

**Employees Retirement System of the City of St. Louis**  
*Actuarial Valuation and Review as of October 1, 2001*

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*The Segal Company  
101 North Wacker Drive, Suite 500  
Chicago, IL 60606  
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*January 22, 2002*

*Board of Trustees  
Employees Retirement System of the City of St. Louis  
1300 Convention Plaza Drive Suite 217  
St. Louis, MO 63103*

*Dear Board Members:*

*We are pleased to submit this Actuarial Valuation and Review as of October 1, 2001. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the period ending September 30, 2002 and analyzes the preceding year's experience.*


*The census information on which our calculations were based was prepared by the Plan and the financial information was provided by the Auditor. That assistance is gratefully acknowledged.*

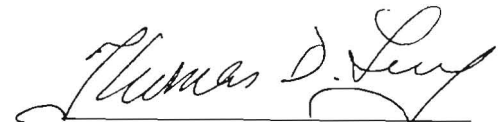
*This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.*

*We look forward to reviewing this report at your next meeting and to answering any questions.*

*Sincerely,*

*THE SEGAL COMPANY*

By:   
*Lall Bachan, A.S.A., M.A.A.A., E.A.  
Senior Vice President and Actuary*

  
*Thomas D. Levy, F.S.A., M.A.A.A., E.A.  
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## SECTION 1: Valuation Summary for the Employees Retirement System of the City of St. Louis

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### Highlights:

- There was an actuarial loss from investments this year of over \$54,000,000. Primarily due to this investment loss, the recommended contribution increased from \$17,492,110 last year to \$24,269,937 this year.
- We suggest the contribution level to the fund be increased to the recommended contribution, consistent with the Ordinance.
- This year was the first plan year in which active participants could elect to participate in the DROP. As of October 1, 2001, 193 members are participating in the DROP. The retirement pattern of active participants may change due to the existence of the DROP. Once this pattern is known, we recommend changing the actuarial assumptions to reflect the retirement pattern.
- On February 23, 2000, the Board increased the assumed rate of return from 7.75% to 8.00%.



**SECTION 1: Valuation Summary for the Employees Retirement System of the City of St. Louis**

**Summary of Key Valuation Results**

	<b>Plan Year Beginning October 1,</b>	
	<b>2001</b>	<b>2000</b>
<b>Contributions:</b>		
Recommended	\$24,269,937	\$17,492,110
<b>Funding Elements:</b>		
Normal cost, including administrative expenses	\$15,831,675	\$16,046,317
Market value of assets	423,434,641	506,214,509
Actuarial value of assets	466,630,792	507,655,329
Actuarial accrued liability	542,547,374	515,673,757
Unfunded actuarial accrued liability	75,916,582	8,018,428
Present value of accrued benefit	454,385,064	433,737,732
<b>GASB 25/27:</b>		
Annual required contributions	\$24,269,937	\$17,492,110
Actual contributions	--	2,768,207
Percentage contributed	--	15.83%
Funded ratio	86.0%	98.4%
Covered payroll	216,527,124	204,696,581
<b>Demographic Data:</b>		
Number of retired participants & beneficiaries	3,848	3,882
Number of vested former participants	2,072	2,025
Number of active participants	5,980	5,948
Total compensation	\$216,527,124	\$204,696,581
Average compensation	36,209	34,414

**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

**A. PARTICIPANT DATA**

The Actuarial Valuation and Review considers the number and demographics of covered participants, including active participants, vested terminated participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A and B.

*A historical perspective of how the participant population has changed over the past ten valuations can be seen in this chart.*

**CHART 1**  
**Participant Population: 1992 – 2001**

<b>Year Ended September 30</b>	<b>Active Participants</b>	<b>Vested Terminated Participants*</b>	<b>Retired Participants and Beneficiaries</b>	<b>Ratio of Non-Actives to Actives</b>
1992	5,535	1,563	3,938	0.99
1993	5,672	1,538	3,989	0.97
1994	5,755	1,540	3,961	0.96
1995	5,844	1,591	3,931	0.94
1996	5,913	1,680	3,942	0.95
1997	5,928	1,728	3,950	0.96
1998	6,033	1,825	3,925	0.95
1999	5,947	1,942	3,861	0.98
2000	5,948	2,025	3,882	0.99
2001	5,980	2,072	3,848	0.99

\*Includes 41 rehires also included in active counts as of September 30, 2001.

**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

**Active Participants**

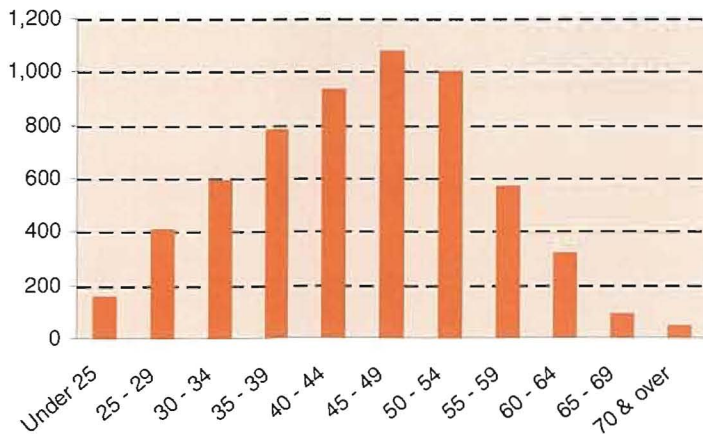
Plan costs are affected by the age, years of credited service and salary of active participants. In this year's valuation, there are 5,980 active participants (including 193 DROP participants) with an average age of 45.0, average years of credited service of 11.0 years and average salary of \$36,209. The 5,948 active participants in the prior valuation had an average age of 44.5, average service of 10.8 years and average salary of \$34,414.

**Inactive Participants**

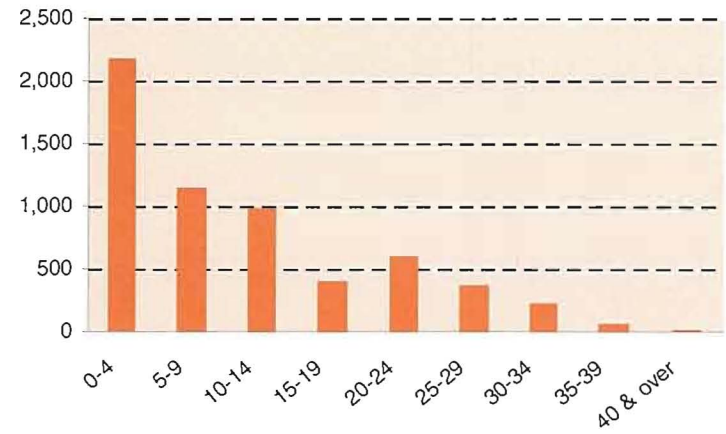
In this year's valuation, there were 2,072 participants with a vested right to a deferred or immediate vested benefit.

*These graphs show a distribution of active participants by age and by years of credited service.*

**CHART 2**  
**Distribution of Active Participants by Age as of September 30, 2001**



**CHART 3**  
**Distribution of Active Participants by Years of Credited Service as of September 30, 2001**



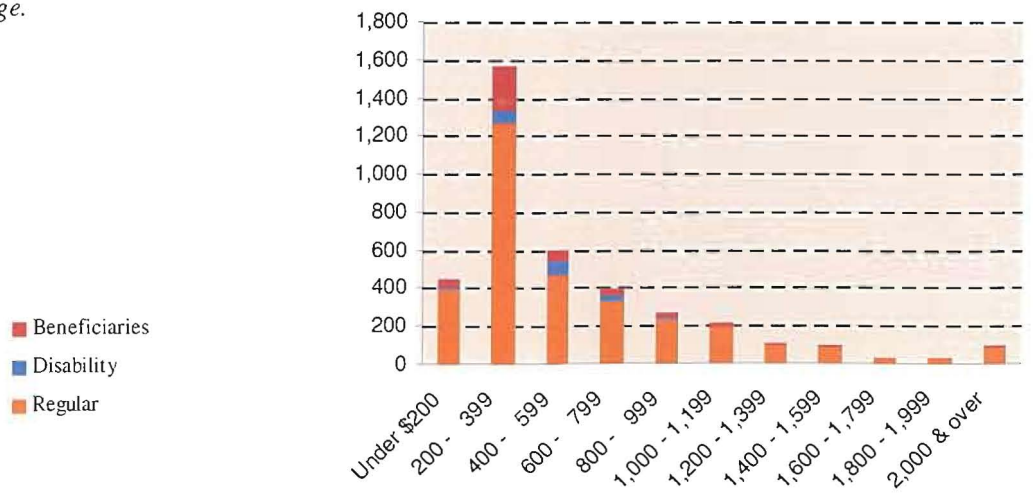
**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

**Retired Participants and Beneficiaries**

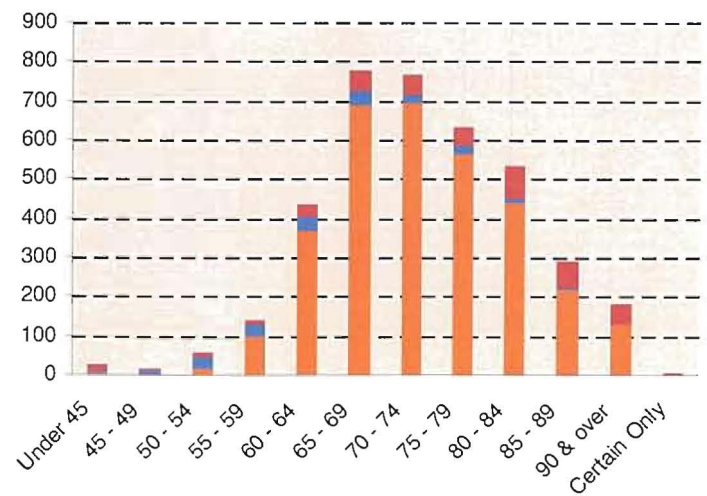
As of September 30, 2001, 3,423 retired participants and 425 beneficiaries (not including DROP participants) were receiving total monthly benefits of \$2,163,600. For comparison, in the previous valuation, there were 3,489 retired participants and 393 beneficiaries receiving monthly benefits of \$2,076,400.

*These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age.*

**CHART 4**  
**Distribution of Retired Participants and Beneficiaries by Monthly Amount as of September 30, 2001**



**CHART 5**  
**Distribution of Retired Participants and Beneficiaries by Age as of September 30, 2001**



**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

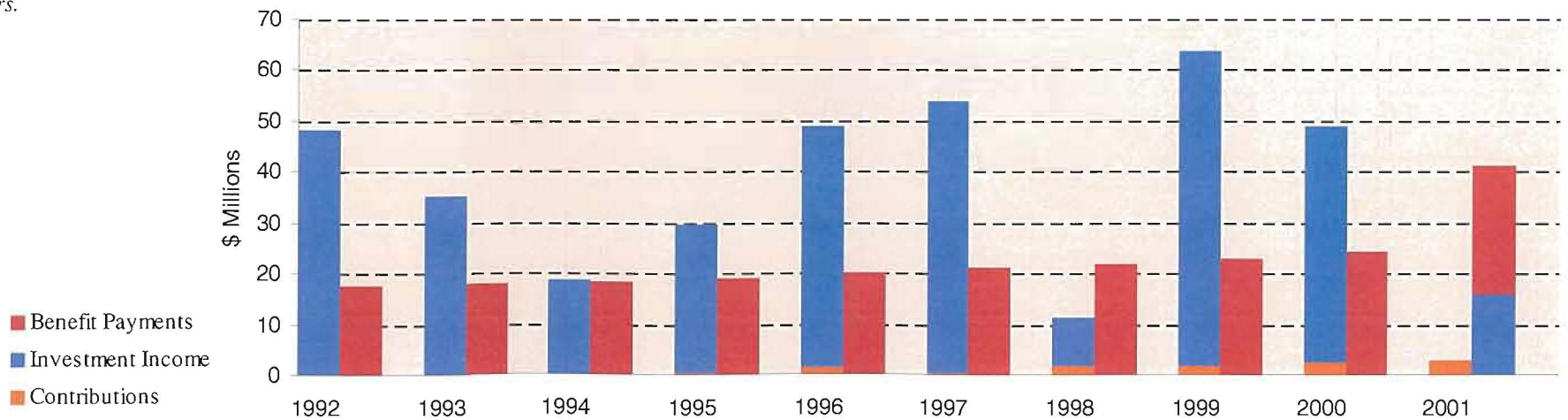
**B. FINANCIAL INFORMATION**

Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment fees and administration expenses) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C and D.

*The chart depicts the components of changes in the actuarial value of assets over the last ten years.*

**CHART 6**  
**Net Contributions and Investment Income on an Actuarial Basis Compared to Benefits Paid: 1992 – 2001**



**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that smooths market fluctuations. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

*The chart shows the determination of the actuarial value of assets as of the valuation date.*

**CHART 7**

**Determination of Actuarial Value of Assets for Year Ended September 30, 2001**

1. September 30, 1998		
A. Market Value	\$451,532,795	
B. Book Value	<u>414,286,988</u>	
C. Excess of market value over book value		\$37,245,807
2. September 30, 1999		
A. Market Value	\$491,991,547	
B. Book Value	<u>430,576,672</u>	
C. Excess of market value over book value		\$61,414,875
3. September 30, 2000		
A. Market Value	\$506,214,509	
B. Book Value	<u>449,505,221</u>	
C. Excess of market value over book value		\$56,709,288
4. September 30, 2001		
A. Market Value	\$423,434,641	
B. Book Value	<u>432,567,605</u>	
C. Excess of market value over book value		-\$9,132,964
5. Average unrealized gain/(loss) at the four most recent valuation dates		\$36,559,252
6. Members' savings		\$2,496,065
7. Actuarial value of assets: 4(B) + 5 - 6		<u>466,630,792</u>
8. As a percent of market value		110.2%

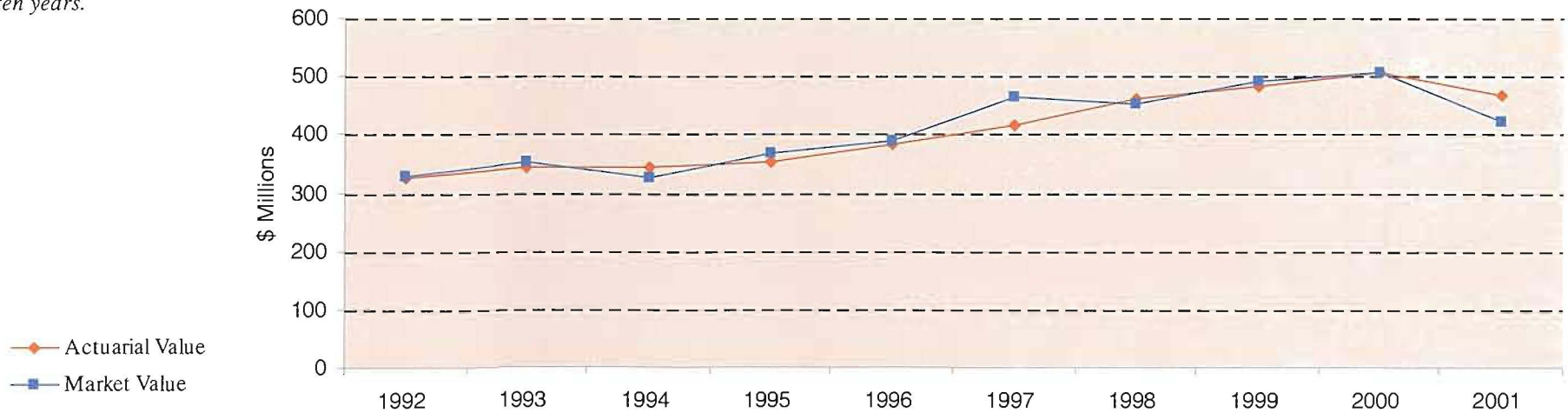
**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

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Both the actuarial value and market value of assets are representations of the Plan's financial status. The actuarial asset value is significant because the Plan's liabilities are compared to its assets to determine what portion, if any, remains unfunded. Amortization of the unfunded liability is an important element in determining the contribution requirement.

*This chart shows the change in the actuarial value of assets versus the market value over the past ten years.*

**CHART 8**  
**Actuarial Value of Assets vs. Market Value of Assets: 1992 – 2001**





## SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis

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### C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

When assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss for the year ended September 30, 2001 is \$66,938,936. A discussion of the major components of the actuarial experience is on the following pages.

*This chart provides a summary of the actuarial experience during the past year.*

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### CHART 9

#### Actuarial Experience for Year Ended September 30, 2001

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1. Net gain/(loss) from investments*	-\$54,313,011
2. Net gain/(loss) from other experience**	-12,625,925
3. Net experience gain/(loss): (1) + (2)	<u>-\$66,938,936</u>

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\* Details in Chart 10

\*\* Details in Chart 12



**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

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**Investment Rate of Return**

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan's investment policy. In prior years, the interest rate was 7.75%. The actual rate of return for the 2001 plan year was (3.21%).

Since the actual return for the year was less than the assumed return, the Plan experienced an actuarial loss during the year ended September 30, 2001 with regard to its investments.

*This chart shows the gain/(loss) due to investment experience.*

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**CHART 10**

**Investment Experience for Year Ended September 30, 2001 (Actuarial Basis)**

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1. Actual return	-\$15,907,369
2. Average value of assets	495,556,667
3. Assumed rate of return	7.75%
4. Expected return: (2) x (3)	38,405,642
5. Actual rate of return: (1) ÷ (2)	-3.21%
6. Actuarial gain/(loss): (1) - (4)	<u>-\$54,313,011</u>

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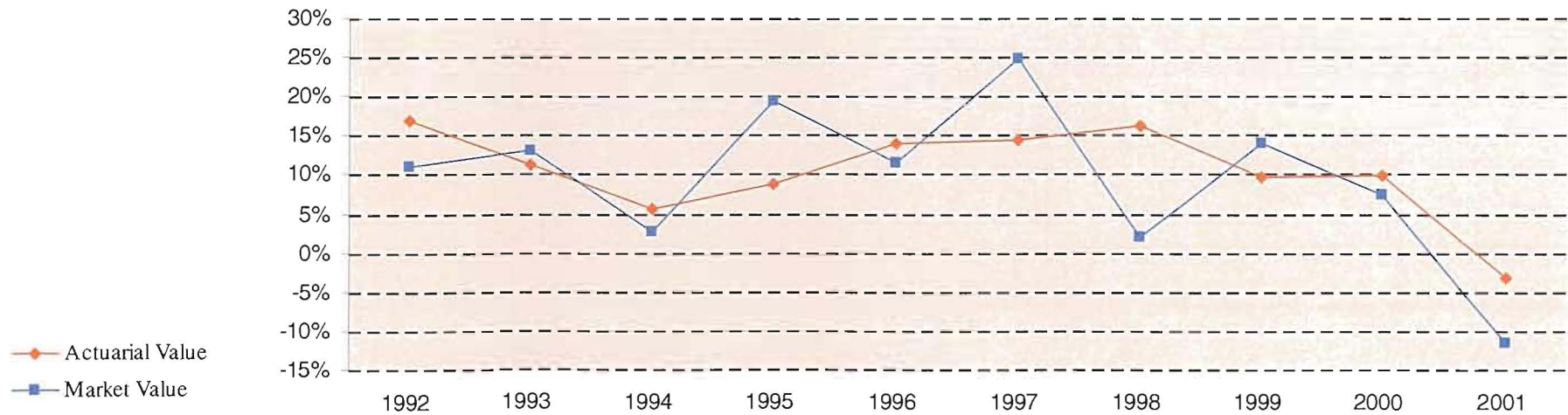
**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

Based upon this experience and future expectations, the Board changed the assumed rate from 7.75% to 8.00% effective February 27, 2001.

*This chart illustrates how this leveling effect has actually worked over the years 1992 - 2001 .*

**CHART 11**  
**Market and Actuarial Rates of Return: 1992 - 2001**



**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

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**Other Experience**

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net loss from this other experience for the year ended September 30, 2001 amounted to \$12,625,925 which is 2.3% of the actuarial accrued liability.

A brief summary of the non-investment experience of the Plan for the year ended September 30, 2001 is shown in the chart below.

*The chart shows the elements of the non-investment experience gain/(loss) for the most recent year.*

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**CHART 12**  
**Non-Investment Experience for Year Ended September 30, 2001**

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	<b>Gain / (Loss)</b>
1. Salary increase for continuing actives	-\$6,193,038
2. Retirement	-626,983
3. DROP experience	-4,477,779
4. Turnover	-767,259
5. Disability retirements	-55,265
6. New and returning employees, including show-ups	-555,543
7. Miscellaneous	<u>49,942</u>
8. Total loss	<u><u>-\$12,625,925</u></u>

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**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

**D. RECOMMENDED CONTRIBUTION**

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability.

Section 12.3 of Ordinance #64833 requires the complete amortization of the unfunded accrued liability over 20 years from the passage of the Ordinance (December 29, 1999, or 18.25 years from October 1, 2001).

This total amount is then divided by the projected payroll for active members to determine the funding rate of 11.21% of payroll.

*The chart compares this valuation's recommended contribution with the prior valuation.*

**CHART 13  
Recommended Contribution**

	Year Beginning October 1			
	2001		2000	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost, beginning of year	\$15,831,675	7.31%	\$16,046,317	7.84%
2. Actuarial accrued liability	542,547,374		515,673,757	
3. Actuarial value of assets	466,630,792		507,655,329	
4. Unfunded actuarial accrued liability: (2) – (3)	75,916,582		8,018,428	
5. Payment on unfunded actuarial accrued liability, beginning of year	7,453,019	3.44%	756,534	0.37%
6. Total recommended contribution: (1) + (5), adjusted for monthly payments	<u>24,269,937</u>	<u>11.21%</u>	<u>17,492,110</u>	<u>8.55%</u>
7. Projected payroll	\$216,527,124		\$204,696,581	

## SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis

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The contribution rates as of October 1, 2001 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

### Reconciliation of Recommended Contribution

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

*The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.*

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#### CHART 14

#### Reconciliation of Recommended Contribution from October 1, 2000 to October 1, 2001

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<b>Recommended Contribution as of October 1, 2000</b>	\$17,492,110
Effect of change in actuarial assumption	-2,522,034
Effect of contributions less than recommended contribution	1,531,759
Effect of investment loss	5,463,102
Effect of other gains and losses, and expected increase in recommended contribution	<u>2,305,000</u>
<b>Total change</b>	<b>\$6,777,827</b>
<b>Recommended Contribution as of October 1, 2001</b>	<b><u>\$24,269,937</u></b>

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**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

**E. INFORMATION REQUIRED BY GASB**

Government Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

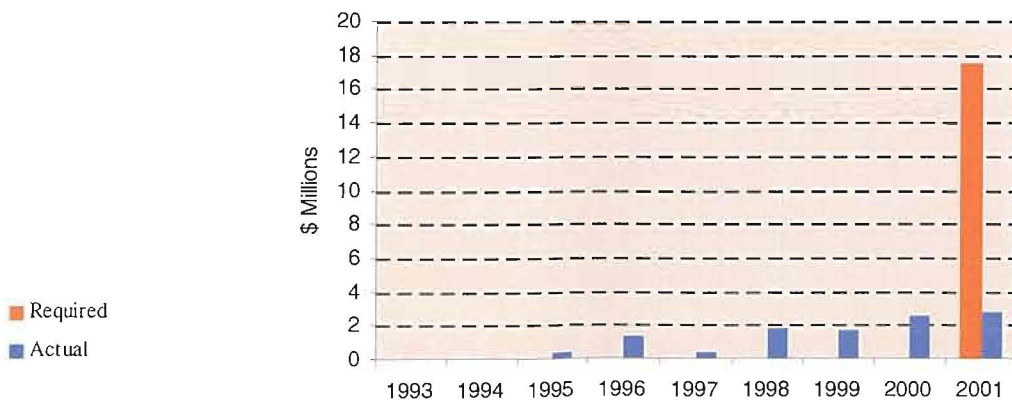
Critical information to GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded on an actuarially sound basis and in accordance with the GASB funding requirements. Chart 15 below presents a graphical representation of this information for the Plan.

The other critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the assets of the plan to the liabilities of the plan as calculated under GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other changes.

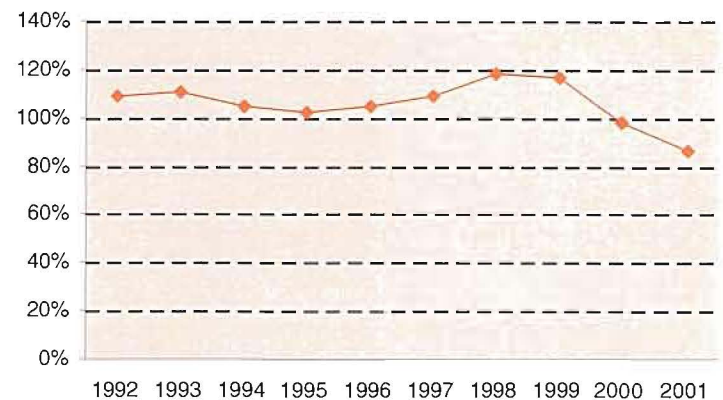
The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

*These graphs show key GASB factors.*

**CHART 15**  
**Required Versus Actual Contributions, Years Ended September 30**



**CHART 16**  
**Funded Ratio, Years Ended September 30**



SECTION 3: Supplemental Information for the Employees Retirement System of the City of St. Louis

**EXHIBIT A**

**Table of Plan Coverage**

Category	Year Ended September 30		Change From Prior Year
	2001	2000	
<b>Active participants in valuation</b>			
Number	5,980	5,948	0.5%
Average age	45.0	44.5	N/A
Average service	11.0	10.8	N/A
Total payroll	\$216,527,124	\$204,696,581	5.8%
Average salary	\$36,209	\$34,414	5.2%
Total active vested participants	3,800	3,706	2.5%
<b>Vested terminated participants</b>	2,072	2,025	2.3%
<b>Retired participants</b>			
Number in pay status	3,423	3,489	-1.9%
Average age	72.7	72.5	N/A
Average monthly benefit	\$575	\$550	4.5%
<b>Beneficiaries in pay status</b>	425	393	8.1%
<b>DROP participants*</b>			
Number	193	N/A	N/A
Average age	58.0	N/A	N/A
Average monthly benefit deposited to account	\$1,504	N/A	N/A
Average account balance	\$8,961	N/A	N/A

\* DROP participants also included in active participant statistics.

**SECTION 3: Supplemental Information for the Employees Retirement System of the City of St. Louis**

**EXHIBIT B**

**Participants in Active Service During Year Ended September 30, 2001 by Age, Years of Credited Service, and Average Salary**

Age	Years of Credited Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	159	157	2	--	--	--	--	--	--	--
	\$24,503	\$24,467	\$27,360	--	--	--	--	--	--	--
25 - 29	410	373	37	--	--	--	--	--	--	--
	\$28,995	\$28,752	\$31,445	--	--	--	--	--	--	--
30 - 34	594	373	170	48	3	--	--	--	--	--
	\$31,046	\$30,259	\$32,161	\$33,134	\$32,197	--	--	--	--	--
35 - 39	780	315	220	195	47	3	--	--	--	--
	\$33,385	\$30,205	\$34,105	\$36,688	\$37,738	\$31,552	--	--	--	--
40 - 44	933	297	217	210	95	102	12	--	--	--
	\$36,353	\$32,273	\$35,236	\$38,790	\$40,777	\$41,140	\$39,139	--	--	--
45 - 49	1,078	283	192	201	100	198	94	10	--	--
	\$37,812	\$30,495	\$36,339	\$38,196	\$41,824	\$44,746	\$42,688	\$42,259	--	--
50 - 54	1,006	202	156	149	67	156	156	104	16	--
	\$41,100	\$32,262	\$36,892	\$39,449	\$45,987	\$46,850	\$47,585	\$44,503	\$47,219	--
55 - 59	566	115	72	86	36	76	69	73	33	6
	\$39,917	\$32,291	\$35,512	\$38,126	\$41,807	\$43,625	\$46,943	\$46,203	\$39,863	\$49,311
60 - 64	317	51	44	61	36	46	20	32	15	12
	\$38,889	\$33,044	\$38,008	\$35,401	\$42,266	\$46,389	\$45,283	\$37,901	\$35,463	\$42,058
65 - 69	89	9	19	16	10	17	10	2	5	1
	\$38,075	\$35,327	\$32,586	\$38,176	\$38,343	\$43,115	\$36,003	\$28,834	\$44,668	\$83,330
70 & over	48	5	8	13	5	3	4	2	4	4
	\$40,143	\$26,594	\$31,210	\$31,937	\$59,226	\$45,350	\$32,092	\$30,472	\$83,821	\$43,063
Total	5,980	2,180	1,137	979	399	601	365	223	73	23
	\$36,209	\$30,252	\$34,886	\$37,702	\$41,889	\$44,555	\$45,312	\$43,745	\$43,309	\$45,919



**SECTION 3: Supplemental Information for the Employees Retirement System of the City of St. Louis**

**EXHIBIT C**

**Summary Statement of Income and Expenses**

	Year Ended September 30, 2001	Year Ended September 30, 2000
<b>Contribution income:</b>	\$2,768,208	\$2,535,798
<b>Investment income</b>		
Interest, dividends and other income	\$14,468,916	\$15,186,849
Adjustment toward market value	-27,909,181	33,982,499
Allocation to Members' Savings Fund	0	-165,429
Less administrative expenses	-529,662	-614,324
Less investment fees	<u>-1,937,442</u>	<u>-2,020,485</u>
Net investment income	-15,907,369	46,369,110
<b>Total income available for benefits</b>	-\$13,139,161	\$48,904,908
<b>Less benefit payments (including service transfer payments)</b>	-25,369,944	-23,999,632
<b>Prior year adjustment for employer contributions</b>	-2,515,432	264,544
<b>Change in reserve for future benefits</b>	-\$41,024,537	\$25,169,820

**SECTION 3: Supplemental Information for the Employees Retirement System of the City of St. Louis**

**EXHIBIT D**

**Table of Financial Information**

	Year Ended September 30, 2001	Year Ended September 30, 2000
<b>Cash equivalents</b>	\$166,737	\$274,811
<b>Accounts receivable:</b>		
Accrued interest and dividends	\$2,891,311	\$3,309,563
Contributions	347,590	2,555,150
Miscellaneous	<u>0</u>	<u>5,159</u>
Total accounts receivable	3,238,901	5,869,872
<b>Investments:</b>		
Debt securities	196,967,568	193,597,412
Managed funds	79,991,185	48,349,752
Common stock and other	<u>143,495,242</u>	<u>258,557,918</u>
Total investments at market value	<u>420,453,995</u>	<u>500,505,082</u>
<b>Total assets*</b>	\$423,859,633	\$506,649,765
<b>Less accounts payable:</b>		
Accounts payable	-\$424,992	-\$393,630
Payable under foreign contracts	<u>0</u>	<u>-41,626</u>
Total accounts payable	-\$424,992	-\$435,256
<b>Net assets at market value*</b>	<u>\$423,434,641</u>	<u>\$506,214,509</u>
<b>Net assets at actuarial value*</b>	<u>\$466,630,792</u>	<u>\$507,655,329</u>

\* Includes \$1,735,315 DROP account balances in 2001

**SECTION 3: Supplemental Information for the Employees Retirement System of the City of St. Louis**

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**EXHIBIT E**

**Definitions of Pension Terms**

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The following list defines certain technical terms for the convenience of the reader:

**Assumptions or actuarial assumptions:**

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield which the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

**Normal Cost:**

The amount of contributions required to fund the benefit allocated to the current year of service.

**Actuarial Accrued Liability For Actives:**

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

**Actuarial Accrued Liability For Pensioners:**

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and of the interest which the sum is expected to earn before it is entirely paid out in benefits.

**Unfunded Actuarial Accrued Liability:**

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

**SECTION 3: Supplemental Information for the Employees Retirement System of the City of St. Louis**

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**Amortization of the Unfunded Actuarial Accrued Liability:**

Closed period ending December 31, 2019.

**Investment Return:**

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

**SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis**

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**EXHIBIT I**

**Summary of Actuarial Valuation Results**

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The valuation was made with respect to the following data supplied to us.

1. Pensioners as of the valuation date (including 425 beneficiaries in pay status)		3,848
2. Participants inactive during year ended September 30, 2001 with vested rights (including 41 rehires also included as actives)		2,072
3. Participants active during the year ended September 30, 2001 (including 193 participants in the DROP)		5,980
Fully vested	3,800	
Not vested	2,180	

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

1. Normal cost, including administrative expenses		\$15,831,675
2. Actuarial accrued liability		542,547,374
Pensioners and beneficiaries	\$228,452,668	
Inactive participants with vested rights	30,398,107	
Active participants	283,696,599	
3. Actuarial value of assets (\$423,434,641 at market value)		466,630,792
4. Unfunded actuarial accrued liability		75,916,582

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**SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis**

**EXHIBIT II**

**Supplementary Information Required by the GASB – Schedule of Employer Contributions**

<b>Plan Year Ended September 30</b>	<b>Annual Required Contributions</b>	<b>Actual Contributions</b>	<b>Percentage Contributed</b>
1994	\$0	\$0	N/A
1995	0	353,964	N/A
1996	0	1,277,465	N/A
1997	0	407,168	N/A
1998	0	1,816,739	N/A
1999	0	1,651,025*	N/A
2000	0	2,535,798**	N/A
2001	17,492,110	2,768,207	15.83%
2002	24,269,937	--	--

\* Does not include \$264,544 adjustment made the following year

\*\* Does not include -\$2,515,432 adjustment made the following year

**SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis**

**EXHIBIT III**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll* [(b) - (a) / (c)]</b>
10/01/1996	\$382,377,898	\$364,020,306	-\$18,357,592	105.04%	\$170,077,631	0.00%
10/01/1997	415,345,946	381,345,566	-34,000,380	108.92%	176,908,292	0.00%
10/01/1998	460,683,063	390,780,537	-69,902,526	117.89%	188,141,151	0.00%
10/01/1999	482,750,053	415,594,927	-67,155,126	116.16%	193,273,578	0.00%
10/01/2000	507,655,329	515,673,757	8,018,428	98.45%	204,696,581	3.92%
10/01/2001	466,630,792	542,547,374	75,916,582	86.01%	216,527,124	35.06%

\* Not less than zero



**SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis**

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**EXHIBIT IV**

**Supplementary Information Required by the GASB**

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Valuation Date	October 1, 2001
Actuarial Cost Method	Projected unit credit cost method
Amortization Method	Level percent of payroll for unfunded liability
Remaining Amortization Period	18.25 years as of October 1, 2001
Asset Valuation Method	One-quarter of the difference between the book value of assets and the market value of assets for each of the previous four years is added to the current book value reduced by the amount of members' savings.
Actuarial Assumptions:	
Investment Rate of Return	8.00% per year, net of expenses*
Projected Salary Increases	According to assumption scale included in Exhibit V.
Cost of Living Adjustments	5.0% per year; maximum cumulative increase of 25%.

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\*The investment rate of return assumption was changed from 7.75% to 8.00% this year.



SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis

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EXHIBIT V

Actuarial Assumptions and Actuarial Cost Method

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Mortality Rates:

*Healthy*

1994 Group Annuity Mortality Table

*Disabled*

1983 Railroad Retirement Board Disabled Life Mortality Table

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Mortality and Disability Rates before Retirement:

Age	Mortality Rate (%)		Disability Rate (%)	
	Male	Female	Male	Female
20	0.05	0.03	0.00	0.00
25	0.07	0.03	0.00	0.00
30	0.08	0.04	0.00	0.00
35	0.09	0.05	0.00	0.00
40	0.11	0.07	0.20	0.10
45	0.16	0.10	0.30	0.20
50	0.26	0.14	0.90	0.50
55	0.44	0.23	1.10	0.70
60	0.80	0.44	0.70	0.50

**SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis**

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**Withdrawal Rates before Retirement:**

Creditable Service	Withdrawal Rate (%) with less than four years of Creditable Service		Age	Withdrawal Rate (%) with four or more years of Creditable Service	
	Male	Female		Male	Female
0	20.0	18.0	20	25.00	13.90
1	13.0	12.2	25	17.80	12.34
2	11.5	11.5	30	10.24	9.14
3	10.5	10.5	35	7.38	6.74
			40	5.74	5.56
			45	4.44	4.78
			50	3.64	3.84
			55	3.16	3.16

**Retirement Rates:**

Age	Retirement Probability	Age	Retirement Probability
55	6.00	63	15.0
56	3.50	64	20.0
57	5.00	65	40.0
58	5.00	66	25.0
59	5.00	67	20.0
60	10.00	68	20.0
61	15.00	69	20.0
62	25.00	70	100.0

In addition, the first year that a participant satisfies the requirements under the “Rule of 85,” retirement is assumed to occur at the greater of 10% or the age-related rate in the table above.

#### SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis

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**Retirement Age for Inactive Vested Participants:**

For members who terminate employment with a vested benefit, but before early retirement eligibility, retirement is assumed to occur at age 62.

For members who terminate after early retirement eligibility, immediate commencement of benefits is assumed.

**Unknown Data for Participants:**

Same as those exhibited by Participants with similar known characteristics. For inactive vested participants with unknown benefit amounts, \$250 per month is assumed.

**Rehires:**

A 0.4% load on active accrued liability and normal cost has been added to reflect the cost of rehires.

**Sick Leave:**

Sick leave may be used to increase either Final Average Earnings, Credited Service, or both. The valuation assumes:

- 100 hours accrue each year
- 50% of hours are “banked”
- 25% of banked hours are used first to increase Final Average Earnings
- The remainder of available banked hours is used to increase Credited Service.

**Percent Married:**

1960 U.S. census; varies by sex and age.

**Age of Spouse:**

Females are three years younger than their spouses.

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**Net Investment Return:**

8.00% per year, net of expenses.\*

\* The net investment return assumption was changed from 7.75% to 8.00% this year.

**SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis**

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**Salary Scale:**

<b>Age</b>	<b>Increase Over Previous Year's Salary</b>
20	8.50%
25	7.50%
30	7.00%
35	6.50%
40	5.50%
45	5.50%
50	5.00%
55	4.50%
60	4.50%
65+	4.50%

**Increase in Social Security  
Taxable Wage Base:**

4.5% per year.

**Actuarial Value of Assets:**

The sum of:

- (a) The book value of assets at the beginning of the year; plus
- (b) 25% of the difference between market value and book value for each of the last four years; less
- (c) The Members' Savings Fund.

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**Actuarial Cost Method:**

Projected Unit Credit Actuarial Cost Method.

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**Actuarial Equivalent Basis  
for Joint and Survivor**

**Conversion Factors:**

7.75% per annum interest  
1971 Group Annuity Mortality Table (males) for both participant and beneficiary.

**SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis**

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**EXHIBIT VI**  
**Summary of Plan Provisions**

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This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

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<b>Plan Year:</b>	October 1 through September 30
<b>Normal Retirement:</b>	
<i>Age Requirement</i>	65
<i>Service Requirement</i>	Five years of service
<i>Amount</i>	1.3% of Final Average Compensation up to the Benefit Compensation Base plus 2.05% of Final Average Compensation in excess of the Benefit Compensation Base times Credited Service (minimum \$200 per month for retirees with 12 or more years of service).
<b>Rule of 85 Retirement:</b>	
<i>Age and Service Requirements</i>	Sum of age and creditable service at date of termination equals or exceeds 85
<i>Amount</i>	1.3% of Final Average Compensation plus 0.75% of Final Average Compensation in excess of the Benefit Compensation Base times Credited Service
<b>Early Service Retirement:</b>	
<i>Age Requirement</i>	60
<i>Age and Service Requirements</i>	Age 60 with five years of service; or age 55 with 20 years of creditable service; or any age and 30 years of creditable service.
<i>Amount</i>	Normal retirement amount reduced by 1/3% for each month benefit begins before age 65.

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**SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis**

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**Disability:**

<i>Age Requirement</i>	None
<i>Service Requirement</i>	Five years of Creditable Service and a member at disablement.
<i>Amount</i>	Normal service retirement amount based on Credited Service and Final Average Compensation at disability, payable immediately.

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**DROP**

**(Deferred Retirement Option Plan):** Members who have achieved eligibility for retirement can continue active employment and defer receipt of their retirement allowance for a period not to exceed five years. During the DROP period, the member's retirement allowance will be paid directly into a separate account.

Service during the DROP period shall not be counted as Creditable Service, nor shall it be counted toward determination of retirement allowance. A member's DROP account shall not be adjusted for any cost-of-living increases during participation in the DROP. No member returning to non-DROP status shall make any withdrawal from his/her DROP account until after termination of employment.

Both existing balance and accumulated future payments and the current account balance are credited with 8.00% interest annually for five years. In no event does the total account balance exceed the accumulated value of five-years-payments with interest.

The annuity awarded upon full termination and subsequent benefit receipt reflects the unused sick-leave conversion to Credited Service and/or Final Average Pay. During participation in the DROP, the annual deposit to the account does NOT reflect any conversion of unused sick leave as each participant continues to accrue sick leave hours.

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**Vesting:**

<i>Age Requirement</i>	None
<i>Service Requirement</i>	Five years of service.
<i>Amount:</i>	Normal or early service retirement amount

**SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis**

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**Spouse's Pre-Retirement Death Benefit:**

<i>Age Requirement</i>	None.
<i>Service Requirement</i>	Five years of Creditable Service and active.
<i>Amount</i>	100% of benefit employee would have received had the employee survived to earliest retirement age, retired on the date of death, and elected the Joint and Survivor option. The pension is payable on the day the participant would have been eligible for an early service retirement benefit.  Note: Other death benefits may be payable to members who have terminated employment.

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**Post-Retirement Death Benefit:**

If married, the employee and spouse may elect to have pension benefits paid in the form of a 100% joint and survivor annuity. A member may also elect a ten year certain and life equivalent form of benefit. If elected, the benefit amount otherwise payable is reduced to reflect the coverage. If not elected, benefits are payable for the life of the employee without reduction.

**Cost of Living Adjustment:**

Based on the change in Consumer Price Index for the fiscal year, subject to a maximum increase per year of 5.0% (3.0% for retirements between March 21, 1972 and March 26, 1974; none for retirements prior to March 21, 1972), with a cumulative percentage increase (equal to the sum of the annual percentage increases) limited to 25.0%. If the change is less than 1.0%, no adjustment is made. If the change is a decrease, the cost-of-living adjustment shall be zero unless the decrease is 5.0% or more. Adjustments begin on the second January 1 after payments begin.

**SECTION 4: Reporting Information for the Employees Retirement System of the City of St. Louis**

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**Final Average Compensation:** One-half of the sum of:

1. The total compensation earned during the two highest consecutive years of Creditable Service prior to termination; and
2. The balance of sick leave pay as of the date of retirement less sick leave hours paid upon termination and less sick leave hours considered as Creditable Service. Said balance cannot exceed 25% of a member's total sick leave pay as of the date of retirement.

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**Benefit Compensation Base:** Amount of annual compensation with respect to which old age and survivor's insurance benefits would be provided under the Social Security Act as revised on December 1, 1973 to become effective in 1974 (old law) calculated when the member terminates employment.

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**Creditable Service:** Number of years and completed months of service during which the member receives compensation after April 1, 1960. Creditable Service for employment prior to April 1, 1960 is granted only if the member was an employee of an employer of the System on April 1, 1960. Unused credited sick leave shall be considered as Creditable Service provided the member does not receive payment for the sick leave.

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**Membership:** Immediate upon employment.