407 7.50% 195,815,810 451,619,597				
F.	Phased-In Recognition of Investment Income F1. Current Year: 0.20 x E4 F2. First Prior Year F3. Second Prior Year F4. Third Prior Year F5. Fourth Prior Year F6. Total Recognized Phase-Ins	90,323,919 (72,768,306) (46,455,168) (27,558,204) 51,582,656 (4,875,103)	90,323,919 (72,768,306) (46,455,168) (27,558,204) (56,457,759)	90,323,919 (72,768,306) (46,455,168) (28,899,555)	90,323,919 (72,768,305) 17,555,614	90,323,921 90,323,921
G.	Actuarial Value End of Year G1. Preliminary Actuarial Value End of Year: A+D+E3+F6 G2. Upper Corridor Limit: 120% x B G3. Lower Corridor Limit: 80% x B G4. Actuarial Value End of Year	\$2,808,860,773 \$3,397,659,593 \$2,265,106,395 \$2,808,860,773				
H.	Difference between Market & Actuarial Value	22,522,221	78,979,980	107,879,535	90,323,921	
I.	Ratio of Actuarial Value to Market Value	99.2%				
J.	Actuarial Value Adjustment Factor (ratio of actuarial value to EAF+MDF+CRF+BRF cost value)	1.2708				
K.	Recognized Rate of Return	7.31%				
L.	Market Rate of Return	29.74%				

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 Loc<u>Al</u> Government Employees Retirement System Brief Summary of LAGERS Benefits and Conditions Evaluated and/or Considered

### Benefits and Conditions Evaluated and/or Considered Through February 29, 2004 (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 29, 2004

#### **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 D-1 through D-3 for a summary of LAGERS provisions.

When the 2004 actuarial valuations were made, the Benefit Programs evaluated were as follows:

		Benefit Programs																				
		Non-Contributory								Contributory								]				
FAS	Groups	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	Totals
5 yr.	General	44	31	1	8	10	35	11	6	2		45	26			4	13	3	7	1		247
	Police	24	17	1	4	7	23	5	3			23	12			2	8	2	3	1		135
	Fire	4	3		2	<u>3</u>	<u>3</u>	<u>4</u>	<u>1</u>				4				<u>1</u>					<u>25</u>
	Totals	72	51	2	14	20	61	20	10	2		68	42			6	22	5	10	2		407
3 yr.	General	13	15		5	24	63	24	14	13	1	19	18		2	14	28	3	7	3		266
	Police	8	7		5	12	29	17	11	9		7	5		1	9	11	2	5	1		139
	Fire	2	<u>2</u>		3	<u>5</u>	6	9	<u>2</u>	<u>5</u>			1		2		<u>3</u>		1			<u>41</u>
	Totals	23	24		13	41	98	50	27	27	1	26	24		5	23	42	5	13	4		446

*The above LT columns include both the LT*(62) *and LT*(65) *benefit programs. The table includes* 25 *groups with no active members.* 

# **Section E**

**Participant Data** 

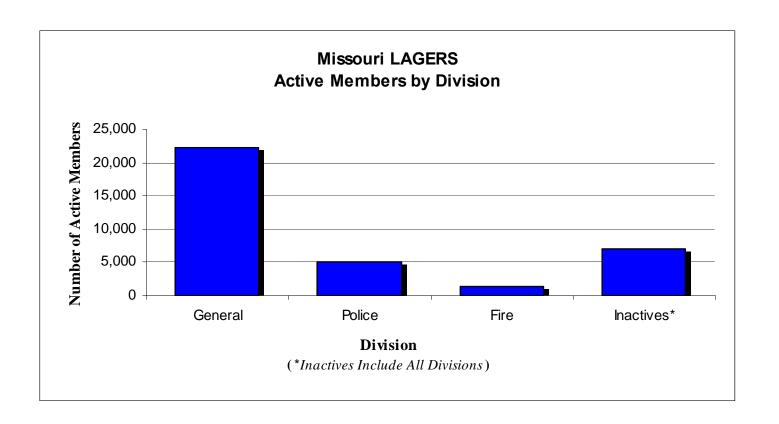
# Participating Employers Evaluated February 29, 2004

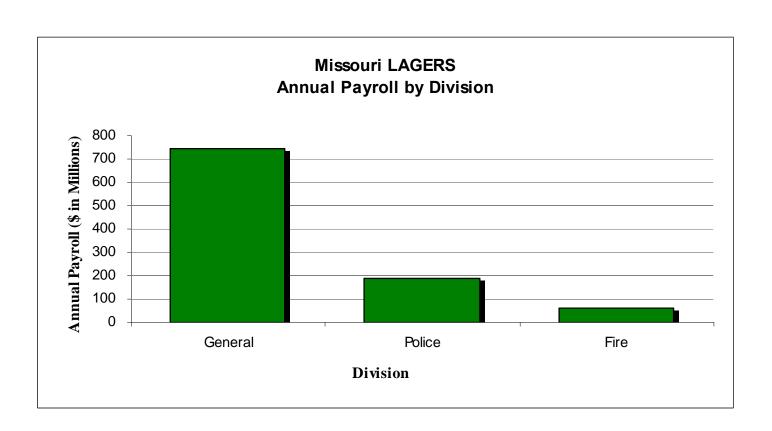
	Number of				
Type of Group	Participating Employe	ers			
General Only	226				
Fire Only	4				
General and Police	211				
General and Fire	6				
General and Police and Fire	52				
Total	499				

# Active and Inactive Members in Valuations February 29, 2004

	Num	ber of				
	Active	Valuation	Annual			
Classification	Members	Groups*	Payroll			
Active members						
General	22,321	503	\$742,541,355			
Police	5,049	263	186,282,646			
Fire	<u>1,391</u>	<u>62</u>	60,622,057			
Total Actives	28,761	828	\$989,446,058			
Inactive Members	6,935					
Total members	35,696					

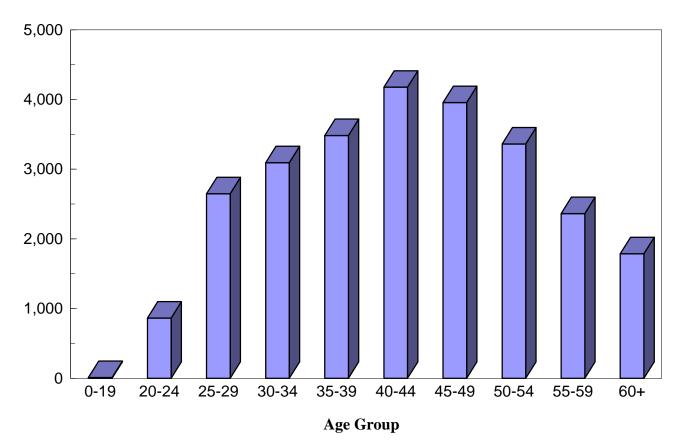
<sup>\*</sup> Each Police group and each Fire group is evaluated separately. Each general group is evaluated separately, but also may be broken into sub-groups for separate financial experience if the employer desires separate employer rates for internal accounting purposes.



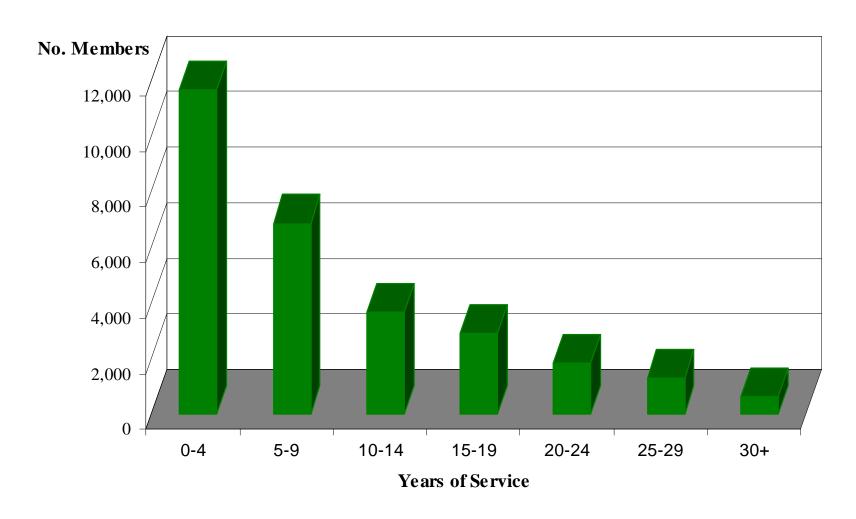


# Missouri LAGERS Distribution of Active Members By Age February 29, 2004

#### No. Members



# Missouri LAGERS Distribution of Active Members By Service February 29, 2004



# GENERAL MEMBERS MEN Active Members February 29, 2004 By Attained Age and Years of Service

		Years	of Serv	rice to V	aluation	n Date			Totals
Attained									Valuation
Age	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Payroll
Under 20	8							8	\$ 157,227
20-24	439	7						446	10,831,679
25-29	711	170	5					886	25,917,356
30-34	732	386	106	1				1,225	40,992,890
35-39	634	433	256	124	4			1,451	52,483,621
40-44	606	497	297	292	165	16		1,873	68,973,844
45-49	556	443	264	310	271	211	13	2,068	79,417,008
50-54	435	367	260	265	239	261	103	1,930	78,321,785
55-59	359	278	189	187	182	146	125	1,466	57,298,880
60	55	49	43	35	26	21	31	260	9,681,978
61	57	40	28	24	30	9	17	205	7,626,554
62	49	33	30	26	11	13	19	181	6,363,480
63	30	19	13	12	10	12	12	108	4,024,359
64	18	21	15	10	6	4	9	83	3,113,924
65	20	23	16	15	7	2	8	91	2,715,195
66	19	16	7	6	5	3	1	57	2,192,551
67	12	15	13	4	3	4	2	53	1,625,146
68	5	10	2	6	2	1	3	29	1,051,671
69	3	8	4	3	3	1	0	22	919,904
70 & Over	28	29	20	22	5	6	4	114	3,483,580
Totals	4,776	2,844	1,568	1,342	969	710	347	12,556	\$457,192,632

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

Age: 44.9 years Service: 10.2 years Annual Pay: \$36,412

#### GENERAL MEMBERS WOMEN Active Members February 29, 2004 By Attained Age and Years of Service

		Years	of Servi	ice to Va	aluation	Date		Totals		
Attained									Valuation	
Age	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Payroll	
Under 20	3							3	\$ 30,173	
20-24	278	4						282	5,896,751	
25-29	605	110	2					717	18,608,500	
30-34	596	318	80	3				997	28,667,058	
35-39	554	333	144	60	2			1,093	31,916,167	
40-44	627	386	190	153	67	8		1,431	42,855,401	
45-49	596	462	242	170	110	79	5	1,664	50,938,920	
50-54	464	367	276	161	95	76	31	1,470	44,877,831	
55-59	316	277	199	164	95	76	41	1,168	35,104,780	
60	49	44	28	22	25	12	7	187	5,407,663	
61	36	47	29	32	17	8	9	178	4,981,739	
62	24	29	19	25	9	9	12	127	3,795,757	
63	13	39	20	16	14	5	5	112	3,140,898	
64	25	22	10	8	7	5	3	80	2,254,624	
65	8	10	5	11	9	3	3	49	1,427,253	
66	11	14	7	3	3	5	3	46	1,273,748	
67	10	6	8	2	1	2	3	32	756,955	
68	6	10	8	5	3	0	5	37	1,156,921	
69	2	5	7	7	6	0	3	30	856,944	
70 & Over	11	8	18	6	4	6	9	62	1,400,640	
Totals	4,234	2,491	1,292	848	467	294	139	9,765	\$285,348,723	

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

Age: 45.0 years Service: 8.4 years Annual Pay: \$29,222

#### POLICE Active Members February 29, 2004 By Attained Age and Years of Service

		Year	s of Ser	vice to	Valuatio	n Date			Totals
Attained									Valuation
Age	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Payroll
20-24	182	0						182	\$ 4,863,615
25-29	663	123	0					786	24,445,060
30-34	605	427	50	0				1,082	37,424,834
35-39	306	264	189	49	1			809	29,671,630
40-44	160	122	108	147	22	0		559	22,230,167
45-49	120	104	110	132	106	42	0	614	25,729,057
50-54	90	75	65	82	66	89	20	487	21,136,739
55-59	86	47	54	58	36	38	30	349	14,028,512
60	12	9	5	5	2	0	6	39	1,536,973
61	8	10	8	8	7	1	2	44	1,608,506
62	4	7	2	4	1	0	3	21	854,873
63	0	6	2	3	1	2	1	15	588,580
64	3	4	3	3	1	3	3	20	843,273
65	2	5	8	0	2	0	0	17	548,265
66	2	1	1	0	2	1	1	8	312,184
67	1	1	0	0	0	0	0	2	47,305
68	1	1	1	2	0	0	0	5	120,960
69	1	3	0	1	0	1	0	6	183,490
70 & Over	0	0	4	0	0	0	0	4	108,623
Totals	2,246	1,209	610	494	247	177	66	5,049	\$186,282,646

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

Age: 39.4 years Service: 8.4 years Annual Pay: \$36,895

#### FIRE Active Members February 29, 2004 By Attained Age and Years of Service

		Years	of Serv	ice to V	aluation	n Date			Totals
Attained									Valuation
Age	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Payroll
20-24	39	0						39	\$ 1,191,833
25-29	107	29	0					136	4,678,725
30-34	141	117	21	0				279	10,724,131
35-39	57	89	64	25	0			235	10,126,383
40-44	24	36	59	75	20	0		214	9,834,755
45-49	18	18	26	57	71	26	1	217	10,370,436
50-54	5	9	12	26	38	58	19	167	8,460,553
55-59	5	3	4	6	10	26	28	82	4,156,461
60	1	1	0	0	1	2	0	5	259,183
61	0	0	1	0	0	2	4	7	377,572
62	0	0	0	0	0	0	1	1	50,705
63	0	0	1	0	1	0	0	2	91,790
64	0	1	1	1	0	0	1	4	203,004
65	0	0	0	0	0	1	0	1	30,768
68	1	0	0	0	0	0	0	1	25,114
70 & Over	0	1	0	0	0	0	0	1	40,644
Totals	398	304	189	190	141	115	54	1,391	\$60,622,057

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: 12.1 years Annual Pay: \$43,582

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

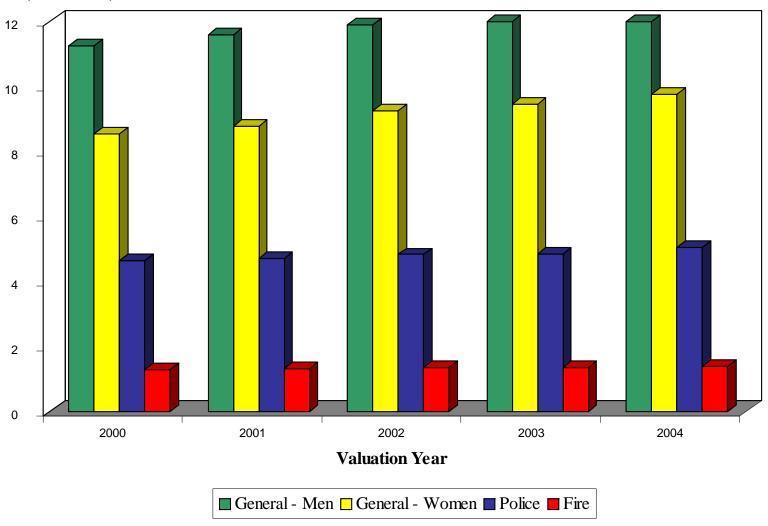
	Numbe	r of		Active Men	nbers		
Valuation Date	Participating Employers	Valuation Groups	Number	Annual Payroll	Average Pay	% Increase	Inflation Increase % (C.P.I.)
2-28-95	376	655	21,984	\$534,173,422	\$24,298	2.6%	2.9%
2-29-96	384	665	23,000	581,120,176	25,266	4.0	2.7
2-28-97	398	686	23,924	627,184,823	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
2-29-04	499	828	28,761	989,446,058	34,402	2.5	1.7
			10 Y	ear Compound Ave	rage	3.8	2.4

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

				Group Averages				
	Valuation	No. of	Comple	ted Years	Annual I	Payroll	Increase %	
Employee Type	at 2-28	Members	Age	Service	Average	Change	(C.P.I)	
General - Men	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	+3.0	
	2004	12,556	44.9	10.2	36,412	+1.9	+1.7	
General - Women	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	+3.0	
	2004	9,765	45.0	8.4	29,222	+3.6	+1.7	
Police	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	+3.0	
	2004	5,049	39.4	8.4	36,895	+3.0	+1.7	
Fire	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	+3.0	
	2004	1,391	40.4	12.1	43,582	+1.7	+1.7	

### Missouri LAGERS Active Members 2000 - 2004

#### **Members (Thousands)**



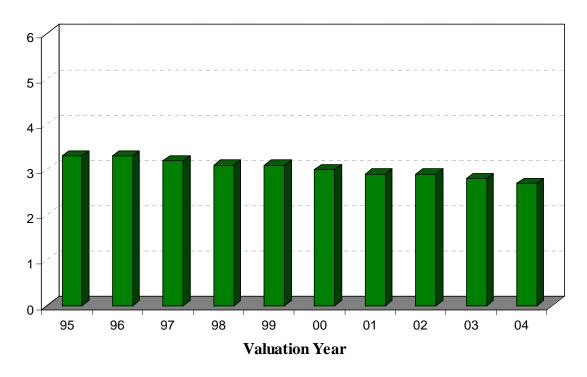
#### Retirants and Beneficiaries Added to and Removed from Rolls 10 Year Comparative Statement

	Ad	dded to Rolls Re		Added to Rolls		oved from Rolls	Rolls	End of Year	_			s in Relation Members
Year Ended	No.	Annual Allowances*	No.	Annual Allowances	No.	Annual Allowances	% Incr. in Annual Allowances	Average Annual Allowances	Active Member Per Benefit Recipient	s Allowances as Percents of Active Payroll		
2-28-95	712	\$5,075,916	282	\$ 1,197,176	6,634	\$28,599,681	15.7%	\$4,311	3.3	5.4%		
2-29-96	653	4,764,570	246	1,022,382	7,041	32,341,869	13.1	4,593	3.3	5.6		
2-28-97	695	5,656,604	275	1,239,056	7,461	36,759,417	13.7	4,927	3.2	5.9		
2-28-98	741	6,251,387	315	1,411,336	7,887	41,599,468	13.2	5,274	3.1	6.2		
2-28-99	748	6,620,521	339	1,854,143	8,296	46,365,846	11.5	5,589	3.1	6.5		
2-29-00	769	7,394,519	371	1,839,075	8,694	51,921,290	12.0	5,972	3.0	6.9		
2-28-01	816	8,094,550	330	2,026,823	9,180	57,989,017	11.7	6,317	2.9	7.2		
2-28-02	806	9,203,832	385	2,191,355	9,601	65,001,494	12.1	6,770	2.9	7.4		
2-28-03	870	9,313,332	364	2,545,321	10,107	71,769,505	10.4	7,101	2.8	7.7		
2-29-04	898	10,540,515	399	2,844,252	10,606	79,465,768	10.7	7,493	2.7	8.0		

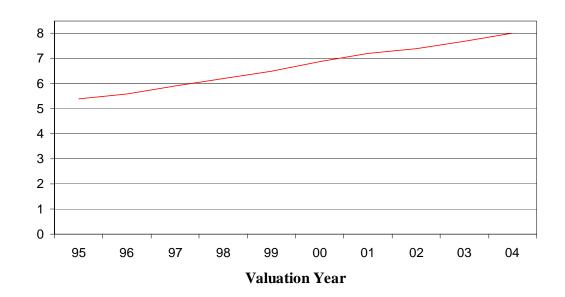
<sup>\*</sup> Includes post-retirement adjustments.

#### Retirants and Beneficiaries Comparative Data

### **Active Members Per Benefit Recipient**

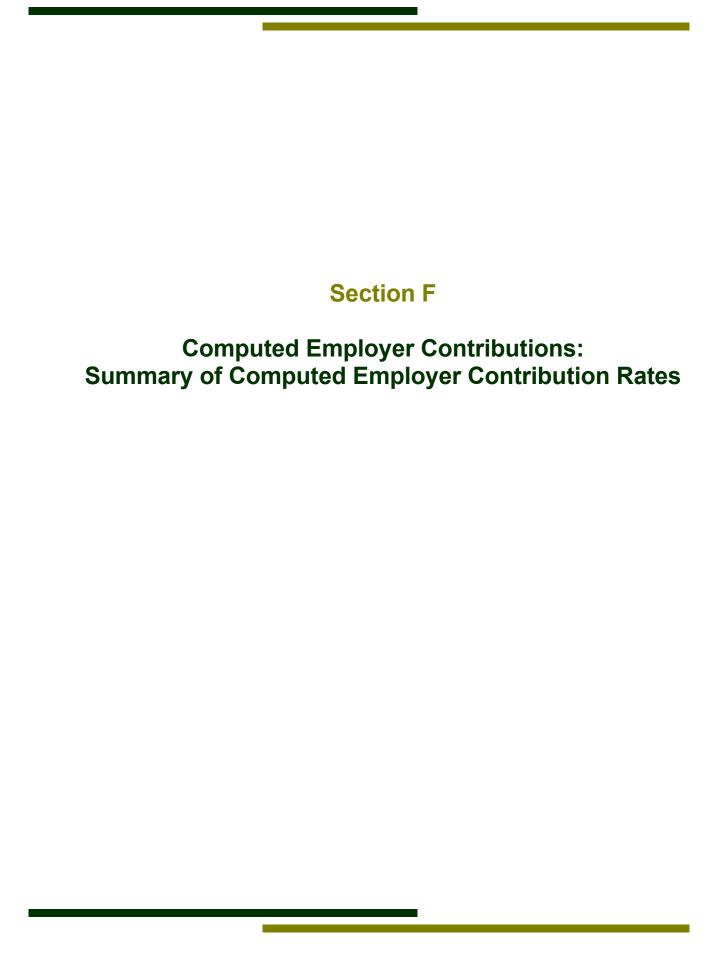


### Allowances as % of Active Pay



### Retirants and Beneficiaries on Rolls February 29, 2004 By Disbursing Fund and Type of Benefit Being Paid

Type of Benefit	Number	Annual Allowances
Service Early & Deferred		
Life Option	4,965	\$36,218,970
Option A	1,439	12,550,700
Option B	963	11,547,342
Option C	884	5,931,962
Beneficiary Receiving	853	3,671,038
Totals	9,104	69,920,012
Duty Disability		
Life Option	228	2,727,312
Option A	84	823,192
Option B	38	405,095
Option C	24	237,545
Totals	374	4,193,144
Non-Duty Disability		
Life Option	218	1,311,930
Option A	90	519,750
Option B	42	339,969
Option C	49	326,100
Totals	399	2,497,749
Beneficiary receiving	160	660,480
Total Disability	933	7,351,373
Death-In-Service		
Spouse Receiving	535	2,133,002
Children Receiving	34	61,381
Totals	569	2,194,383
Totals	10,606	\$79,465,768



	Number of		Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll								
Group	Active Members	Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals		
					Benefit l	Program I					
General:	1-9	4	2	6	6	2	2	1	23		
	10-49	8	2	5	2	2			19		
	50 & up			<u>1</u>		$\frac{1}{5}$			<u>2</u>		
	Totals	12	4	12	8	5	2	1	44		
Police:	1-9	4	2	7	1	2		1	17		
	10-49	4	2			1			7		
	50 & up										
	Totals	8	4	7	1	3		1	24		
Fire:	1-9	1		1					2		
	10-49	2							2		
	50 & up										
	Totals	3		1					4		
Totals:		23	8	20	9	8	2	2	72		
					Benefit l	Program I	<b>L-3</b>				
General:	1-9	6		3	1	1	2		13		
	10-49	4	1	2	3	2			12		
	50 & up	<u>3</u>	<u>3</u>						<u>6</u>		
	Totals	13	4	5	4	3	2		31		
Police:	1-9	4	2	1				1	8		
	10-49	7			1	1			9		
	50 & up										
	Totals	11	2	1	1	1		1	17		
Fire:	1-9		1						1		
	10-49	2							2		
	50 & up										
	Totals	2	1						3		
Totals		26	7	6	5	4	2	1	51		

<sup>\*</sup> Dollar contribution rates for groups presently without active members.

(Continued)

	Number of						ated Comp Active M		
	Active	Under	5.00%	7.00%		11.00%			
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals
				Bene	fit Progra	m LT-4 (	62 or 65)		
General:	1-9								
	10-49					1			1
	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
				Bene	fit Progra	ım LT-5 (	62 or 65)		
General:	1-9			2			-		2
	10-49			1		1			2
	50 & up		<u>1</u>	1		$\frac{2}{3}$			$\frac{2}{\frac{4}{8}}$
	Totals		1 1	$\frac{1}{4}$		3			8
Police:	1-9	1					•	•	1
	10-49			3					3
	50 & up								
	Totals	1		3					4
Fire:	1-9								
	10-49				1		1		2
	50 & up								
	Totals				1		1		2
Totals		1	1	7	1	3	1		14

<sup>\*</sup> 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 14 LT-5 benefit programs, 1 is LT-5(62) and 13 are LT-5(65).

(Continued)

	Number of		Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll								
Group	Active Members	Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%		Totals		
					Benefit P	rogram L-	6				
General:	1-9	1					2		3		
	10-49						3		3		
	50 & up					2	2		<u>4</u>		
	Totals	1				$\frac{2}{2}$	$\frac{2}{7}$		10		
Police:	1-9										
	10-49	1			1		3		5		
	50 & up						$\frac{2}{5}$		<u>2</u>		
	Totals	1			1		5		<u>2</u> 7		
Fire:	1-9						1		1		
	10-49										
	50 & up						$\frac{2}{3}$		<u>2</u> 3		
	Totals						3		3		
Totals:		2			1	2	15		20		
					Benefit P	rogram L-	7				
General:	1-9	1		1	1	1	3		7		
	10-49	3	1	2	6	2	5		19		
	50 & up	<u>1</u>	<u>1</u>	$\frac{5}{8}$		$\frac{2}{5}$			<u>9</u>		
	Totals	5	2	8	7	5	8		35		
Police:	1-9	3		2	2	1	2		10		
	10-49	4	1	4	1	3			13		
	50 & up										
	Totals	7	1	6	3	4	2		23		
Fire:	1-9										
	10-49	2		1					3		
	50 & up										
	Totals	2	_	1		_			3		
Totals		14	3	15	10	9	10		61		

 $<sup>*</sup>Dollar\ contribution\ rates\ for\ groups\ presently\ without\ active\ members.$ 

(Continued)

	Number of		Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll								
	Active	Under	5.00%	7.00%		11.00%		CHIDCI I a	yıon		
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals		
Отопр	Wichibers	3.00 / 0	-0.2270		t Progran			Other	Totals		
			<u> </u>	Dellell	t i iogian		<u> </u>				
General:	1-9	1				1	1		3		
	10-49					1	1		2		
	50 & up		<u>1</u>	<u>1</u>	$\frac{3}{3}$		$\frac{1}{3}$		<u>6</u>		
	Totals	1	1	1		2	3		11		
Police:	1-9				1		1		2		
	10-49	1		1					2		
	50 & up				$\frac{1}{2}$				1 5		
	Totals	1		1	2		1		5		
Fire:	1-9						1		1		
	10-49			1		2			3		
	50 & up										
	Totals			1		2	1		4		
Totals:		2	1	3	5	4	5		20		
				I	Benefit Pr	ogram L	.9	-			
General:	1-9	2							2		
	10-49					2	2		4		
	50 & up										
	Totals	2				2	2		6		
Police:	1-9	1							1		
	10-49	1		1					2		
	50 & up										
	Totals	2		1					3		
Fire:	1-9		-		-				-		
	10-49					1			1		
	50 & up										
	Totals					1			1		
Totals		4		1		3	2		10		

<sup>\*</sup> Dollar contribution rates for groups presently without active members.

The above totals include both the LT(62) and LT(65) benefit programs. Of the 20 LT-8 benefit programs, 6 are LT-8(62) and 14 are LT-8(65).

(Concluded)

			Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
	Number of	C	<u>ontributio</u>	ns Expres		rcents of	Active M	ember Pa	vroll	
	Active	Under	5.00%	7.00%	9.00%	11.00%	Over			
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals	
				Ben	efit Progr	am LT-1	0(65)			
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	
				В	enefit Pro	ogram L-	 11			
General:	1-9		-			Ī		<u> </u>		
	10-49									
	50 & up									
	Totals								0	
Police:	1-9		-					<u>.</u>		
	10-49									
	50 & up									
	Totals							<u>-</u>	0	
Fire:	1-9									
	10-49									
	50 & up									
	Totals								0	
Totals:									0	

<sup>\*</sup>Dollar contribution rates for groups presently without active members.

		Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll								
	Number of							ember Pa	yroll	
	Active	Under	5.00%	7.00%	9.00%	11.00%	Over			
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals	
				I	Benefit Pr	ogram L-	1			
General:	1-9	12	9	5	1		2	1	30	
	10-49	11	3						14	
	50 & up	<u>1</u>						_	<u>1</u>	
	Totals	24	12	5	1		2	1	45	
Police:	1-9	13	1	2	2			2	20	
	10-49	2	1						3	
	50 & up							_		
	Totals	15	2	2	2			2	23	
Fire:	1-9									
	10-49									
	50 & up									
	Totals								0	
Totals:		39	14	7	3		2	3	68	
				I	Benefit Pr	ogram L-:	3			
General:	1-9	2	1	6	1	3	1		14	
	10-49	5	2	3					10	
	50 & up	$\frac{2}{9}$							2	
	Totals	9	3	9	1	3	1		$\frac{2}{26}$	
Police:	1-9	5		1				2	8	
	10-49	3	1						4	
	50 & up							_		
	Totals	8	1	1				2	12	
Fire:	1-9	1	1				1	1	4	
	10-49									
	50 & up									
	Totals	1	1				1	1	4	
Totals		18	5	10	1	3	2	3	42	

<sup>\*</sup>Dollar contribution rates for groups presently without active members.

(Continued)

		II .			_			puted Em	-
	Number of				1			1ember Pa	ayroll
	Active	Under	5.00%	7.00%	9.00%	11.00%	Over		
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals
				Benef	fit Progra	am LT-4 (	(62 or 65)		
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
				Bene	fit Progra	am LT-5 (	(62 or 65)		
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

<sup>\*</sup> Dollar contribution rates for groups presently without active members.

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

(Continued)

				aluation (	_		_	_	•
	Number of Active	Under	ntribution 5.00%	s Express 7.00%	9.00%	11.00%	Over	ember Pav	roll
Croun	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals
Group	Members	3.00 76	-0.99 70			<u> </u>		Other.	Totals
		-	· · · · · · · · · · · · · · · · · · ·	B	enefit Pro	ogram L-6	) 	, ,	
General:	1-9								
	10-49			1		1			2
	50 & up		<u>1</u> 1	$\frac{1}{2}$					<u>2</u> 4
	Totals		1	2		1			4
Police:	1-9								
	10-49	1							1
	50 & up				<u>1</u> 1				$\frac{1}{2}$
	Totals	1			1				2
Fire:	1-9								
	10-49								
	50 & up								
	Totals								0
Totals:		1	1	2	1	1			6
		,		В	enefit Pro	ogram L-7	,		
General:	1-9	2	1	•	-		2	-	5
	10-49	5	1	1	1				8
	50 & up								
	Totals	7	2	1	1		2		13
Police:	1-9	6			1				7
	10-49				1				1
	50 & up								
	Totals	6			2				8
Fire:	1-9			1					1
	10-49								
	50 & up								
	Totals			1					1
Totals	_	13	2	2	3		2		22

<sup>\*</sup> Dollar contribution rates for groups presently without active members.

(Continued)

		Nur	Number of Valuation Groups with Indicated Computed Employer								
	Number of	Cor	ntribution	s Express	sed as Pe	rcents of	Active M	lember P	ayroll		
	Active	Under	5.00%	7.00%	9.00%	11.00%	Over				
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals		
				Benefit	Progran	n LT-8 (62	2 or 65)				
General:	1-9			1					1		
	10-49	1		1					2		
	50 & up										
	Totals	1		2					3 2		
Police:	1-9	2							2		
	10-49										
	50 & up										
	Totals	2							2		
Fire:	1-9			-							
	10-49										
	50 & up										
	Totals								0		
Totals:		3		2		_	_		5		
				В	enefit Pr	ogram L-	9				
General:	1-9	1		1			1		3		
	10-49	3							3		
	50 & up			<u>1</u>					$\frac{1}{7}$		
	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		

<sup>\*</sup> 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-8 benefit programs, 2 are LT-8(62) and 3 are LT-8(65).

(Concluded)

			umber of V						
	Number of		<u>ontributio</u>					ember Pa	vroll
	Active	Under	5.00%	7.00%		11.00%			
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals
				Ben	efit Progr	am LT-1	0(65)		
General:	1-9								
	10-49				1				1
	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
				В	enefit Pro	ogram L-	11		
General:	1-9					Ī			
	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

<sup>\*</sup> Dollar contribution rates for groups presently without active members.

	Number of					ith Indicat			
	Active	Under	5.00%	7.00%	9.00%	11.00%	Over	ciliber i a	yıon
Group								041*	TD - 4 - 1 -
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals
		T			Benefit Pr	ogram L-1	[		
General:	1-9	1		2	2		1		6
	10-49	2	2		2	1			7
	50 & up								
	Totals	3	2	2	4	1	1		13
Police:	1-9	3	1	2	1	1			8
	10-49								
	50 & up								
	Totals	3	1	2	1	1			8
Fire:	1-9	-	1				1		2
	10-49								
	50 & up								
	Totals		1				1		2
Totals:		6	4	4	5	2	2		23
				I	Benefit Pr	ogram L-3	3		
General:	1-9	3					3		6
	10-49	2	2		1		1		6
	50 & up	<u>1</u>	2						<u>3</u>
	Totals	6	$\frac{2}{4}$		1		4		15
Police:	1-9	1	1	1	-				3
	10-49	3		1					4
	50 & up								
	Totals	4	1	2					7
Fire:	1-9								
	10-49	2							2
	50 & up								
	Totals	2							2
Totals		12	5	2	1		4		24

<sup>\*</sup> Dollar contribution rates for groups presently without active members.

(Continued)

			Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll								
	Number of							mber Pay	yroll		
	Active	Under	5.00%	7.00%	9.00%	11.00%	Over				
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals		
				Benefit	Program	LT-4 (62	or 65)				
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		
	•			Benefit	Program	LT-5 (62	or 65)	-			
General:	1-9						1		1		
	10-49		1	1	1				3		
	50 & up	1							1		
	Totals	$\frac{1}{1}$	1	1	1		1		$\frac{1}{5}$		
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		

<sup>\*</sup> 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).

(Continued)

	Number of		Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
Group	Active Members	Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99	Over 12.99%	Other*	Totals	
				В	enefit Pr	ogram L-6	5			
General:	1-9		1	•			4		5	
	10-49			2		2	3		7	
	50 & up						<u>12</u>		<u>12</u>	
	Totals		1	2		2	19		24	
Police:	1-9	1					1		2	
	10-49	1			1	2	3		7	
	50 & up						<u>3</u> 7		<u>3</u> 12	
	Totals	2			1	2	7		12	
Fire:	1-9						1	1	2	
	10-49						2		2	
	50 & up						<u>1</u>		_1	
	Totals						4	1	5	
Totals:		2	1	2	1	4	30	1	41	
				В	Senefit Pro	ogram L-7	7			
General:	1-9			2	1	1	9	3	16	
	10-49	5	5	4	6	5	2		27	
	50 & up	<u>3</u>	<u>1</u>	<u>6</u>	<u>8</u>	$\frac{2}{8}$			20	
	Totals	8	6	12	15	8	11	3	63	
Police:	1-9	3		1	1			1	6	
	10-49	6	1	4	5	3			19	
	50 & up			<u>3</u> 8	1				4	
	Totals	9	1	8	$\frac{1}{7}$	3		1	29	
Fire:	1-9	1				1			2	
	10-49	1			1		2		4	
	50 & up									
	Totals	2			1	1	2		6	
Totals		19	7	20	23	12	13	4	98	

<sup>\*</sup> Dollar contribution rates for groups presently without active members.

(Continued)

			Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll								
	Number of					1		Iember I	Payroll		
	Active	Under	5.00%	7.00%		11.00%					
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals		
				Benefit	Program	LT-8 (62	2 or 65)				
General:	1-9						1		1		
	10-49	1	1	1	2	2	3		10		
	50 & up	<u>1</u>	<u>1</u>	<u>5</u> 6	$\frac{3}{5}$	2	<u>1</u>		<u>13</u>		
	Totals	$\frac{1}{2}$	$\frac{1}{2}$	6	5	$\frac{2}{4}$	$\frac{1}{5}$		24		
Police:	1-9					1	3	1	5		
	10-49	2	2	2		1			7		
	50 & up		2	<u>1</u>	<u>1</u>	1			<u>5</u> 17		
	Totals	2	4	$\frac{1}{3}$	1	3	3	1	17		
Fire:	1-9		1	-	-				1		
	10-49	1	1		2		1		5		
	50 & up				1	<u>1</u>	<u>1</u>		<u>3</u> 9		
	Totals	1	2		$\frac{1}{3}$	1	$\frac{\overline{}}{2}$		9		
Totals:		5	8	9	9	8	10	1	50		
				R	enefit Pr	ogram L-	0				
General:	1-9					ogram L-,	2		3		
General.	10-49			3	1	3	_		6		
	50 & up	1			2						
	Totals	1 1		3	$\frac{2}{3}$	$\frac{2}{5}$	2		<u>5</u> 14		
Police:	1-9			1	2	3		-	6		
	10-49	2	2						4		
	50 & up					1			<u>1</u>		
	Totals	2	2	1	2	$\frac{1}{4}$			<u> </u>		
Fire:	1-9	1							1		
	10-49			1					1		
	50 & up										
	Totals	1		1					2		
Totals		4	2	5	5	9	2		27		

<sup>\*</sup> Dollar contribution rates for groups presently without active members.

The above totals include both the LT(62) and LT(65) benefit programs. Of the 50 LT-8 benefit programs, 4 are LT-8(62) and 46 are LT-8(65).

(Concluded)

			Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
	Number of							<u>lember Pa</u>	yroll	
	Active	Under	5.00%	7.00%	9.00%	11.00%				
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals	
				Ben	efit Progr	am LT-1	0(65)			
General:	1-9						2		2	
	10-49		1	1	2	1	1		6	
	50 & up		<u>1</u>	<u>1</u>		<u>3</u>			<u>5</u>	
	Totals		$\frac{1}{2}$	2	2	4	3		13	
Police:	1-9	2						,	2	
	10-49	1		2	2	2			7	
	50 & up									
	Totals	3		2	2	2			9	
Fire:	1-9	1			1		1		3	
	10-49					1	1		2	
	50 & up									
	Totals	1			1	1	2		5	
Totals:		4	2	4	5	7	5		27	
				R	enefit Pro	ogram I -	11			
General:	1-9						1		1	
Octiciai.	10-49						1		1	
	50 & up									
	Totals						<u></u> 1		<u></u> 1	
Police:	1-9									
	10-49									
	50 & up									
	Totals								0	
Fire:	1-9									
	10-49									
	50 & up									
	Totals								0	
Totals:							1		1	

<sup>\*</sup> Dollar contribution rates for groups presently without active members.

			Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll								
	Number of							lember Pa	yroll		
	Active	Under	5.00%	7.00%	9.00%	11.00%	Over				
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals		
				I	Benefit P	rogram L	-1				
General:	1-9	5	2	5	1			2	15		
	10-49		2	1	1				4		
	50 & up										
	Totals	5	4	6	2			2	19		
Police:	1-9	2	2	1					5		
	10-49	1	1						2		
	50 & up										
	Totals	3	3	1					7		
Fire:	1-9										
	10-49										
	50 & up										
	Totals								0		
Totals:		8	7	7	2			2	26		
	•			I	Benefit P	rogram L	-3				
General:	1-9	2	2	1	1	1			7		
	10-49	8	1	1					10		
	50 & up	<u>1</u>							<u>1</u>		
	Totals	11	3	2	1	1			18		
Police:	1-9	1		1					2		
	10-49	3							3		
	50 & up										
	Totals	4		1					5		
Fire:	1-9			1					1		
	10-49										
	50 & up										
	Totals			1					1		
Totals		15	3	4	1	1			24		

 $<sup>*</sup>Dollar\ contribution\ rates\ for\ groups\ presently\ without\ active\ members.$ 

(Continued)

			Number of Valuation Groups with Indicated Computed Employer						
	Number of					1	Active M	ember Pa	yroll
	Active	Under	5.00%	7.00%	9.00%	11.00%	Over		
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals
		<u>-</u>		Benefi	t Progran	n LT-4 (62	2 or 65)		
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
		<del>!                                    </del>		Benefi	t Progran	n LT-5 (62	2 or 65)		
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	2		1		1		5

<sup>\*</sup> 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).

(Continued)

		Nur	Number of Valuation Groups with Indicated Computed Employer						
	Number of	Cor	ntributions	<b>Express</b>	ed as Per	cents of A	Active Me	ember Pa	yroll
	Active	Under	5.00%	7.00%	9.00%	11.00%	Over		
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals
		<del>'</del>		В	enefit Pro	gram L-6			-
General:	1-9		1			1	1	2	5
	10-49	3				1			4
	50 & up	<u>1</u>		<u>1</u>	<u>1</u>	$\frac{1}{3}$	<u>1</u>		<u>5</u>
	Totals	4	1	1	1	3	$\frac{1}{2}$	2	14
Police:	1-9	2	1	1					4
	10-49	2	1	1					4
	50 & up					$\frac{1}{1}$			<u>1</u>
	Totals	4	2	2		1			9
Fire:	1-9								
	10-49								
	50 & up								
	Totals								0
Totals:		8	3	3	1	4	2	2	23
				В	enefit Pro	gram L-7			
General:	1-9	4	4	-	1	1	3		13
	10-49	3	3	3	1	1			11
	50 & up	<u>4</u>							<u>4</u>
	Totals	11	7	3	2	2	3		28
Police:	1-9	2	1	2					5
	10-49	5							5
	50 & up		<u>1</u>						<u>1</u>
	Totals	7	2	2					11
Fire:	1-9	-					1	2	3
	10-49								
	50 & up								
	Totals						1	2	3
Totals		18	9	5	2	2	4	2	42

<sup>\*</sup> Dollar contribution rates for groups presently without active members.

(Continued)

			Number of Valuation Groups with Indicated Computed Employer						
	Number of	Co	ntribution	is Express	sed as Per	rcents of A	Active Me	mber Pay	roll
	Active	Under	5.00%	7.00%	9.00%	11.00%	Over		
Group	Members	5.00%	-6.99%	-8.99%	-10.99	-12.99	12.99%	Other*	Totals
				Benefit	Program	LT-8 (62	or 65)		
General:	1-9				1				1
	10-49								
	50 & up	$\frac{2}{2}$							<u>2</u>
	Totals	2			1				$\frac{2}{3}$
Police:	1-9	-	-	-		1			1
	10-49	1							1
	50 & up								
	Totals	1				1			2
Fire:	1-9								
	10-49								
	50 & up								
	Totals								0
Totals:		3			1	1			5
				В	enefit Pro	ogram L-9			
General:	1-9								
	10-49	4							4
	50 & up	1	<u>1</u>		<u>1</u>				3
	Totals	<u>1</u> 5	1		1				$\frac{3}{7}$
Police:	1-9	1				-		1	2
	10-49	2	1						3
	50 & up								
	Totals	3	1					1	5
Fire:	1-9								
	10-49			1					1
	50 & up								
	Totals			1					1
Totals		8	2	1	1			1	13

<sup>\*</sup> 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-8 benefit programs, 4 are LT-8(62) and 1 is LT-8(65).

(Concluded)

	Number of		Number of Valuation Groups with Indicated Computed Employer Contributions Expressed as Percents of Active Member Payroll							
Group	Active Members	Under 5.00%	5.00% -6.99%	7.00% -8.99%	9.00% -10.99	11.00% -12.99		Other*	Totals	
	<u> </u>		Benefit Program LT-10(65)							
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	
				R	enefit Pr	ogram I .	11			
General:	1-9	<u> </u>		<u>-</u>						
	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	

st Dollar contribution rates for groups presently without active members.

### **Section G**

**Appendix** 

# 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 G-4 and G-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 G-3. Adopted 2001.

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

The probabilities of withdrawal from service and death in service are shown for sample ages on pages G-4 and G-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, respectively.

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.

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)

	Monthly	alue of \$1.00 Increasing Life		re Life ncy (years)
Sample Attained Ages	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

	With	out Rule	of 80 Elig	ibility	Witl	n Rule of 8	80 Eligib	ility
	Ge	neral*			Gei	neral		
Ages	Men	Women	Police*	Fire*	Men	Women	Police	Fire
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		

<sup>\*</sup> 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

		Percent of Active Members Separating		Pay Increase Assumptions for an Individual Employee			
Sample	Years of Service	within the	Next Year	Merit &	Base	Increase	
Ages		Death	Other	Seniority	(Economy)	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

		Percent of Active Members Separating		Pay Increase Assumptions for an Individual Employee			
Sample	Years of	within the	Next Year	Merit &	Base	Increase	
Ages	Service	Death	Other	Seniority	(Economy)	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

		Percent of Active Members Separating within the Next Year		Pay Increase Assumptions for an Individual Employee			
Sample	Years of Service			Merit &	Base	Increase	
Ages		Death	Other	Seniority	(Economy)	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

	Perce Active Membe		Pay Increase Assumptions for an Individual Employee				
Sample	within the	Next Year	Merit &	Base	Increase		
Ages	Death	Other	Seniority	(Economy)	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		

#### **LAGERS Retainer Actuarial Fees 10 Year Comparative Statement**

AVERAGE FEE PER GROUP

				A VERAGE FEE I ER GROUI		
Valuation Date As of	Number of Valuation Groups	Annual Actuarial Fees (nearest \$1)	Consumer Price Index (1967 is 100)	Unadjus te d Dollars	1967* Dollars	
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	
2/29/2004	828	188,812	557.9	228	41	

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.

#### September 2, 2004

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 6 copies of the *Compiled Report of the February 29, 2004 valuations* for the participating employers of the Missouri Local Government Employees Retirement System.

Individual copies have been Federal Expressed to each Board member as well as to the auditor.

Sincerely,

Mita D. Drazilov

MDD:JAK:rmg:kmg Enclosures

CC: Ms. Jamie Hamm, (KPMG Peat Marwick)
Board Members

## MISSOURI LOCAL GOVERNMENT EMPLOYEES RETIREMENT SYSTEM

**Compiled 36th Annual Actuarial Valuations As of February 29, 2004** 

GABRIEL, ROEDER, SMITH & COMPANY ACTUARIES • CONSULTANTS