

**Employees Retirement System of the  
City of St. Louis**

*Actuarial Valuation and Review  
as of October 1, 2008*

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*January 15, 2009*

*Board of Trustees  
Employees Retirement System of the City of St. Louis  
St. Louis, Missouri*

*Dear Board Members:*

*We are pleased to submit this Actuarial Valuation and Review as of October 1, 2008. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2009 and analyzes the preceding year's experience.*


*The census information on which our calculations were based was prepared by the System and the financial information was provided in the Report of the Secretary. That assistance is gratefully acknowledged. The actuarial calculations were completed under the supervision of Thomas D. Levy, FSA, MAAA, EA.*


*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.*

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

*Sincerely,*

*THE SEGAL COMPANY*

By:   
*Harold S. Cooper, FSA, MAAA, EA  
Vice President and Actuary*

  
*Thomas D. Levy, FSA, MAAA, EA  
Senior Vice President and Chief Actuary*

## SECTION 1

### VALUATION SUMMARY

Purpose .....	i
Significant Issues in Valuation Year.....	i
Summary of Key Valuation Results.....	iii

## SECTION 2

### VALUATION RESULTS

A. Participant Data.....	1
B. Financial Information.....	4
C. Actuarial Experience.....	7
D. Scheduled Contribution .....	12
E. Information Required by the GASB.....	14

## SECTION 3

### SUPPLEMENTAL INFORMATION

EXHIBIT A Table of Plan Coverage.....	15
EXHIBIT B Participants in Active Service as of September 30, 2008.....	16
EXHIBIT C Summary Statement of Income and Expenses on an Actuarial Value Basis.....	17
EXHIBIT D Table of Financial Information ..	18
EXHIBIT E Development of Unfunded Actuarial Accrued Liability for Year Ended September 30, 2008 .....	19
EXHIBIT F Section 415 Limitations .....	20
EXHIBIT G Definitions of Pension Terms.....	21

## SECTION 4

### REPORTING INFORMATION

EXHIBIT I Summary of Actuarial Valuation Results.....	23
EXHIBIT II Supplementary Information Required by the GASB – Schedule of Employer Contributions.....	25
EXHIBIT III Supplementary Information Required by the GASB – Schedule of Funding Progress...	26
EXHIBIT IV Supplementary Information Required by the GASB.....	27
EXHIBIT V Actuarial Assumptions and Actuarial Cost Method .....	28
EXHIBIT VI Summary of Plan Provisions .....	32

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

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### Purpose

This report has been prepared by The Segal Company to present a valuation of the Employees Retirement System of the City of St. Louis as of October 1, 2008. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of October 1, 2008, provided by the Board;
- The assets of the Plan as of September 30, 2008, provided by the Report of the Secretary; and
- Actuarial assumptions regarding investment earnings, future salary increases, employee terminations, retirement, death, etc., as chosen by the Board.

### Significant Issues in Valuation Year

- In accordance with the ordinance, the scheduled contribution for the Plan year ended September 30, 2008 was \$25.3 million, or 10.95% of compensation. Actual contributions for the year ended September 30, 2008 totaled \$30.4 million.
- The scheduled contribution for the current Plan year (October 1, 2008 through September 30, 2009) is \$26.1 million, or 10.92% of compensation. We suggest that the level of contributions to the Fund be made at the scheduled contribution level, consistent with the Ordinance.
- On a market value basis, the asset return for the year ended September 30, 2008 was -12.76%. Due to the deferral of recognition of a portion of the investment losses, the actuarial rate of return was 5.85%, compared to the 8.00% assumption. As of September 30, 2008, the actuarial value of assets (\$674.0 million) represents 114.1% of the market value (\$590.9 million).
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment loss as of September 30, 2008 is \$83,135,159. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.00% per year (net of expenses) on a **market value** basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.00% rate and all other actuarial assumptions are met, the contribution requirements would still increase in each of the next few years.

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

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- 113 members entered the DROP in the year ended September 30, 2008, compared to 105 in 2007 and 79 in 2006. During the past year, the eighth year of the DROP, 97 participants who were previously in the DROP left the program, either by commencing payment or by resuming benefit accruals. Therefore, as of October 1, 2008, 416 active members are participating in the DROP, compared to 400 active participants last year. We will review the retirement experience of DROP participants and all other Plan experience during our next experience study, scheduled to occur following the completion of the October 1, 2009 Actuarial Valuation and Review.
- The actuarial valuation report as of October 1, 2008 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan. For example, a 10% change in the current year's actuarial value of assets would produce a \$5,778,194 change in the scheduled contribution level, or 2.42% of compensation.

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

**Summary of Key Valuation Results**

	<b>2008</b>	<b>2007</b>
<b>Contributions for plan year beginning October 1:</b>		
Scheduled	\$26,072,575	\$25,297,801
Actual	--	30,350,011
<b>Funding elements for plan year beginning October 1:</b>		
Normal cost	\$17,461,741	\$17,196,998
Market value of assets	590,881,560	688,132,586
Actuarial value of assets	674,016,719	646,569,478
Actuarial accrued liability	765,842,026	732,576,024
Unfunded actuarial accrued liability	91,825,307	86,006,546
<b>GASB 25/27 for plan year beginning October 1:</b>		
Annual required contributions	\$26,072,575	\$25,297,801
Actual contributions	TBD	30,350,011
Percentage contributed	TBD	119.97%
Funded ratio	88.01%	88.26%
Covered payroll	\$238,701,628	\$231,029,237
<b>Demographic data for plan year beginning October 1:</b>		
Number of retired participants and beneficiaries	3,818	3,774
Number of vested former participants	2,494	2,480
Number of active participants	5,756	5,712
Total compensation	\$238,701,628	\$231,029,237
Average compensation	41,470	40,446

TBD = To be determined

**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 demographic characteristics 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: 1999 – 2008**

<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>
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
2002	6,186	2,092	3,796	0.95
2003	6,035	2,150	3,860	1.00
2004	5,770	2,308	3,763	1.05
2005	5,756	2,392	3,755	1.07
2006	5,674	2,434	3,758	1.09
2007	5,712	2,480	3,774	1.09
2008	5,756	2,494	3,818	1.10

\* Beginning in 2001, rehires are included in both the active and vested terminated participant counts.

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

**Active Participants**

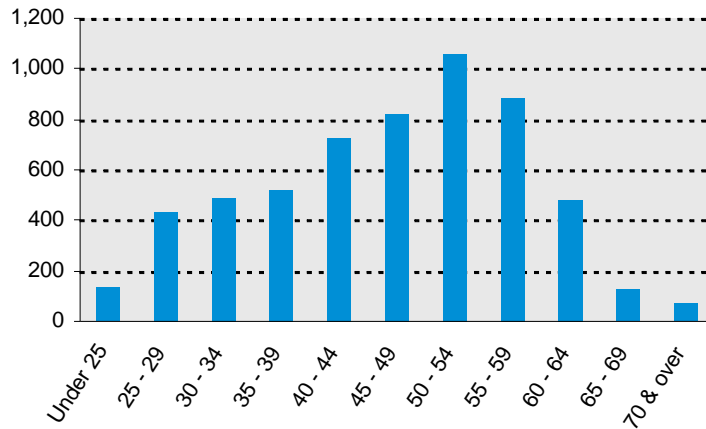
Plan costs are affected by the age, years of creditable service and compensation of active participants. In this year's valuation, there were 5,756 active participants (including 416 DROP participants) with an average age of 47.1, average years of creditable service of 12.1 years and average compensation of \$41,470. The 5,712 active participants (including 400 DROP participants) in the prior valuation had an average age of 47.0, average service of 12.2 years and average compensation of \$40,446.

**Inactive Participants**

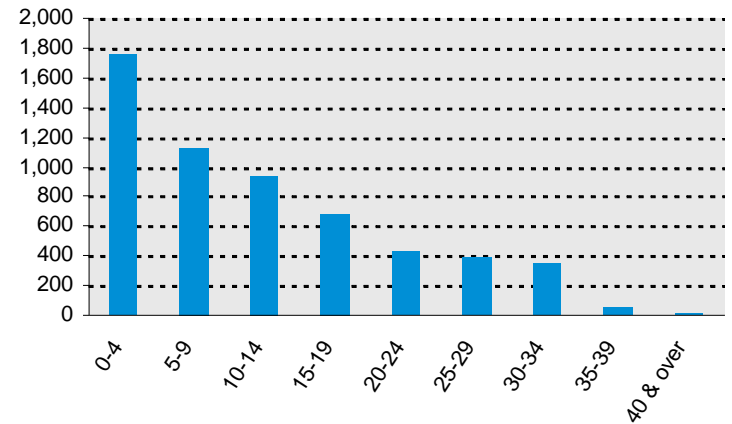
In this year's valuation, there were 2,494 participants with a vested right to a deferred or immediate vested benefit.

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

**CHART 2**  
**Distribution of Active Participants by Age as of September 30, 2008**



**CHART 3**  
**Distribution of Active Participants by Years of Creditable Service as of September 30, 2008**





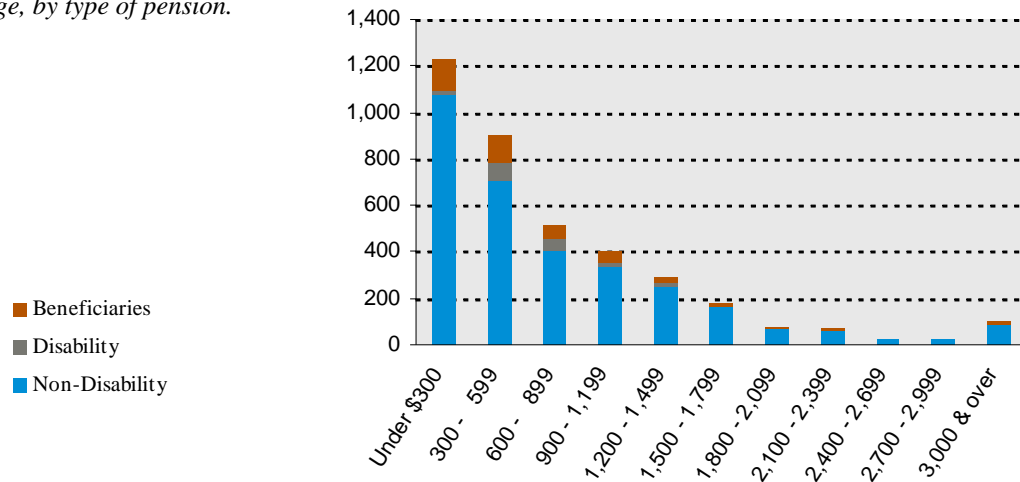
**SECTION 2: Valuation Results for the Employees Retirement System of the City of St. Louis**

**Retired Participants and Beneficiaries**

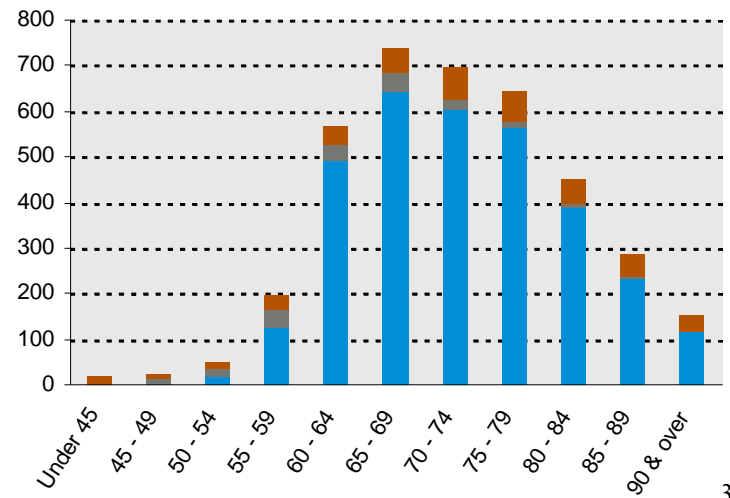
As of September 30, 2008, 3,377 retired participants and 441 beneficiaries (not including DROP participants) were receiving total monthly benefits of \$3,076,829, including the January 1, 2009 cost-of-living adjustment. For comparison, in the previous valuation, there were 3,335 retired participants and 439 beneficiaries receiving monthly benefits of \$2,867,575. There were 2 retired participants in suspended status this year compared to 1 retired participant in the prior valuation.

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

**CHART 4**  
**Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of September 30, 2008**



**CHART 5**  
**Distribution of Retired Participants and Beneficiaries by Type and by Age as of September 30, 2008**



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

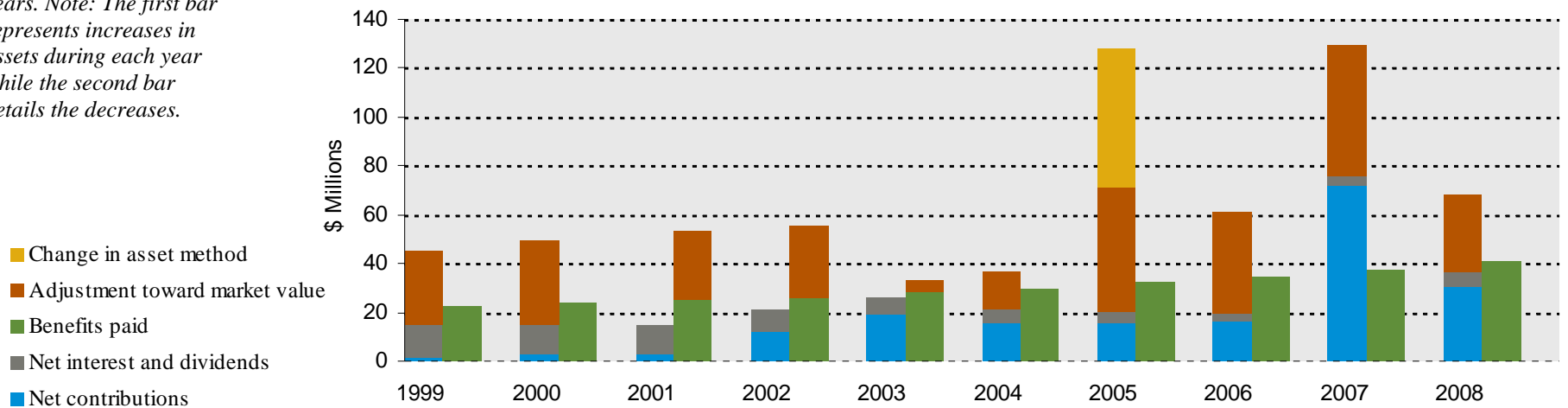
**B. FINANCIAL INFORMATION**

Retirement plan funding anticipates that, over the long term, both contributions and net investment earnings (less investment fees and administrative 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. Note: The first bar represents increases in assets during each year while the second bar details the decreases.*

**CHART 6**  
**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended September 30, 1999 – 2008**



**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 gradually adjusts to market value. As of October 1, 2005 the asset method was changed, with an initial value set to the market value of assets. 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 amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

*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, 2008**

1. Market value of assets			\$590,881,560
	<u>Original</u>	<u>Unrecognized</u>	
	<u>Amount*</u>	<u>Return**</u>	
2. Calculation of unrecognized return			
(a) Year ended September 30, 2008	-\$141,799,294	-\$113,439,436	
(b) Year ended September 30, 2007	38,933,065	23,359,839	
(c) Year ended September 30, 2006	17,361,094	6,944,438	
(d) Year ended September 30, 2005	0	N/A	
(e) Year ended September 30, 2004	0	N/A	
(f) Total unrecognized return		-83,135,159	
3. Preliminary actuarial value: (1) - (2f)			674,016,719
4. Adjustment to be within 20% corridor			0
5. Final actuarial value of assets: (3) + (4)			<u>\$674,016,719</u>
6. Actuarial value as a percentage of market value: (5) ÷ (1)			114.1%

*\*Total return minus expected return on a market value basis*

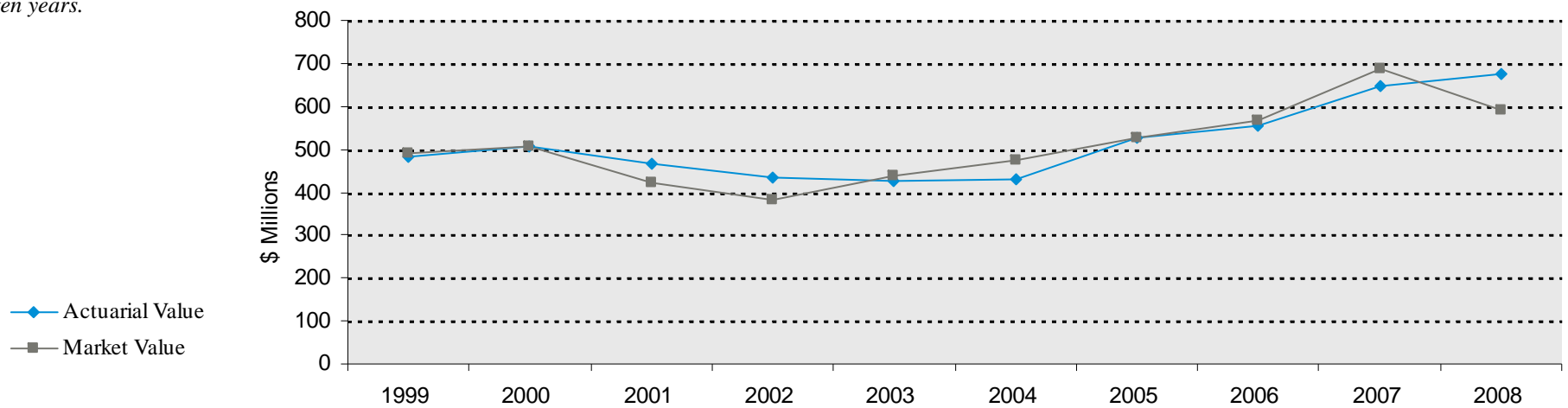
*\*\*Recognition at 20% per year over 5 years*

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

Both the actuarial value and market value of assets are representations of the Plan's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Plan's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued 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 as of September 30, 1999 – 2008**



**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.

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

The total loss is \$12,013,890: \$13,775,978 from investments and an offsetting gain of \$1,762,088 from all other sources. The net experience variation from individual sources other than investments was 0.2% of the actuarial accrued liability. 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, 2008**

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1. Net loss from investments*	-\$13,775,978
2. Net gain from other experience**	<u>1,762,088</u>
3. Net experience loss: (1) + (2)	-\$12,013,890

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\* Details in Chart 10

\*\* Details in Chart 13

**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. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.00%. The actual rate of return on an actuarial basis for the 2008 plan year was 5.85%.

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, 2008 with regard to its investments.

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

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**CHART 10**  
**Actuarial Value Investment Experience for Year Ended September 30, 2008**

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1. Actual return	\$37,545,644
2. Average value of assets	641,520,276
3. Actual rate of return: (1) ÷ (2)	5.85%
4. Assumed rate of return	8.00%
5. Expected return: (2) x (4)	\$51,321,622
6. Actuarial gain/(loss): (1) – (5)	<u>-\$13,775,978</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. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last ten years, including five-year and ten-year averages.

**CHART 11**

**Investment Return – Actuarial Value vs. Market Value: 1999 - 2008**

Year Ended September 30	Net Interest and Dividend Income		Recognition of Capital Appreciation		Change in Asset Method		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
1999	\$13,121,400	2.92%	\$30,043,185	6.69%	--	--	\$43,164,585	9.61%	\$61,556,347	13.99%
2000	12,386,611	2.63%	33,982,499	7.21%	--	--	46,369,110	9.84%	35,686,796	7.43%
2001	12,001,812	2.42%	-27,909,181	-5.63%	--	--	-15,907,369	-3.21%	-57,662,700	-11.68%
2002	9,146,847	1.99%	-28,958,738	-6.30%	--	--	-19,811,891	-4.31%	-26,532,945	-6.37%
2003	6,567,932	1.53%	-5,042,210	-1.17%	--	--	1,525,722	0.36%	66,296,658	17.54%
2004	5,966,120	1.43%	15,186,086	3.63%	--	--	21,152,206	5.06%	48,545,327	11.22%
2005	4,606,424	1.08%	50,831,750	12.00%	\$56,649,741	13.37%	112,087,915	26.45%	69,841,063	14.99%
2006	3,707,172	0.72%	41,239,143	7.95%	--	--	44,946,315	8.67%	58,835,190	11.35%
2007	4,842,212	0.85%	53,230,233	9.32%	--	--	58,072,445	10.17%	85,746,678	14.65%
2008	<u>6,475,800</u>	1.01%	<u>31,069,844</u>	4.84%	--	--	<u>37,545,644</u>	5.85%	<u>-87,152,623</u>	-12.76%
Total	\$78,822,330		\$193,672,611		\$56,649,741		\$329,144,682		\$255,159,791	
							Five-year average return	10.64%		6.55%
							Ten-year average return	6.76%		5.21%

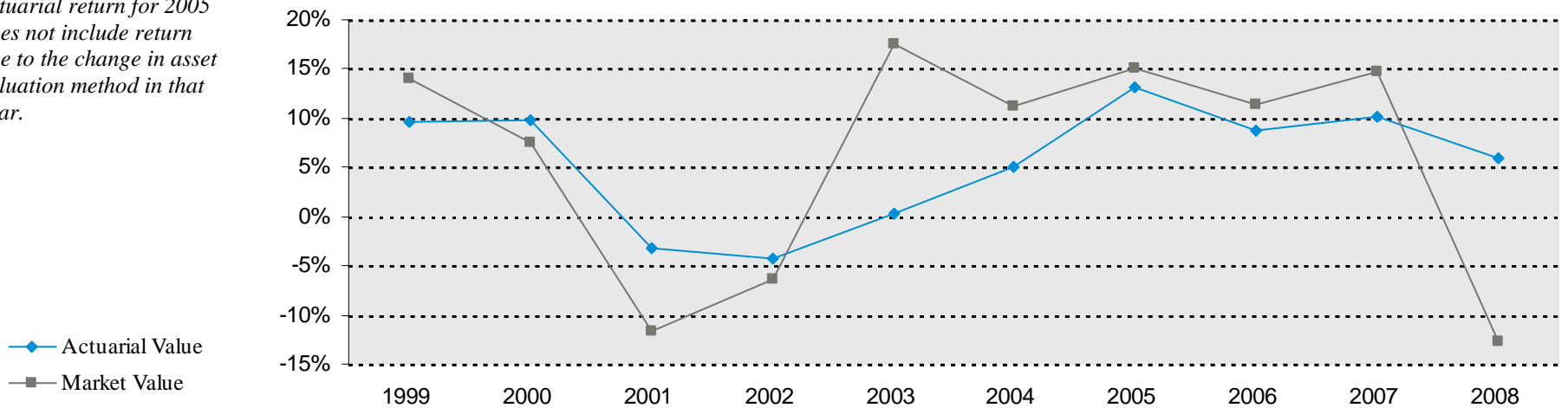
*Note: Each year's yield is weighted by the average asset value in that year.*

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

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.

*This chart illustrates how this leveling effect has actually worked over the years 1999 - 2008. The actuarial return for 2005 does not include return due to the change in asset valuation method in that year.*

**CHART 12**  
**Market and Actuarial Rates of Return for Years Ended September 30, 1999 - 2008**





**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 gain from this other experience for the year ended September 30, 2008 amounted to \$1,762,088 which is 0.2% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Plan for the year ended September 30, 2008 is shown in the chart below.

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

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**CHART 13**

**Experience Due to Changes in Demographics for Year Ended September 30, 2008**

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1. Turnover	-\$1,823,975
2. Retirement (including DROP experience)	1,225,942
3. Deaths among retired members and beneficiaries	1,496,970
4. Salary increase for continuing actives	1,191,011
5. Miscellaneous	<u>-327,860</u>
6. Total	\$1,762,088

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

**D. SCHEDULED 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. This total amount is then divided by the projected compensation for active members to determine the funding rate. The funding rate is 10.92% of compensation as of October 1, 2008, compared to 10.95% as of October 1, 2007.

Section Eleven(3) of Ordinance #66511 requires that the unfunded actuarial accrued liability be amortized over 30 years. This period is reset to 30 each year.

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

**CHART 14**  
**Scheduled Contribution**

	Year Beginning October 1			
	2008		2007	
	Amount	% of Compensation	Amount	% of Compensation
1. Total normal cost	\$17,461,741	7.32%	\$17,196,998	7.44%
2. Actuarial accrued liability	765,842,026		732,576,024	
3. Actuarial value of assets	<u>674,016,719</u>		<u>646,569,478</u>	
4. Unfunded actuarial accrued liability: (2) – (3)	\$91,825,307		\$86,006,546	
5. Payment on unfunded actuarial accrued liability, beginning of year	7,552,413	3.16%	7,073,834	3.06%
6. Total scheduled contribution: (1) + (5), adjusted for timing*	<u>\$26,072,575</u>	<u>10.92%</u>	<u>\$25,297,801</u>	<u>10.95%</u>
7. Projected compensation	\$238,701,628		\$231,029,237	

\*Scheduled contributions are assumed to be paid at the end of every month.

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

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The scheduled contribution as of October 1, 2008 is 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. It includes all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

### Reconciliation of Scheduled Contribution

The chart below details the changes in the scheduled 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 15

#### Reconciliation of Scheduled Contribution from October 1, 2007 to October 1, 2008

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<b>Scheduled Contribution as of October 1, 2007</b>	\$25,297,801
Effect of increase in statutory limits	2,197
Effect of maintaining an amortization period of 30 years	-70,100
Effect of contributions more than scheduled contribution	-471,039
Effect of investment loss	1,191,502
Effect of other gains and losses on accrued liability	-152,405
Effect of net other changes, including composition and number of participants	<u>274,619</u>
<b>Total change</b>	<u>\$774,774</u>
<b>Scheduled Contribution as of October 1, 2008</b>	\$26,072,575

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

**E. INFORMATION REQUIRED BY THE GASB**

Governmental 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 within the range of the GASB reporting requirements. Chart 16 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

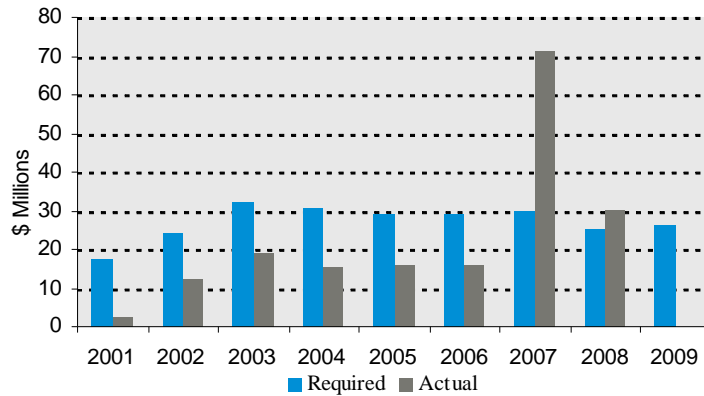
actuarial value of assets to the actuarial accrued liabilities of the plan as calculated under GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

Although GASB requires that the actuarial value of assets be used to determine the funded ratio, Chart 17 shows the funded ratio calculated using both the actuarial value of assets and the market value of assets.

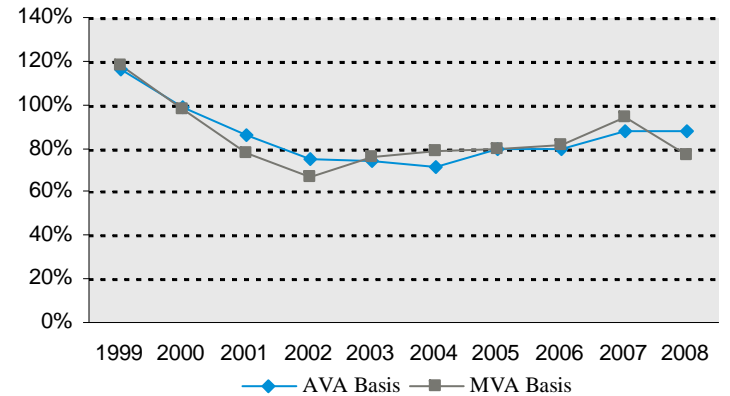
The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

*These graphs show key GASB factors.*

**CHART 16**  
Required Versus Actual Contributions, Years Ended September 30



**CHART 17**  
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**

<b>Category</b>	<b>Year Ended September 30</b>		<b>Change From Prior Year</b>
	<b>2008</b>	<b>2007</b>	
<b>Active participants in valuation:</b>			
Number	5,756	5,712	0.8%
Average age	47.1	47.0	N/A
Average service	12.1	12.2	N/A
Total compensation	\$238,701,628	\$231,029,237	3.3%
Average compensation	\$41,470	\$40,446	2.5%
Total active vested participants	4,002	4,103	-2.5%
<b>Vested terminated participants</b>	2,494	2,480	0.6%
<b>Retired participants:</b>			
Number in pay status	3,377	3,335	1.3%
Average age	72.7	72.9	N/A
Average monthly benefit	\$809	\$765	5.8%
Number in suspended status	2	1	100.0%
<b>Beneficiaries in pay status</b>	441	439	0.5%
<b>DROP participants*:</b>			
Number in pay status	416	400	4.0%
Average age	59.9	59.9	N/A
Average monthly benefit deposited to account	\$1,477	\$1,468	0.6%
Average account balance	\$40,928	\$40,917	0.0%
DROP account balance	\$38,431,269	\$34,332,543	11.9%

*\*DROP participants are also included in active participant status*

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

**EXHIBIT B**

**Participants in Active Service as of September 30, 2008  
By Age, Years of Creditable Service, and Average Compensation**

Age	Years of Creditable Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	135	133	2	--	--	--	--	--	--	--
	28,667	28,623	31,609	--	--	--	--	--	--	--
25 - 29	431	380	50	1	--	--	--	--	--	--
	33,479	33,453	33,532	40,691	--	--	--	--	--	--
30 - 34	493	292	162	37	2	--	--	--	--	--
	35,947	35,693	36,189	37,322	28,026	--	--	--	--	--
35 - 39	523	204	165	130	23	1	--	--	--	--
	37,073	34,902	36,029	41,801	38,204	11,475	--	--	--	--
40 - 44	728	179	188	184	132	44	1	--	--	--
	40,055	36,110	36,892	41,191	45,667	47,873	46,722	--	--	--
45 - 49	824	191	171	150	159	101	36	16	--	--
	42,728	35,693	40,402	42,835	48,333	48,011	48,029	49,594	--	--
50 - 54	1,056	165	166	193	150	129	140	113	--	--
	44,961	35,620	42,380	40,898	45,742	50,512	53,822	50,982	--	--
55 - 59	883	126	110	142	125	83	139	148	10	--
	46,362	34,814	39,320	43,021	46,221	51,162	56,058	53,242	42,074	--
60 - 64	483	67	83	63	64	49	62	56	36	3
	45,835	33,489	38,079	43,086	44,088	55,143	54,570	57,124	48,036	61,438
65 - 69	130	11	27	21	21	21	8	9	7	5
	44,349	40,209	39,632	39,341	43,783	46,992	65,069	50,541	48,342	41,360
70 & over	70	7	9	25	9	7	6	3	1	3
	42,045	52,350	29,021	42,453	38,264	45,699	40,923	46,436	66,248	46,271
Total	5,756	1,755	1,133	946	685	435	392	345	54	11
	\$41,529	\$34,564	\$38,167	\$41,717	\$45,799	\$49,973	\$54,215	\$52,833	\$47,309	\$48,175

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

**EXHIBIT C**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended September 30, 2008	Year Ended September 30, 2007
<b>Contribution income:</b>		
Employer contributions	\$30,350,011	\$71,301,428
Member purchase of additional service	<u>90,934</u>	<u>121,211</u>
Net contribution income	\$30,440,945	\$71,422,639
<b>Investment income:</b>		
Interest, dividends and other income	\$10,524,608	\$8,610,957
Adjustment toward market value	31,069,844	53,230,233
Less investment and administrative fees	<u>-4,048,808</u>	<u>-3,768,745</u>
Net investment income	<u>37,545,644</u>	<u>58,072,445</u>
<b>Total income available for benefits</b>	<b>\$67,986,589</b>	<b>\$129,495,084</b>
<b>Less benefit payments:</b>		
Retirement payments	-\$35,199,809	-\$33,218,216
DROP distributions	-5,289,331	-3,644,821
Pension service transfer payments	<u>-50,208</u>	<u>-128,108</u>
Net benefit payments	-\$40,539,348	-\$36,991,145
<b>Change in reserve for future benefits</b>	<b>\$27,447,241</b>	<b>\$92,503,939</b>

**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, 2008	Year Ended September 30, 2007
<b>Cash equivalents</b>	\$48,611	\$129,867
<b>Accounts receivable:</b>		
Accrued interest and dividends	\$1,285,288	\$1,099,719
Contributions	<u>1,434,753</u>	<u>6,256,291</u>
Total accounts receivable	2,720,041	7,356,010
<b>Investments:</b>		
Debt securities	\$128,294,052	\$123,025,861
Managed funds	212,692,419	243,356,462
Common stock and other	<u>247,727,491</u>	<u>314,920,152</u>
Total investments at market value	<u>588,713,962</u>	<u>681,302,475</u>
<b>Total assets</b>	\$591,482,614	\$688,788,352
<b>Less accounts payable</b>	-\$601,054	-\$655,766
<b>Net assets at market value*</b>	<u>\$590,881,560</u>	<u>\$688,132,586</u>
<b>Net assets at actuarial value*</b>	<u>\$674,016,719</u>	<u>\$646,569,478</u>

*\*Includes \$38,431,269 DROP account balances in 2008 and \$34,332,543 in 2007*



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

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**EXHIBIT E**

**Development of Unfunded Actuarial Accrued Liability for Year Ended September 30, 2008**

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1. Unfunded actuarial accrued liability at beginning of year		\$86,006,546
2. Normal cost at beginning of year		17,196,998
3. Total contributions		-30,440,945
4. Interest		
(a) For whole year on (1) + (2)	\$8,256,284	
(b) For half year on (3)	<u>-1,217,637</u>	
(c) Total interest		<u>7,038,647</u>
5. Expected unfunded actuarial accrued liability		\$79,801,246
6. Changes due to:		
(a) (Gain)/loss	\$12,013,890	
(b) Change in assumptions	0	
(c) Change in funding method	0	
(d) Change in statutory limits	<u>10,171</u>	
(e) Total changes		<u>12,024,061</u>
7. Unfunded actuarial accrued liability at end of year		<u>\$91,825,307</u>

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

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#### EXHIBIT F

#### Section 415 Limitations

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Section 415 of the Internal Revenue Code (IRC) specifies the maximum benefits that may be paid to an individual from a defined benefit plan and the maximum amounts that may be allocated each year to an individual's account in a defined contribution plan.

A qualified pension plan may not pay benefits in excess of the Section 415 limits. The ultimate penalty for non-compliance is disqualification: active participants could be taxed on their vested benefits and the IRS may seek to tax the income earned on the plan's assets.

In particular, Section 415(b) of the IRC limits the maximum annual benefit payable at the Normal Retirement Age to a dollar limit of \$160,000 indexed for inflation. That limit is \$185,000 for 2008. Normal Retirement Age for these purposes is age 62. These are the limits in simplified terms. They must be adjusted based on each participant's circumstances, for such things as age at retirement, form of benefits chosen and after tax contributions.

Benefits in excess of the limits may be paid through a qualified governmental excess plan that meets the requirements of Section 415(m).

Legal Counsel's review and interpretation of the law and regulations should be sought on any questions in this regard.

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

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### EXHIBIT G

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

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### **Amortization of the Unfunded**

**Actuarial Accrued Liability:** Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

### **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. Retired participants as of the valuation date (including 441 beneficiaries in pay status and 2 retired participants in suspended status)		3,820
2. Participants inactive during year ended September 30, 2008 with vested rights		2,494
3. Participants active during the year ended September 30, 2008 (including 416 DROP participants)		5,756
Fully vested	4,002	
Not vested	1,754	

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

1. Normal cost		\$17,461,741
2. Actuarial accrued liability		765,842,026
Retired participants and beneficiaries	\$334,164,923	
Inactive participants with vested rights	47,689,277	
Active participants	383,987,826	
3. Actuarial value of assets (\$590,881,560 at market value)		674,016,719
4. Unfunded actuarial accrued liability		\$91,825,307

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

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**EXHIBIT I (continued)**

**Summary of Actuarial Valuation Results**

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The determination of the scheduled contribution is as follows:

1. Employer normal cost	\$17,461,741
2. Payment on unfunded actuarial accrued liability	7,552,413
3. Total scheduled contribution: (1) + (2), adjusted for timing	<u>\$26,072,575</u>
4. Projected compensation	\$238,701,628
5. Total scheduled contribution as a percentage of projected compensation: (3) ÷ (4)	10.92%

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

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**EXHIBIT II**

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

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<b>Plan Year Ended September 30</b>	<b>Annual Required Contributions</b>	<b>Actual Contributions</b>	<b>Percentage Contributed</b>
2003	\$32,186,050	\$19,115,679	59.4%
2004	30,926,604	15,158,997	49.0%
2005	29,243,453	15,752,497	53.9%
2006	29,478,032	15,756,456	53.5%
2007	29,599,091	71,301,428	240.9%
2008	25,297,801	30,350,011	120.0%
2009	26,072,575	--	--

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**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>
10/01/2003	\$424,917,296	\$576,127,904	\$151,210,608	73.75%	\$228,550,406	66.16%
10/01/2004	431,853,406	602,795,470	170,942,064	71.64%	221,768,791	77.08%
10/01/2005	527,733,171	666,182,075	138,448,904	79.22%	223,837,003	61.85%
10/01/2006	554,065,539	695,889,716	141,824,177	79.62%	224,120,314	63.28%
10/01/2007	646,569,478	732,576,024	86,006,546	88.26%	231,029,237	37.23%
10/01/2008	674,016,719	765,842,026	91,825,307	88.01%	238,701,628	38.47%

\* 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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<b>Valuation date</b>	October 1, 2008
<b>Actuarial cost method</b>	Projected Unit Credit Cost Method
<b>Amortization method</b>	Level dollar amount for unfunded liability, open
<b>Remaining amortization period</b>	30 years remaining as of October 1, 2008
<b>Asset valuation method</b>	The market value of assets less unrecognized returns in each of the last five years, but no earlier than October 1, 2005. Unrecognized return is equal to the difference between the actual market return and the expected market return, and is recognized over a five-year period. The actuarial value is further adjusted, if necessary, to be within 20% of market value. The actuarial asset value was initialized at market value as of October 1, 2005.

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**Actuarial assumptions:**

Investment rate of return	8.00%
Projected salary increases	Varies by age, ranging from 3.825% to 7.226%
Cost of living adjustments	5.00% per year; maximum cumulative increase of 25%

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**Plan membership:**

Retired participants and beneficiaries receiving benefits	3,818
Terminated participants entitled to, but not yet receiving benefits	2,494
Active participants	<u>5,756</u>
Total	12,068

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**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 (%)		Disability (%)	
	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	0.14	0.06
45	0.16	0.10	0.21	0.12
50	0.26	0.14	0.63	0.30
55	0.44	0.23	0.77	0.42
60	0.80	0.44	0.49	0.30

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

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**Withdrawal Rates before Retirement:**

<b>Withdrawal Rate (%)</b>					
<b>With Less Than Four Years of Creditable Service</b>			<b>With Four or More Years of Creditable Service</b>		
<b>Creditable Service</b>	<b>Male</b>	<b>Female</b>	<b>Age</b>	<b>Male</b>	<b>Female</b>
0	25.0	22.5	20	25.00	13.90
1	17.0	16.0	25	17.80	12.34
2	13.0	13.0	30	10.24	9.14
3	11.5	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:**

<b>Age</b>	<b>Retirement Rate (%)</b>	<b>Age</b>	<b>Retirement Rate (%)</b>
55	6.0	63	15.0
56	3.5	64	20.0
57 – 59	5.0	65	40.0
60	10.0	66	25.0
61	15.0	67 – 69	20.0
62	25.0	70	100.0

In addition, the first year that a participant satisfies the requirements under the “Rule of 85,” retirement rate is assumed to be 65% (100% at age 70).

**Retirement Age for Inactive  
Vested Participants:**

For members who terminate employment with 30 or more years of creditable service or are eligible for a Rule of 85 pension, immediate commencement of benefits is assumed. All others are assumed to retire at age 62.

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

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**DROP Participants:** Participants in the DROP are assumed to remain in the DROP for 5 years. The standard retirement rates are assumed. Interest to the DROP account is assumed to be creditable at 6% for those participants who enter the DROP after January 21, 2003.

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**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 Compensation, Creditable Service, or both. The valuation assumes:

- 25 hours accrued each year
- 50% of accrued hours are “banked”
- 50% of banked hours are used first to increase Final Average Compensation
- The remainder of available banked hours is used to increase Creditable Service

**Percent Married:** 1960 U.S. census, varies by sex and age

**Age of Spouse:** Females (or males) are three years younger (or older) than their spouses

---

**Net Investment Return:** 8.00% per year, net of expenses

**Salary Increases:** Varies by age, ranging from 3.825% to 7.226%

**Increases in Social Security Taxable Wage Base:** 3.5% per year

**Cost-of-Living Adjustment:** 5% per year for 5 years

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

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**Increase in Section 415 and Section 401(a)(17) limits:** 4.5% per year

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**Actuarial Value of Assets:** The market value of assets less unrecognized returns in each of the last five years, but no earlier than October 1, 2005. Initial unrecognized return is equal to the difference between the actual market return and expected market return, and is recognized over a five-year period. The actuarial value is further adjusted, if necessary, to be within 20% of the market value. The actuarial asset value was initialized at the market value as of October 1, 2005.

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**Actuarial Cost Method:** Projected Unit Credit Actuarial Cost Method

**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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**Plan Year:** October 1 through September 30

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

- (a) The total compensation earned during the last two highest consecutive years of Creditable Service prior to termination (subject to the Section 401(a)(17) limit); and
- (b) 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 to the member under the Social Security Act in effect on the date the Benefit Compensation Base is determined calculated when the member terminates employment.

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

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**Normal Retirement:**

<i>Age Requirement</i>	65
<i>Service Requirement</i>	Five years of Creditable Service
<i>Amount</i>	The product of: (a) 1.30% of Final Average Compensation up to the Benefit Compensation Base, plus 2.05% of Final Average Compensation in excess of the Benefit Compensation Base, and (b) Creditable Service Minimum \$200 per month for retirees with 12 or more years of creditable service.

**Rule of 85 Retirement:**

<i>Age and Service Requirement</i>	Sum of Age and Creditable Service at date of termination equals or exceeds 85
<i>Amount</i>	The product of: (a) 1.30% of Final Average Compensation up to the Benefit Compensation Base, plus 2.05% of Final Average Compensation in excess of the Benefit Compensation Base, and (b) Creditable Service

**Early Service Retirement:**

<i>Age and Service Requirement</i>	Age 60 with five years of Creditable Service; or age 55 with 20 years of Creditable Service; or any age with 30 years of Creditable Service
<i>Amount</i>	Normal retirement amount reduced by 1/3% for each month benefit begins before age 65.

**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 an active employee at disablement
<i>Amount</i>	Normal retirement amount based on Creditable Service and Final Average Compensation at disability, payable immediately

---

**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 count 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.

The account balance is credited with interest annually. 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 Creditable Service and/or Final Average Compensation. 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 Creditable 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 an active employee
<i>Amount</i>	If married, 100% of the benefit the employee would have received had he or she retired the day before he or she died and elected the joint and 100% survivor option. If the employee died prior to eligibility for early service retirement, the spouse's benefit is deferred to the employee's earliest retirement date.  Death benefits may also be payable to members who have terminated employment. The cost of those benefits are paid for by the reduction of the accrued benefit payable to the inactive vested participant.

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**Post-Retirement Death Benefits:**

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 any one of these options is 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 the Consumer Price Index (CPI) for the fiscal year, subject to a maximum increase of 5.0% per year (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 increase in CPI 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.

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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.

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

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**Membership:** Immediate upon employment

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**Section 415 limit:** \$185,000

**Section 401(a)(17):** \$230,000

Note these limits were increased by the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA). The provisions of EGTRRA were scheduled to sunset December 31, 2010. Effective August 17, 2006, the Pension Protection Act made these changes permanent.

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