

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

**Actuarial Valuation
as of
October 1, 2014**

Produced by [Cheiron](#)

Revised April 2015

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LETTER OF TRANSMITTAL

April 21, 2015

Board of Pension Trustees
Employees Retirement System of the City of St. Louis
1114 Market Street, Suite 900
St. Louis, Missouri 63101

Dear Members of the Board:

At your request, we have conducted an actuarial valuation of the Employees Retirement System of the City of St. Louis as of October 1, 2014. The valuation is organized as follows:

- In Section I **Board Summary**, we describe the purpose of an actuarial valuation and summarize the key results found in this valuation.
- The **Main Body** of the report presents details on the System's:
 - Section II - Assets
 - Section III - Liabilities
 - Section IV - Contributions
 - Section V - Accounting Statement Information (GASB)
- In the **Appendices**, we conclude our report with detailed information describing the System's membership (Appendix A), actuarial assumptions and methods employed (Appendix B), and a summary of pertinent plan provisions (Appendix C).

The results of this report rely on future System experience conforming to the underlying assumptions. To the extent that actual System experience deviates from the underlying assumptions, the results will vary accordingly. The actuarial assumptions were adopted by the Board based on recommendations from the prior actuary from an experience study covering plan experience during the period from October 1, 2004 through September 30, 2009. While we consider these assumptions to be reasonable we have not as yet performed our own actuarial experience study on the assumptions.

The purpose of this report is to present the annual actuarial valuation of the Employees Retirement System of the City of St. Louis. This report is for the use of the Board and its auditors in preparing financial reports in accordance with applicable law and accounting requirements.

In preparing our report, we relied without audit, on information supplied by the Employees Retirement System of the City of St. Louis staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standards of Practice #23.



To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice as set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This actuarial report was prepared solely for the Employees Retirement System of the City of St. Louis for the purposes described herein. This valuation report is not intended to benefit third party, and Cheiron assumes no duty or liability to any such party.

Sincerely,
Cheiron



Stephen McElhaney, FSA, FCA, MAAA
Principal Consulting Actuary



Michael J. Noble, FSA, FCA, MAAA
Principal Consulting Actuary

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SECTION I
BOARD SUMMARY

The primary purpose of the actuarial valuation and this report is to measure, describe and identify as of the valuation date:

- The financial condition of the System,
- Past and expected trends in the financial progress of the System,
- The employers' contributions for Fiscal Year ending 2015, and
- Information required by the Governmental Accounting Standards Board (GASB).

In the balance of this Board Summary we present (A) the basis upon which this year's valuation was completed, (B) the key findings of this valuation including a summary of all key financial results, (C) comments on GASB 67 and GASB 68, (D) an examination of the historical trends, and (E) the projected financial outlook for the System.

A. Valuation Basis

This October 1, 2014 valuation represents Cheiron's fifth valuation performed for the Employees Retirement System of the City of St. Louis. This valuation continues to reflect the settlement between the Library, the Board of Trustees and the City of St. Louis dated September 7, 2012 (the "Library Settlement"). The Library, Zoo, Art Museum, Tower Grove Park, Taxicab Commission and Mental Health Board hereinafter the "Lawsuit Beneficiary Employers" have a reduced Unfunded Accrued Liability (UAL) Amortization rate to reflect the payments received due to the settlement as of the valuation date.

B. Key Findings of this Valuation

The key results of the October 1, 2014 actuarial valuation are as follows:

- The actuarially determined employer contribution rate as a percent of total compensation decreased from 15.17% as of October 1, 2013 to 13.93% as of October 1, 2014.
- The unfunded actuarial liability for the Employees Retirement System (ERS) decreased from \$204 million on October 1, 2013 to \$174 million on October 1, 2014.
- The System's funding ratio, the ratio of actuarial asset value over liabilities increased from 77.1% as of October 1, 2013 to 80.9% as of October 1, 2014.
- The primary factor in the improvement in the System's funded status was an overall experience gain of \$25.2 million.
 - During the year ended September 30, 2014, the System's assets earned 9.63% on a market value basis, but due to smoothing of prior investment gains and losses, the return on the actuarial asset value was 10.65% (as compared to 8.00% assumed). This resulted in an actuarial gain on investments of \$17.9 million.
 - On the liability side, the System experienced a total gain of \$7.3 million. The largest individual component of this gain is from a \$3.2 million gain due to salary increases

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being less than expected for continuing active participants. There is an additional net gain of \$2.7 million from participants not receiving the expected COLA and \$1.3 million gains from other sources.

C. GASB Statements Number 67 and 68

This actuarial valuation report reflects the provisions of GASB Statement No. 67 which was approved by GASB in June 2012. Statement No. 67 is effective for the System for its fiscal year ending September 30, 2014.

GASB Statement No. 68 will be effective for the City of St. Louis for its fiscal year ending June 30, 2015. For other employers, the effective date depends upon the particular fiscal year.

With the implementation of GASB Statements No. 67 and No. 68, there is no longer the concept of a GASB Annual Required Contribution (ARC). Any references in prior reports to the ARC have been replaced in this report by the term Actuarially Determined Contribution (ADC). The calculation of the ADC is identical to how the ARC was computed in prior years.

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Following is Table I-1 which summarizes all the key results of the valuation with respect to the System's membership, assets and liabilities, and contributions. The results are presented and compared for both the current and prior plan year.

**Table I-1
Employees Retirement System of the City of St. Louis
Summary of Principal Results**

Valuation as of:	October 1, 2013	October 1, 2014	% Change
<u>Participant Counts</u>			
Active Participants*	5,438	5,436	(0.04%)
Disabled Participants	187	197	5.35%
Retirees and Beneficiaries	4,067	4,117	1.23%
Terminated Vested Participants	<u>2,423</u>	<u>2,440</u>	<u>0.70%</u>
Total	12,115	12,190	0.62%
Annual Salaries of Active Members	\$ 224,623,445	\$ 227,039,143	1.08%
Annual Retirement Allowances for Retired Members and Beneficiaries	\$ 46,104,675	\$ 47,964,357	4.03%
<u>Assets and Liabilities</u>			
Actuarial Liability (AL)	\$ 889,448,579	\$ 911,979,146	2.53%
Actuarial Value of Assets (AVA)	<u>685,397,323</u>	<u>737,967,928</u>	<u>7.67%</u>
Unfunded Actuarial Liability (UAL)	\$ 204,051,256	\$ 174,011,218	(14.72%)
Funded Ratio	77.1%	80.9%	
<u>Contributions as a Percentage of Payroll</u>			
	Fiscal Year 2014	Fiscal Year 2015	
Normal Cost Rate	7.38%	7.35%	
City UAL Rate	<u>7.79%</u>	<u>6.58%</u>	
Total City Contribution Rate	15.17%	13.93%	
Reduction in UAL Rate for Lawsuit Beneficiary Employers	<u>0.05%</u>	<u>0.07%</u>	
Total Contribution Rate for Lawsuit Beneficiary Employers	15.12%	13.86%	
Actuarially Determined Contribution	\$ 34,060,798	\$ 31,605,493	

* Includes 440 DROP participants as of October 1, 2013 and 443 DROP participants as of October 1, 2014.

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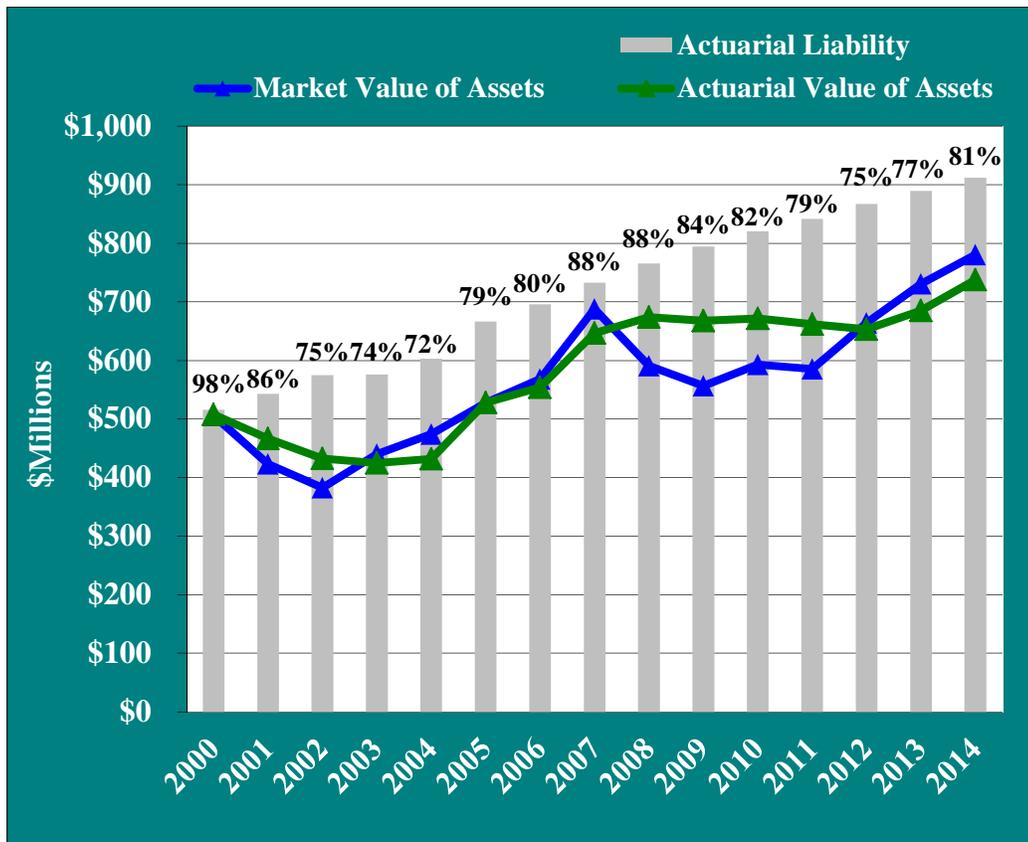
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BOARD SUMMARY**

D. Historical Trends

Despite the fact that for most retirement systems the greatest attention is given to the current valuation results and in particular the size of the current unfunded actuarial liability and the employer’s contribution, it is important to remember that each valuation is merely a snapshot in the long-term progress of a pension fund. It is more important to judge a current year’s valuation result relative to historical trends, as well as trends expected into the future.

Assets and Liabilities

There was a significant increase in the market value of assets (MVA) from \$730 million to \$780 million, returning 9.63%. With the asset smoothing method in place, the actuarial value of assets has tracked a slightly smoother path through the volatility of the market over recent years. The actuarial value of assets (AVA) increased from 2013 to 2014 returning 10.65% which includes the past three years of substantial investment gains offset by the substantial investment loss for the year ending in 2011.



The above chart compares the actuarial value of assets to the actuarial liabilities and shows the funded ratio, which is a comparison of the Actuarial Value of Assets and Actuarial Liability. This chart shows that the funded ratio had decreased for the four valuations prior to 2013 due to

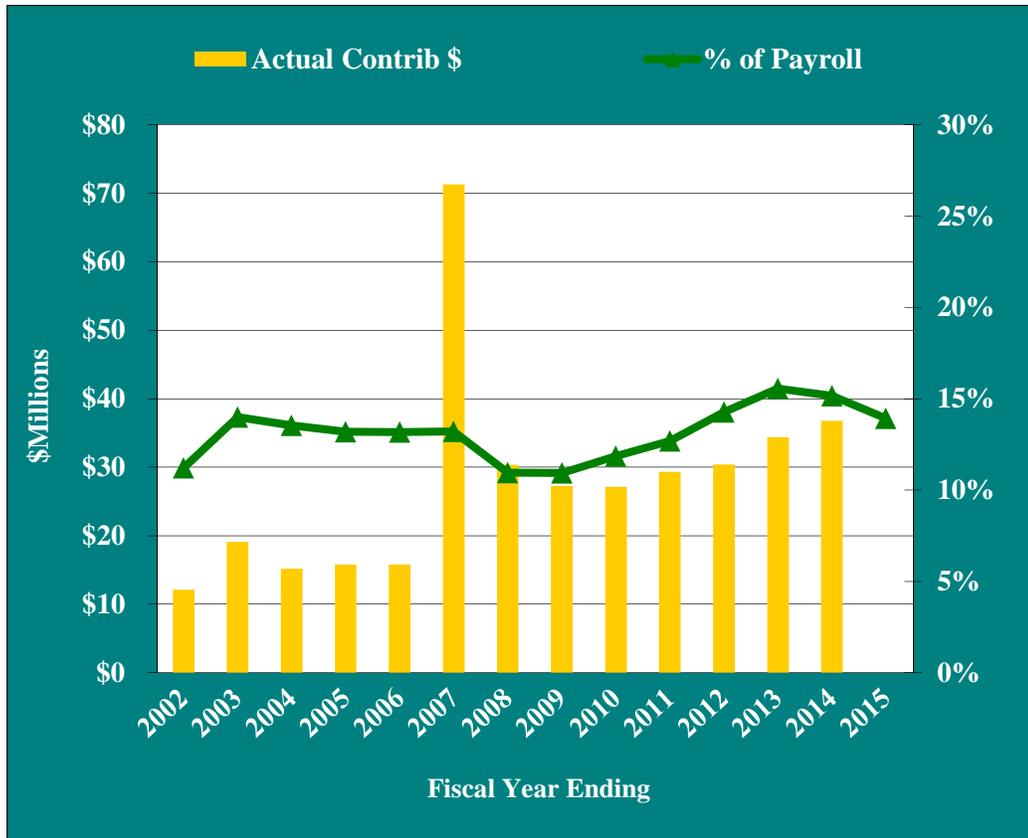
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the delayed recognition of the substantial market losses in 2008 and 2009, but has increased with the market rebounds at the last two valuation dates.

Contribution Rates

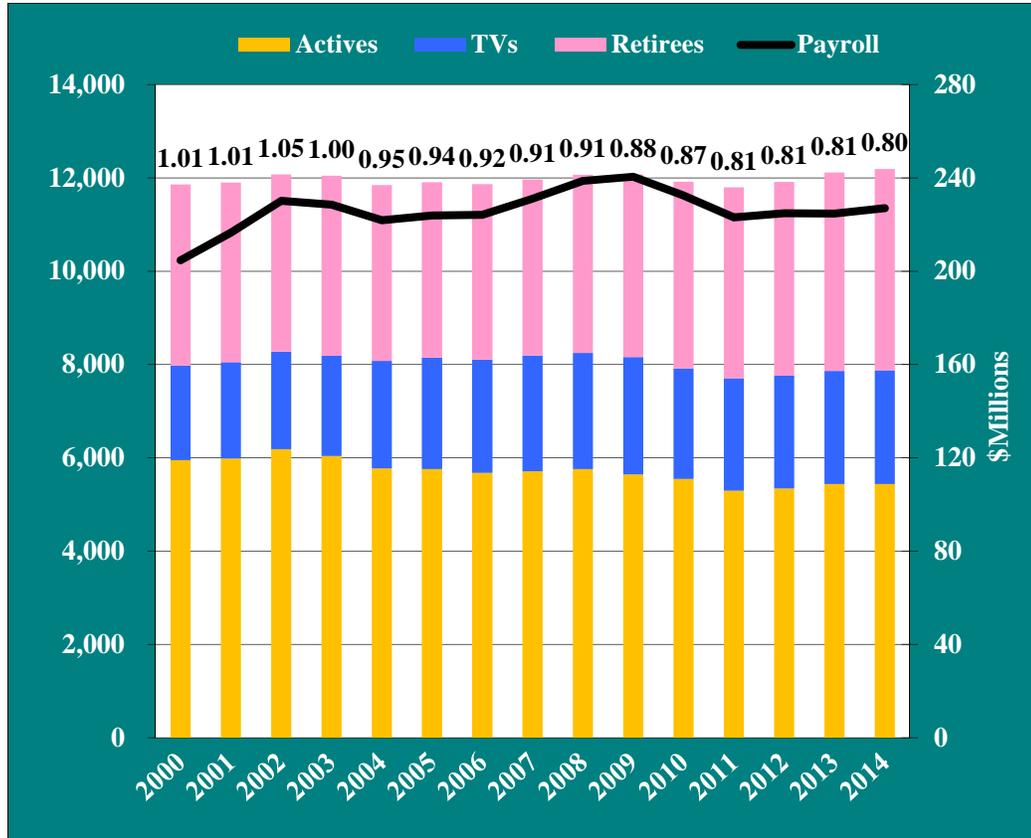
The yellow bars in this graph show the dollar amount of contributions made to the System (depicted on the left hand scale) since Fiscal Year Ending 2002. The green line shows the actuarial contribution rate (combined for all employers) as a percent of payroll (depicted on the right hand scale). Members do not make contributions to the System. The actuarial contribution rate decreased from 15.17% of payroll in 2013 to 13.93% of payroll in 2014 due to net actuarial gains.



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Participant Trends



The above chart provides a measure for the maturity in the System, by comparing the ratio of active members to inactive members (retirees and terminated-vesteds). The active-to-inactive ratio has declined since 2000 from 1.01 actives supporting each inactive member to 0.80 actives supporting each inactive member today.

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E. Future Expected Financial Trends

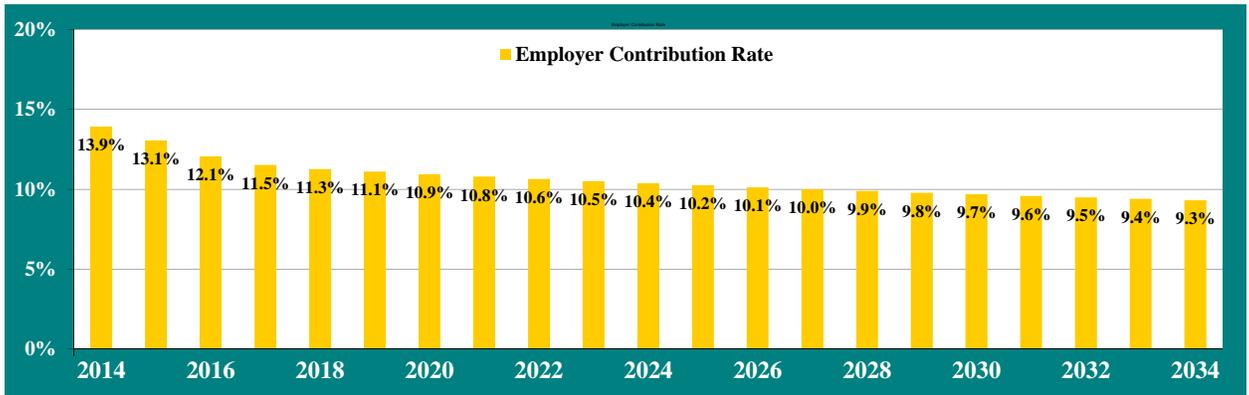
The analysis of projected financial trends is perhaps the most important component of this valuation. In this Section, we present the implications of the October 1, 2014 valuation results in terms of (1) the projected employer contributions, and (2) projected System’s funded status (ratio of assets over liabilities). For each projection set, we assume three different future investment return scenarios: baseline returns of 8.00%, optimistic returns of 9.50%, and pessimistic returns of 6.50%. The projections assume there will be no future gains or losses on the liability.

1. Contribution Rate Projections

The first set of charts show the employer’s projected actuarially determined combined contribution rates (gold bars). The years shown in the charts are plan years beginning October 1st.

Baseline returns of 8.00%

The chart below shows that the actuarially determined contribution rate will slowly decline from 13.9% to a level of 9.3% of pay by 2034. These projections assume that the System earns the assumed investment rate of 8.00% on market value. The expected decrease in contribution is due to the level dollar amortization of the unfunded actuarial liability, which would be expressed as a percentage of an increasing plan payroll.

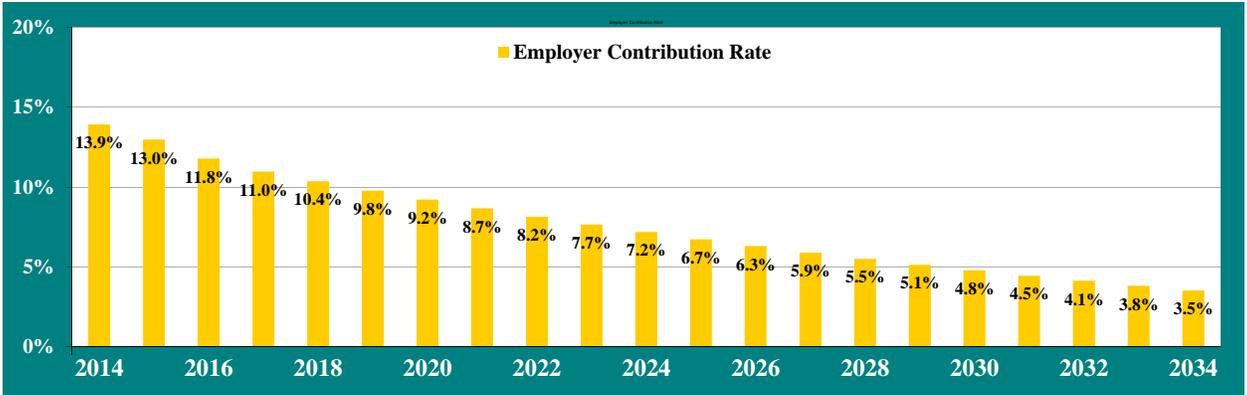


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Optimistic returns of 9.50%

If the System earns 1.50% greater than the assumed rate in each year of the projection, the actuarially determined contribution rate will steadily decrease to about 3.5% in 20 years.



Pessimistic returns 6.50%

If the System earns 1.50% less than the assumed rate in each year of the projection, the actuarially determined contribution rate decreases to 12.1% in 2017 and then slowly increases back to 13.8% over the remainder of the 20 year period.



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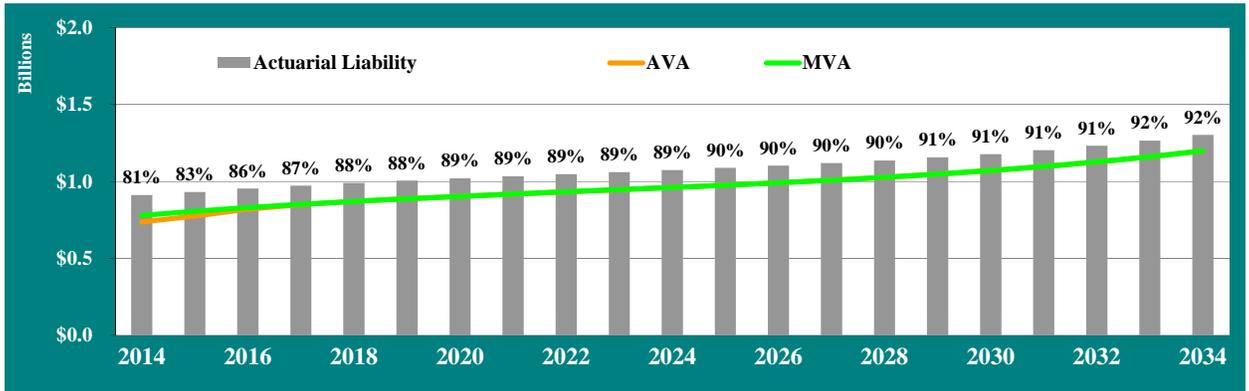
**SECTION I
BOARD SUMMARY**

2. Asset and Liability Projections

This next set of projection charts compare the market value of assets (green line) and the actuarial or smoothed value of assets (gold line) to the System’s actuarial liabilities (gray bars). In addition at the top of each chart, we show the System’s funded ratio (ratio of actuarial value of assets to actuarial liabilities). The projections assume that the actuarially determined contributions, as shown in the previous charts, are made each year. The years shown in the chart signify the valuation date as of October 1st.

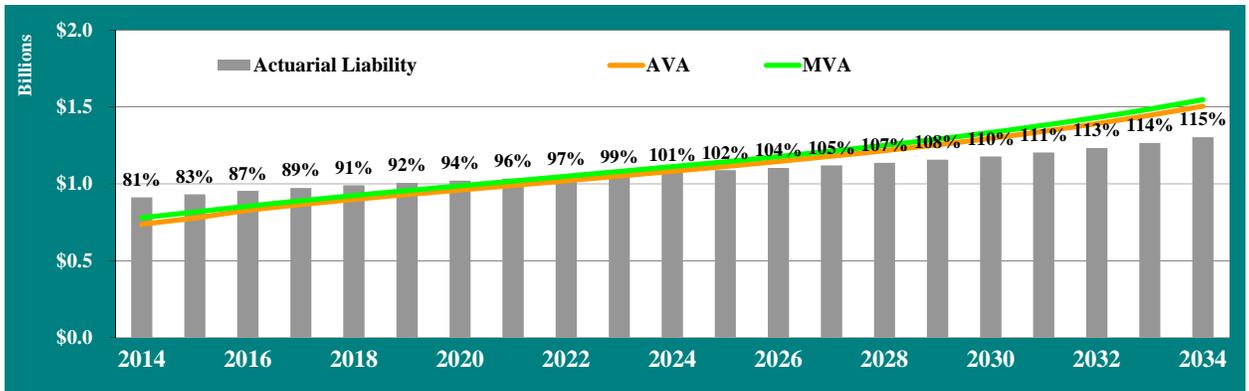
Baseline 8.00% return

Assuming that the System earns the assumed investment rate of 8.00%, the funded ratio will steadily increase from 81% to 92% during the 20 year period.



Optimistic Returns of 9.50%

If the System earns 1.50% greater than the assumed rate of return in each year of the projection, the funded ratio is projected to increase to 115% by 2034.

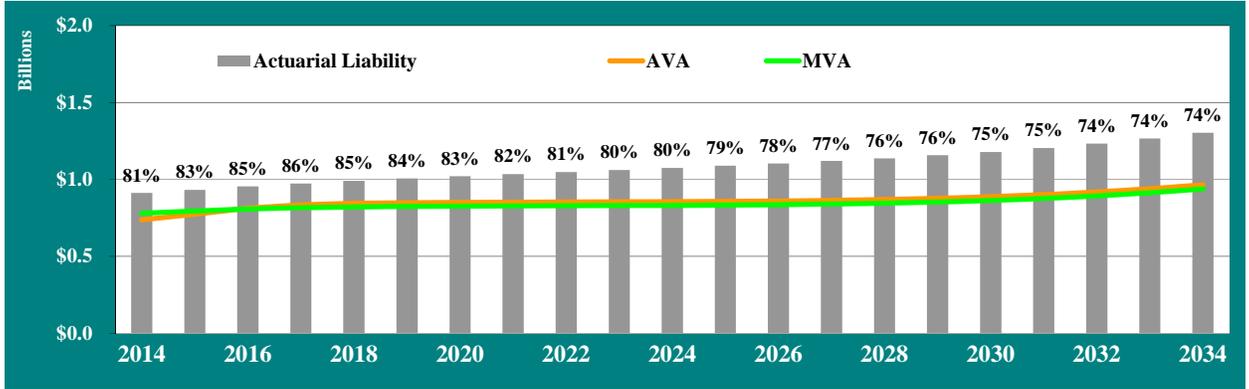


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Pessimistic Returns of 6.50%

If the System earns 1.50% less than the assumed rate of return in each year of the projection, the funded ratio will initially increase to 86% in 2017 due to delayed recognition of the current asset gains before decreasing to 74% by the end of the 20 year period.



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**SECTION II
ASSETS**

Pension Plan assets play a key role in the financial operation of the System and in the decisions the Trustees may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact benefit levels, employer contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on the System assets including:

- **Disclosure** of the System assets as of October 1, 2013 and October 1, 2014;
- Statement of the **changes** in market values during the year;
- Development of the **Actuarial Value of Assets**;
- An assessment of **investment performance**; and
- A projection of the System's expected **cash flows** for the next ten years.

Disclosure

There are two types of asset values disclosed in this valuation, the market value of assets and the actuarial value of assets. The market value represents a "snap-shot" or "cash-out" value which provides the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace. As a result, market values are usually not as suitable for long-range planning as are the actuarial value of assets which reflect smoothing of annual investment returns.

Table II-1 below discloses and compares each asset value as of September 30, 2013 and 2014.

Table II-1			
Statement of Assets at Market Value as of September 30,			
Assets	2013	2014	% Change
Cash	\$ 287,520	\$ 216,667	(24.64%)
Receivables	2,031,281	988,427	(51.34%)
Temporary cash investments	9,326,519	8,945,777	(4.08%)
Bonds	80,424,389	86,576,890	7.65%
Common stock	238,302,979	262,080,245	9.98%
Managed international equity funds	180,024,547	186,792,357	3.76%
Real estate funds	73,539,904	79,852,588	8.58%
Domestic bond funds	74,875,264	78,424,354	4.74%
Managed hedge fund of funds	72,375,220	77,331,606	6.85%
Accounts Payable	(697,410)	(713,277)	2.28%
Market Value of Assets	\$ 730,490,213	\$780,495,634	6.85%

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**SECTION II
ASSETS**

Changes in Market Value

Table II-2 below shows the components of change between the market value of assets as of September 30, 2013 and September 30, 2014.

Table II-2	
Changes in Market Values	
Value of Assets – September 30, 2013	\$ 730,490,213
<u>Additions</u>	
Payments from Members	\$ 129,164
Employer Contributions	36,788,260
Interest and Dividends	9,032,928
Investment Return	64,508,800
Total Additions	\$ 110,459,152
<u>Deductions</u>	
Investment Expenses	\$ 3,465,701
Benefit Payments	56,317,073
Administrative Expenses	670,957
Total Deductions	\$ 60,453,731
Value of Assets – September 30, 2014	\$ 780,495,634

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**SECTION II
ASSETS**

Actuarial Value of Assets

The next table, Table II-3 shows how the actuarial value of assets is developed. The actuarial value of assets method was initialized at market value as of October 1, 2005.

The actuarial value of assets represents a “smoothed” value developed by the actuary to reduce, or eliminate, erratic results which could develop from short-term fluctuations in the market value of assets. For this System, the actuarial value has been calculated by taking the market value of assets less 80% of the investment gain (loss) during the preceding year, less 60% of the investment gain (loss) during the second preceding year, less 40% of the investment gain (loss) during the third preceding year, and less 20% of the investment gain (loss) in the fourth preceding year. The investment gain (loss) is calculated by taking the difference between the expected value of assets based on an expected return of 8.00% and the actual value of assets. If the actuarial value of assets is less than 80% or more than 120% of the market value, an adjustment is made to the actuarial value to bring the value within this corridor. The tables below illustrate the calculation of actuarial value of assets for the October 1, 2014 valuation.

Table II-3 Development of Actuarial Value of Assets		
Market value of assets at September 30, 2013		\$ 730,490,213
Employer Contributions		36,788,260
Payments from Members		129,164
Benefit payments		(56,317,073)
Expected return at 8.00%		<u>57,678,159</u>
Expected Value at September 30, 2014		\$ 768,768,723
Actual Value at September 30, 2014		<u>780,495,634</u>
Investment (gain)/ loss		\$ (11,726,911)
	Total	
	Gain/(Loss)	Excluded Portion
Exclude 0% of 2010 gain/(loss)	\$ 11,508,109	\$ 0
Exclude 20% of 2011 gain/(loss)	(36,300,413)	(7,260,083)
Exclude 40% of 2012 gain/(loss)	51,546,305	20,618,522
Exclude 60% of 2013 gain/(loss)	32,979,563	19,787,738
Exclude 80% of 2014 gain/(loss)	11,726,911	<u>9,381,529</u>
Total excluded gain/(loss) for AVA calculation		\$ 42,527,706
Market value of assets at September 30, 2014		\$ 780,495,634
Total gain/(loss) excluded		<u>42,527,706</u>
Actuarial value of assets at September 30, 2014		\$ 737,967,928

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**SECTION II
ASSETS**

Investment Performance

The market value of assets (MVA) returned 9.63% during plan year ending September 30, 2014, which is greater than the assumed 8.00% return. A return of 10.65% was experienced on the actuarial value of assets (AVA), resulting in a slight actuarial loss for the year. Below, we show additional historical returns.

	MVA	AVA
2007	14.65%	10.17%
2008	-12.76%	5.85%
2009	-3.09%	1.52%
2010	10.11%	3.42%
2011	1.79%	1.25%
2012	16.95%	1.56%
2013	13.04%	7.99%
2014	9.63%	10.65%

Projection of System's Future Cash Flows

Year Beginning October 1,	Benefit Payments	Contributions	Net Cash Flow
2014	\$ 66,996,744	\$ 31,561,378	\$ (35,435,366)
2015	68,273,021	30,698,482	(37,574,539)
2016	72,850,259	29,330,241	(43,520,018)
2017	76,861,702	29,013,383	(47,848,319)
2018	80,099,396	29,351,665	(50,747,731)
2019	83,219,709	29,931,850	(53,287,859)
2020	85,845,831	30,536,288	(55,309,543)
2021	87,988,162	31,165,793	(56,822,369)
2022	89,891,908	31,821,209	(58,070,699)
2023	91,677,250	32,503,408	(59,173,843)

Expected contributions assume contribution rates as shown in the graph on page 7 and that payroll will increase at the actuarially assumed rate of 3.5% per year. Expected benefit payments are projected for the closed group valued at October 1, 2014. Projecting any farther than ten years using a closed-group would not yield reliable predictions due to the omission of new hires.

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**SECTION III
LIABILITIES**

In this section, we present detailed information on the System liabilities including:

- **Disclosure** of the System liabilities as of October 1, 2013 and October 1, 2014, and
- Statement of **changes** in these liabilities during the year.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them.

- **Present Value of All Future Benefits:** Used for measuring all future System obligations, represents the amount of money needed today to fully pay off all benefits of the System both earned as of the valuation date and those to be earned in the future by current plan participants, under the current plan provisions.
- **Actuarial Liability:** Calculated as of valuation date as the present value of benefits allocated to service prior to that date.

Table III-1, which follows, discloses each of these liabilities for the current and prior valuations. With respect to each disclosure, a subtraction of the appropriate value of plan assets yields, for each respective type, a **net surplus** or an **unfunded liability**.

Table III-1		
Liabilities/Net (Surplus)/Unfunded		
	October 1, 2013	October 1, 2014
<u>Present Value of Future Benefits</u>		
Active Participant Benefits	\$ 535,013,537	\$ 538,425,198
Participants currently receiving payments	421,672,814	438,134,788
Participants with a deferred vested benefit	<u>54,264,507</u>	<u>56,529,671</u>
Present Value of Future Benefits (PVB)	\$ 1,010,950,858	\$ 1,033,089,657
<u>Actuarial Liability</u>		
Active Participant Benefits	\$ 413,511,258	\$ 417,314,687
Participants currently receiving payments	421,672,814	438,134,788
Participants with a deferred vested benefit	<u>54,264,507</u>	<u>56,529,671</u>
Actuarial Liability (AL)	\$ 889,448,579	\$ 911,979,146
Actuarial Value of Assets (AVA)	<u>\$ 685,397,323</u>	<u>\$ 737,967,928</u>
Net (Surplus)/Unfunded (AL – AVA)	\$ 204,051,256	\$ 174,011,218

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**SECTION III
LIABILITIES**

Changes in Liabilities

Each of the Liabilities disclosed in the prior table are expected to change at each valuation. The components of that change, depending upon which liability is analyzed, can include:

- New hires since the last valuation
- Benefits accrued since the last valuation
- System amendments changing benefits
- Passage of time which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, or dying at rates different than expected
- A change in actuarial or investment assumptions
- A change in the actuarial funding method

Unfunded liabilities will change because of all of the above, and also due to changes in plan assets resulting from:

- Employer contributions different than expected
- Investment earnings different than expected
- A change in the method used to measure plan assets

In each valuation, we report on those elements of change which are of particular significance, potentially affecting the long-term financial outlook of the System. Below, we present key changes in liabilities since the last valuation.

In the table that follows, we show the components of change in the actuarial liability between October 1, 2013 and October 1, 2014.

Table III-2	
	Actuarial Liability
Liabilities October 1, 2013	\$ 889,448,579
Liabilities October 1, 2014	911,979,146
Liability Increase (Decrease)	22,530,567
Change Due to:	
Plan Amendments	0
Assumption Changes	0
Experience (Gain)/Loss	(7,265,891)
Benefits Accumulated and Other Sources	29,796,458

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SECTION III
LIABILITIES

In addition, we breakdown the change in actuarial liability further by showing the total actuarial (gain)/loss by source, as shown in Table III-3 below.

COLA less than expected	\$	(2,705,528)
Salary increase less than expected for continuing actives		(3,241,602)
Other sources		<u>(1,318,761)</u>
Experience (Gain)/Loss	\$	(7,265,891)

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**SECTION IV
CONTRIBUTIONS**

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funding status of the System. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

For this System, the funding method employed is the **Projected Unit Credit Actuarial Cost Method**. The objective under this method is to allocate the total pension benefit to which each participant is expected to become entitled at retirement to the participant's past and future service. This allocation is accomplished by applying the plan's accrual formula to projected final salary at retirement. The difference between the Projected Unit Credit actuarial liability and the actuarial value of assets is the unfunded actuarial liability.

The unfunded actuarial liability is amortized over a 30-year period as a level dollar amount for all years. The amortization payment is recalculated each year to reflect the entire unfunded actuarial liability as of the valuation date.

Table IV-1 below presents and compares the employer contribution rates for the System for this valuation and the prior one.

Table IV-1 Employer Contribution Rate		
	Fiscal Year Ending 2014	Fiscal Year Ending 2015
Projected Unit Credit Normal Cost Rate	7.38%	7.35%
UAL Amortization Payment for City	<u>7.79%</u>	<u>6.58%</u>
Actuarially Determined Contribution Rate for City	15.17%	13.93%
Reduction in UAL Amortization Payment for Lawsuit Beneficiary Employers	<u>0.05%</u>	<u>0.07%</u>
Actuarially Determined Contribution Rate for Lawsuit Beneficiary Employers	15.12%	13.86%

The Unfunded Actuarial Liability (UAL) is reamortized each year over a 30 year period. As of October 1, 2014, the Unfunded Actuarial Liability is \$174,011,218. This results in a total amortization payment of \$14,917,591. The amortization payment as a percent of payroll is different for City Employers and for Lawsuit Beneficiary Employers. This difference is attributable to the settlement between the Library, the Board of Trustees and the City of St. Louis dated April 5, 2010. The Unfunded Actuarial Liability as of October 1, 2013 was \$204,051,256 with a total amortization payment of \$17,492,857 for all employers combined. On the following page, Table IV-2 shows the detailed calculation of the current year UAL amortization rates for the City and Lawsuit Beneficiary Employers.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**SECTION IV
CONTRIBUTIONS**

Table IV-2 Amortization Schedule					
	UAL Amount	Period	Amount	Applicable Payroll	UAL Rate
UAL without regard to Library Settlement	\$ 174,303,599	30	\$ 14,942,657	\$ 227,039,143 ¹	6.58%
Unamortized Amounts from Library Settlement	<u>(292,381)</u>	30	<u>(25,066)</u>	34,667,422 ²	-0.07%
Total	\$ 174,011,218		\$ 14,917,591		

¹ Total payroll for all participating employers.

² Payroll for Lawsuit Beneficiary Employers

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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SECTION V
ACCOUNTING STATEMENT INFORMATION

This section provides accounting and financial disclosure information under Governmental Accounting Standards Board (GASB) Statement No. 67 for the Plan. GASB No. 25 was replaced by GASB No. 67 effective September 30, 2014 for Plan disclosures. We have prepared the following exhibits.

- Table V-1: Schedule of Changes in Net Pension Liability and Related Ratios
- Table V-2: Sensitivity of Net Pension Liability to Changes in Discount Rate
- Table V-3: Schedule of Employer Contributions

For contributing employers, GASB No. 68 will replace GASB No. 27 effective for fiscal years ending June 30, 2015 and later.

Determination of Discount Rate for GASB 67

We have assumed that employer contributions to the Plan will continue to follow the requirements of City Code. The total employer contribution rate is the sum of the normal cost rate plus an amortization of the Plan's unfunded liability. The normal cost rate is determined under the projected unit credit actuarial cost method while the UAL rate is that necessary to pay down the UAL with an open 30-year amortization with level dollar payments.

For calculations of Total Pension Liability we have used an assumed long-term expected rate of return of 8.09%, which is the valuation assumed rate of 8.0% increased by 0.09% reflecting administrative expenses. The reason for this adjustment is to maintain consistency, since the valuation assumption is net of administrative expenses and the GASB assumption must be prior to reflection of administrative expenses.

The Plan's Fiduciary Net Position is projected, based on the methods outlined in paragraphs 41-43 of GASB 67, to be sufficient to make all projected benefit payments for the current members when due. Therefore, the long-term expected rate of return on Plan investments (i.e., 8.09%) was applied to all periods of projected benefit payments to determine the Total Pension Liability (TPL). Additionally, the actuarial methods and assumptions used in developing the TPL, with the exception of the cost method, are the same as those used in developing the actuarial liability for funding purposes. Paragraph 46 of GASB 67 requires the use of the entry age actuarial cost method. As a result, the TPL differs from the actuarial liability calculated for funding purposes and shown in Section III of this report.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**SECTION V
ACCOUNTING STATEMENT INFORMATION**

GFOA Recommended Information

The Government Finance Officers Association (GFOA) maintains a checklist of items to be included in a public retirement system's Comprehensive Annual Financial Report (CAFR) in order to receive recognition for excellence in financial reporting. Although the Employees Retirement System does not issue a CAFR under GFOA guidelines, we have included certain schedules in this section for possible inclusion within the System's audited financial statements. These schedules are based on the funding actuarial liabilities rather than the GASB liabilities shown in Tables V-1, V-2 and V-3.

- Table V-4: Analysis of Financial Experience
- Table V-5: Solvency Test
- Table V-6: Schedule of Funding Progress

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**SECTION V
ACCOUNTING STATEMENT INFORMATION**

**Table V-1
Schedule of Changes in Net Pension Liability and Related Ratios
(\$ in millions)**

	FYE September 30, 2014
<u>Total Pension Liability</u>	
Service Cost	\$ 10,591,910
Interest	72,012,146
Change in Benefits	0
Change in Assumptions	0
Differences between Expected and Actual Experience	(3,664,735)
Benefit Payments	<u>(56,317,073)</u>
Net Change in Total Pension Liability	\$ 22,622,248
Total Pension Liability – Beginning	\$ 912,479,784
Total Pension Liability – Ending	\$ 935,102,032
<u>Plan Fiduciary Net Position</u>	
Contributions – Employer	\$ 36,788,260
Contributions – Employees	129,164
Net Investment Income	70,076,027
Benefit Payments	(56,317,073)
Administrative Expenses	<u>(670,957)</u>
Net Change in Plan Fiduciary Net Position	\$ 50,005,421
Plan Fiduciary Net Position - Beginning	\$ 730,490,213
Plan Fiduciary Net Position – Ending	\$ 780,495,634
Net Pension Liability - Ending	\$ 154,606,398
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	83.47%
Covered Employee Payroll	\$ 253,501,719
Net Pension Liability as a Percentage of Covered Employee Payroll	60.99%

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**SECTION V
ACCOUNTING STATEMENT INFORMATION**

Table V-2			
Sensitivity of Net Pension Liability to Changes in Discount Rate			
(\$ in millions)			
	1% Decrease 7.09%	Discount Rate 8.09%	1% Increase 9.09%
Total Pension Liability	\$ 1,028,648,784	\$ 935,102,032	\$ 855,046,558
Plan Fiduciary Net Position	<u>780,495,634</u>	<u>780,495,634</u>	<u>780,495,634</u>
Net Pension Liability	\$ 248,153,150	\$154,606,398	\$ 74,550,924
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	75.9%	83.5%	91.3%

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**SECTION V
ACCOUNTING STATEMENT INFORMATION**

Table V-3 Schedule of Employer Contributions (\$ in millions)	
	FYE 2014
Actuarially Determined Contribution	\$ 34,060,798
Contributions in Relation to the Actuarially Determined Contribution	<u>36,788,260</u>
Contribution Deficiency / (Excess)	\$ (2,727,462)
Covered Employee Payroll	\$253,501,719
Contributions as a Percentage of Covered Employee Payroll	14.51%

Notes to Schedule

Valuation Date October 1, 2013
 Timing Actuarially determined contribution rates are calculated based on the actuarial valuation at the beginning of the plan year.

Key Methods and Assumptions Used to Determine Contribution Rates

Actuarial Cost Method Projected Unit Credit Cost Method
 Asset Valuation Method Five year smoothing. See Appendix B for description
 Amortization Method Rolling 30-year level dollar amortization of unfunded liability
 Discount Rate 8.00%
 Inflation 3.125%
 Salary Increases 3.50% plus merit component based on employee's years of service
 Mortality 1994 Group Annuity Mortality Table

A complete description of the methods and assumptions used to determine contribution rates for the year ending September 30, 2014 can be found in the October 1, 2013 actuarial valuation report.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**SECTION V
ACCOUNTING STATEMENT INFORMATION**

**Table V-4
ANALYSIS OF FINANCIAL EXPERIENCE
Gain and Loss in Unfunded Actuarial Liability During Years Ended September 30
Resulting from Differences Between Assumed Experience and Actual Experience**
Gain (or Loss) for Year ending September 30,

Type of Activity	2010	2011	2012	2013	2014
Investment Income	\$ (30,170,089)	\$ (44,736,952)	\$ (42,041,794)	\$ (87,586)	\$ 17,899,526
Combined Liability Experience	<u>12,023,759</u>	<u>12,671,467</u>	<u>7,779,666</u>	<u>8,391,763</u>	<u>7,265,891</u>
Gain (or Loss) During Year from Financial Experience	\$ (18,146,330)	\$ (32,065,485)	\$ (34,262,128)	\$ 8,304,177	\$ 25,165,417
Non-Recurring Gain (or Loss) Items	<u>(3,960,992)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Composite Gain (or Loss) During Year	\$ (22,107,322)	\$ (32,065,485)	\$ (34,262,128)	\$ 8,304,177	\$ 25,165,417

**Table V-5
SOLVENCY TEST¹
Aggregate Actuarial Liabilities for**

Valuation Date October 1	Active Member Contributions	Retirees & Beneficiaries	Active Member Employer Financed Contributions	Actuarial Value of Reported Assets	Portion of Actuarial Liabilities Covered by Reported Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
2014	0	\$ 494,664,459	\$ 417,314,687	\$ 737,967,928	100%	100%	58%
2013	0	475,937,321	413,511,258	685,397,323	100%	100%	51%
2012	0	460,581,077	406,310,985	653,001,852	100%	100%	47%
2011	0	441,520,555	400,242,766	661,932,240	100%	100%	55%
2010	0	419,717,802	400,951,838	671,608,995	100%	100%	63%

¹ We will build to the required 10 years of disclosure information.

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**SECTION V
ACCOUNTING STATEMENT INFORMATION**

Table V-6 Schedule of Funding Progress						
Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Liability (b)	Unfunded Actuarial Liability (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	Percentage of Covered Payroll* [(b) - (a)] / (c)
10/1/2004	\$431,853,406	\$602,795,470	\$170,942,064	71.64%	\$221,768,791	77.08%
10/1/2005	\$527,733,171	\$666,182,075	\$138,448,904	79.22%	\$223,837,003	61.85%
10/1/2006	\$554,065,539	\$695,889,716	\$141,824,177	79.62%	\$224,120,314	63.28%
10/1/2007	\$646,569,478	\$732,576,024	\$86,006,546	88.26%	\$231,029,237	37.23%
10/1/2008	\$674,016,719	\$765,842,026	\$91,825,307	88.01%	\$238,701,628	38.47%
10/1/2009	\$667,667,205	\$794,686,379	\$127,019,174	84.02%	\$240,409,390	52.83%
10/1/2010	\$671,608,995	\$820,669,641	\$149,060,646	81.84%	\$232,451,661	64.13%
10/1/2011	\$661,932,240	\$841,763,321	\$179,831,081	78.64%	\$223,060,719	80.62%
10/1/2012	\$653,001,852	\$866,890,445	\$213,888,593	75.33%	\$224,822,252	95.14%
10/1/2013	\$685,397,323	\$889,448,579	\$204,051,256	77.06%	\$224,623,445	90.84%
10/1/2014	\$737,967,928	\$911,979,146	\$174,011,218	80.92%	\$227,039,143	76.64%

*Not less than zero

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**APPENDIX A
MEMBERSHIP INFORMATION**

Employees Retirement System of the City of St. Louis			
Table of Plan Coverage			
	October 1, 2013	October 1, 2014	% change
Active Members in Valuation			
Count	5,438	5,436	0.0%
Average Age	47.9	48.1	0.4%
Average Service	12.5	12.4	-0.2%
Total Payroll	\$ 224,623,445	\$ 227,039,143	1.1%
Average Anticipated Payroll	\$ 41,306	\$ 41,766	1.1%
Total Active Vested Members	3,859	3,786	-1.9%
DROP Members in Valuation (included in Active Members)			
Count	440	443	0.7%
Average Age	60.2	60.8	1.0%
Average Service	25.8	25.0	-3.2%
Total DROP Account Balances	\$ 20,040,808	\$ 19,601,775	-2.2%
Average DROP Account Balances	\$ 45,547	\$ 44,248	-2.9%
Vested Terminated Members			
	2,423	2,440	0.7%
Pensioners			
Number in Pay Status			
Retirees	3,612	3,667	1.5%
Disabled Retirees	<u>187</u>	<u>197</u>	5.3%
Total	3,799	3,864	1.7%
Average Age	72.61	72.73	0.2%
Average Monthly Benefit	\$ 916	\$ 937	2.3%
Beneficiaries in Pay Status			
	455	450	-1.1%

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**APPENDIX A
MEMBERSHIP INFORMATION**

Employees Retirement System of the City of St. Louis Inactive Participants by Type and Monthly Benefit Amount					
Monthly Amount	Total	Retirees	Terminated Vested	Disability	Beneficiaries
Total	6,754	3,667	2,440	197	450
Under \$500	3,864	1,615	1,985	63	201
\$500-1,000	1,360	787	368	90	115
\$1,000-1,500	714	550	66	33	65
\$1,500-2,000	391	327	16	9	39
\$2,000-2,500	162	150	1	1	10
\$2,500-3,000	91	78	2	1	10
\$3,000-3,500	62	56	2	0	4
\$3,500-4,000	36	34	0	0	2
\$4,000-4,500	35	34	0	0	1
\$4,500-5,000	14	12	0	0	2
\$5,000 & over	25	24	0	0	1

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**APPENDIX A
MEMBERSHIP INFORMATION**

Employees Retirement System of the City of St. Louis Status Reconciliation								
	<u>Active</u>	<u>Leave of Absence</u>	<u>DROP</u>	<u>Disabled</u>	<u>Retired</u>	<u>Beneficiary</u>	<u>Terminated Vested</u>	<u>Total</u>
Participant Count as of October 1, 2013	4,988	10	440	187	3,612	455	2,423	12,115
New hires	507	1	0	0	0	0	0	508
Leave of Absence	(9)	9	0	0	0	0	0	0
Rehires	6	(3)	0	0	0	0	(3)	0
Enter DROP	(110)	0	110	0	0	0	0	0
Return from DROP	53	0	(53)	0	0	0	0	0
Term Vested	(122)	(1)	(1)	0	0	0	124	0
Retired	(85)	0	(48)	(1)	214	0	(80)	0
Disabled	(15)	(1)	(1)	18	0	0	(1)	0
Deceased (with Beneficiary)	(2)	0	(4)	(7)	(30)	45	(2)	0
Deceased (without Beneficiary)	(1)	0	0	(1)	(133)	(25)	(2)	(162)
Term Not Vested	(231)	(1)	0	0	0	0	0	(232)
Benefits Expired	0	0	0	0	0	(25)	0	(25)
Status Correction	0	0	0	1	4	0	(19)	(14)
Net Change	(9)	4	3	10	55	(5)	17	75
Participant Count as of October 1, 2014	4,979	14	443	197	3,667	450	2,440	12,190

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

A. Actuarial Assumptions and Actuarial Cost Method

1. Mortality Rates:

Healthy: 1994 Group Annuity Mortality Table

Disabled: 1983 Railroad Retirement Board Disabled Life Mortality Table

Mortality improvement: During the period of the last experience study (2005-2009), which was performed by the prior actuary, it was noted that actual rates of mortality were significantly higher than the rates within these tables, and that the mortality rates effectively captured future mortality improvements. We have not independently reviewed this data but this conclusion by the prior actuary appears to be reasonable. This assumption will be reviewed during the next experience study which is currently scheduled for the period 2009-2014.

2. 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	0.11	0.05
45	0.16	0.10	0.17	0.10
50	0.26	0.14	0.50	0.24
55	0.44	0.23	0.62	0.34
60	0.80	0.44	0.39	0.24

3. Withdrawal Rates before Retirement:

With Less Than Four Years of Creditable Service			With Four or More Years of Creditable Service		
Creditable Service	Male	Female	Age	Male	Female
0	22.0	16.0	20	25.00	13.90
1	16.0	14.0	25	17.20	10.96
2	12.0	10.0	30	10.80	8.40
3	10.0	8.0	35	8.44	7.10
			40	5.90	5.60
			45	4.30	4.40
			50	3.60	3.52
			55	3.10	2.60

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

4. Retirement Rates:

Age	Retirement Rate (%)	Age	Retirement Rate (%)
55	5.0	63	20.0
56	5.0	64	20.0
57 – 58	8.0	65	25.0
59	10.0	66	25.0
60	10.0	67-69	25.0
61	10.0	70	100.0
62	20.0		

In addition, in the first year that a participant satisfies the requirements under the “Rule of 85,” the retirement rate is assumed to be 75% if the age in the first year of eligibility is 55 or less and 60% if the age in the first year of eligibility is older than 55 (100% at age 70). After the first year of eligibility but before age 55, termination rates apply for retirement assumption.

5. 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 61.

6. DROP Participants

Participants in the DROP are assumed to remain in the DROP for 5 years. Interest to the DROP account is assumed to be creditable at 6% for those participants who enter the DROP after January 21, 2003. The standard retirement rates are assumed and no specific assumption is made with regard to election of DROP. The liability and normal cost associated with the retirement decrement has been increased by 3% to account for the additional cost associated with the resumption of active participants.

7. 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.

8. Rehires

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

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

9. Sick Leave

Sick leave may be used to increase either Final Average Compensation, Creditable Service, or both. Starting with the October 1, 2010 valuation, the actual unused credited sick leave hours on file were used in the valuation. Effective in July 2010, the accumulation of unused sick leave hours that can be used for benefit purposes, was frozen.

10. Percent Married

1960 US census varies by sex and age.

Age	Married (%)	
	Male	Female
20-24	56.7	77.3
25-29	77.2	86.2
30-34	85.6	88.7
35-39	88.3	88.2
40-44	89.2	85.9
45-49	88.4	82.5
50-54	86.9	77.1
55-59	84.8	70.0
60-64	82.8	61.4
65-69	79.4	51.3
70+	72.8	39.0

11. Age of Spouse

Females (or males) are three years younger (or older) than their spouses.

12. Net Investment Return

8.00% per year, net of investment and administrative expenses.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

13. Salary Increases

Varies by age, ranging from 3.500% to 7.017%.

Age	Salary Increase (%)
20	7.0174
25	6.2040
30	5.1790
35	4.4515
40	3.6589
45	3.5000
50	3.5000
55	3.5000
60	3.5000
65	3.5000
70+	0.0000

14. Increases in Social Security Table Wage Base

3.5% per year.

15. Cost-of-Living Adjustment

3.125% per year for 8 years and 0% thereafter.

16. Increase in Section 415 and Section 401(a)(17) limits

4.5% per year.

17. Changes in actuarial assumptions since last valuation

None.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. 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.

2. Actuarial Cost Method

The cost method for valuation of liabilities used for this valuation is the Projected Unit Credit method. This is one of a family of valuation methods known as accrued benefit methods. The chief characteristic of accrued benefit methods is that the funding pattern follows the pattern of benefit accrual. Under the Projected Unit Credit Actuarial Cost method, the normal cost is determined as that portion of each participant's projected benefit attributable to service expected to be earned in the upcoming plan year. The actuarial liability, which is determined for each participant as of each valuation date, represents the actuarial present value of the portion of each participant's projected benefit attributable to service earned prior to the valuation date.

One of the significant effects of this funding method is that, depending on the demographics of the population, the Projected Unit Credit method tends to produce lower costs in the early years. There is a possibility that as the population ages the annual cost could increase over time. Given a stable population, however, this method can produce a steady contribution as a percentage of payroll.

3. Amortization Method

The basic amortization method is to divide the total UAL of the System by a level dollar 30-year amortization factor. The amortization method is an open method in that the UAL is reamortized at each succeeding year over a new 30-year period.

To reflect the settlement between the Library, the Board of Trustees and the City of St. Louis two Unfunded Accrued Liability Amortization rates are calculated. The Library, Zoo, Art Museum, Tower Grove Park, Taxicab Commission and Mental Health Board collectively called the "Lawsuit Beneficiary Employers" have a reduced UAL Amortization rate to reflect the payments received due to the settlement as of the valuation date. First, the UAL amortization payment is determined for the combined plan (base payment). Second, the value of settlement payments made by the City are set up as gain bases and the Lawsuit Beneficiary Employers have a reduction in the contribution rate determined from the payment on these gain bases and their projected payroll. The

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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**APPENDIX B
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City's UAL amortization payment is determined only on the base payment. The Lawsuit Beneficiary Employers' UAL amortization payment is the base payment minus the amortization of the gain bases that result from settlement payments.

4. Changes in Actuarial Methods since last valuation

None.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
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APPENDIX C
SUMMARY OF PLAN PROVISIONS

1. Plan Year

October 1 through September 30.

2. 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. The amount of credited sick leave was frozen on July 17, 2010.

3. 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.

4. Normal Retirement

Age Requirement: 65.

Service Requirement: Five years of Creditable Service.

Amount: 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.

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5. Rule of 85 Retirement

Age/Service Requirement:	Sum of Age and Creditable Service at date of termination equals or exceeds 85.
Amount:	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.

6. Early Retirement

Age/Service Requirement:	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.
Amount:	Normal retirement amount reduced by 1/3% for each month benefit begins before age 65.

7. Disability

Age Requirement	None.
Service Requirement	Five years of Creditable Service and an active employee at disablement.
Amount	Normal retirement amount based on Creditable Service and Final Average Compensation at disability, payable immediately.

8. 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

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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. The unused credited sick leave hours was frozen as of July 17, 2010.

9. Vesting

Age Requirement: None.

Service Requirement: Five years of Creditable Service.

Amount: Normal or early service retirement amount.

10. Spouse Pre-Retirement Death Benefit

Age Requirement: None.

Service Requirement: Five years of Creditable and an active employee.

Amount: 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 costs of those benefits are paid for by the reduction of the accrued benefit payable to the inactive vested participant.

11. 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 any one of these options is elected, the benefit amount

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otherwise payable is reduced to reflect the coverage. If not elected, benefits are payable for the life of the employee without reduction.

12. Cost-of-Living Adjustment (COLA)

Based on the change in the Consumer Price Index (CPI) for the fiscal year, subject to a maximum increase of 3.125% 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%. 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 3.125% or more. Adjustments begin on the second January 1 after payments begin.

13. 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. The amount of credited sick leave was frozen on July 17, 2010.

14. Membership

Immediate upon employment.

15. Section 415 limit

\$210,000, effective January 1, 2015.

16. Section 401(a)(17) limit

\$265,000, effective January 1, 2015.

17. Changes Since Last Valuation

None.