

**Firefighters' Retirement Plan
of the City of St. Louis**

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

Produced by [Cheiron](#)

March 2015

Table of Contents

Letter of Transmittal	i
Section I – Board Summary	1
Section II – Assets	8
Section III – Liabilities	12
Section IV – Contributions	15
Section V – Accounting Statement Information	17
 <u>APPENDICES</u>	
Appendix A – Membership Information.....	24
Appendix B – Actuarial Assumptions and Methods.....	27
Appendix C – Summary of Plan Provisions	32

LETTER OF TRANSMITTAL

March 2, 2015

Board of Pension Trustees
Firefighters' Retirement Plan 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 Firefighters' Retirement Plan 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 Plan'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 Plan'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 Plan experience conforming to the underlying assumptions. To the extent that actual Plan 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 for the Firemen's Retirement System during the period October 1, 2005 through September 30, 2010. While we consider these assumptions to be reasonable we have not yet performed our own actuarial experience study on the assumptions.

The purpose of this report is to present the annual actuarial valuation of the Firefighters' Retirement Plan 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 Firefighters' Retirement Plan 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.

i



Board of Pension Trustees

March 2, 2015

Page ii

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 Firefighters' Retirement Plan of the City of St. Louis for the purposes described herein. This valuation report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

Sincerely,
Cheiron



Stephen McElhaney, FSA, FCA, MAAA
Principal Consulting Actuary



Janet Cranna, FSA, FCA, MAAA
Principal Consulting Actuary

FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT

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 Plan,
- Expected trends in the financial progress of the Plan,
- The City's 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, and (D) the projected financial outlook for the Plan.

A. Valuation Basis

Effective February 1, 2013, benefit accruals under the Firemen's Retirement System of St. Louis ("FRS") were frozen. The actuarial valuation for the FRS is prepared by Gabriel Roeder Smith & Company ("GRS"). The Firefighters' Retirement Plan of the City of St. Louis ("FRP") was established as of that date to provide retirement, disability, and death benefits for service rendered after the effective date. Years of service accrued under the FRS counts toward benefit accruals under the FRP, but benefits attributable to such service are offset by the benefits payable by the FRS. Under the FRP, the Plan provisions for Participants who were active as of February 1, 2013 ("Grandfathered Participants") are substantially the same as the plan provisions for the FRS, with some exceptions as detailed in Appendix C. This October 1, 2014 valuation represents Cheiron's first valuation performed for the Firefighters' Retirement Plan of the City of St. Louis.

All results shown as of October 1, 2013 were based on the prior actuary's valuation report.

B. Key Findings of this Valuation

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

- The actuarially determined City contribution decreased from \$8.9 million payable as of September 30, 2014 to \$7.4 million payable as of September 30, 2015.
- The unfunded actuarial liability decreased from \$58 million on October 1, 2013 to \$38 million on October 1, 2014.
- The Plan's funding ratio, the ratio of actuarial asset value over liabilities increased from 2.5% as of October 1, 2013 to 34.4% as of October 1, 2014.
- The primary factors in the improvement in the Plan's funded status were employer contributions of \$15.8 million and an overall experience gain of \$13.9 million.
 - During the year ended September 30, 2014, the Plan's assets earned -2.64% (net of investment and administrative expenses) on a market value basis, but due to

FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT

SECTION I
BOARD SUMMARY

smoothing of prior investment gains and losses, the return on the actuarial asset value was 1.34% (as compared to 7.625% assumed). This resulted in an actuarial loss on investments of \$0.1 million.

- On the liability side, the Plan experienced an actuarial experience gain of \$7.5 million. The largest individual components of this gain are from a \$3.8 million gain due to salary increases being less than expected for continuing active participants and a gain of \$3.9 million from disabilities fewer than expected. There were net experience losses of about \$0.2 million from other sources. In addition, there was a reduction of \$6.5 million in the actuarial liability related to programming and software differences from the prior actuary.

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 Plan 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.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION I
BOARD SUMMARY**

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

**Table I-1
Firefighters' Retirement Plan 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*	620	626	0.97%
Disabled Participants	0	1	N/A
Retirees and Beneficiaries**	9	21	133.33%
Terminated Vested Participants	<u>0</u>	<u>26</u>	<u>N/A</u>
Total	629	674	7.15%
Total Pensionable Payroll (as of 9/30) of Active Participants	\$ 34,978,665	\$ 34,938,772	(0.11%)
Total Annual Retirement Allowances for Inpay Participants and Beneficiaries	\$ 14,158	\$ 61,789	336.43%
<u>Assets and Liabilities</u>			
Actuarial Liability (AL)	\$ 59,755,249	\$ 58,535,952	(2.04%)
Actuarial Value of Assets (AVA)	<u>1,504,817</u>	<u>20,154,746</u>	<u>1239.35%</u>
Unfunded Actuarial Liability (UAL)	\$ 58,250,432	\$ 38,381,206	(34.11%)
Funded Ratio	2.5%	34.4%	
<u>Contributions (End Of Year)</u>			
	Fiscal Year 2014	Fiscal Year 2015	
Employer Normal Cost	\$ 5,222,860	\$ 4,729,698	
City UAL	3,719,575	2,493,594	
Administrative Expense	<u>0</u>	<u>212,343</u>	
Total City Contribution	8,942,435	7,435,635	
Expected Valuation Payroll	\$ 36,772,839	\$ 34,351,937	
Actuarially Determined Contribution as a Percentage of Payroll	24.32%	21.65%	

* Includes 19 FRP Only Participants as of October 1, 2013 and 52 FRP Only Participants as of October 1, 2014.

**Total retirees and beneficiaries shown in October 1, 2013 report included an additional 1,003 persons with benefits only from FRS.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION I
BOARD SUMMARY**

D. Future Expected Financial Trends

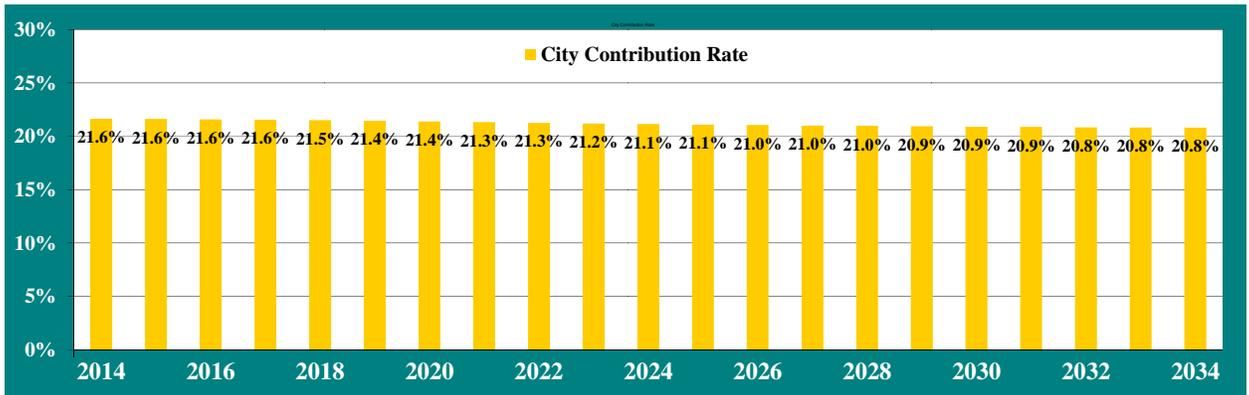
The analysis of projected financial trends is perhaps the most important component of this valuation. In this section, we present the implications of the October 1, 2014 valuation results in terms of (1) the projected employer contributions, and (2) projected Plan's funded status (ratio of assets over liabilities). For each projection set, we assume three different future investment return scenarios: baseline returns of 7.625%, optimistic returns of 9.125%, and pessimistic returns of 6.125%. 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 City's projected actuarially determined contribution rates (gold bars). The years shown in the charts are plan years beginning October 1st.

Baseline returns of 7.625%

The chart below shows that the actuarially determined contribution rate will slowly decline from 21.6% to 20.8% of pay by 2034. These projections assume that the Plan earns the assumed investment rate of 7.625% on market value. The expected decrease in contribution is due to Grandfathered Participants (who contribute 8% of pay) being replaced by new Plan Participants (who will contribute at 9% of pay).

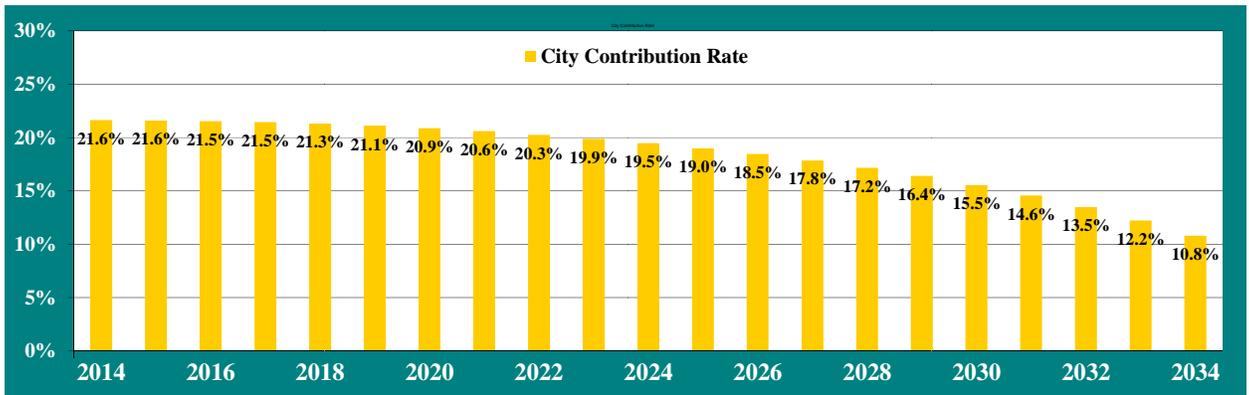


**FIREFIIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION I
BOARD SUMMARY**

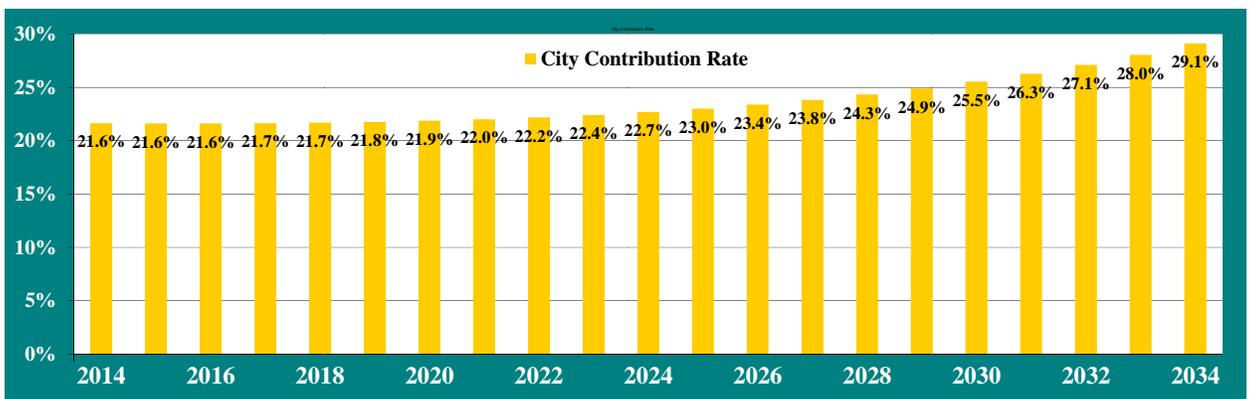
Optimistic returns of 9.125%

If the Plan earns 1.50% greater than the assumed rate in each year of the projection, the actuarially determined contribution rate will steadily decrease to about 10.8% in 20 years.



Pessimistic returns 6.125%

If the Plan earns 1.50% less than the assumed rate in each year of the projection, the actuarially determined contribution rate will steadily increase to about 29.1% in 20 years.



**FIREFIIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

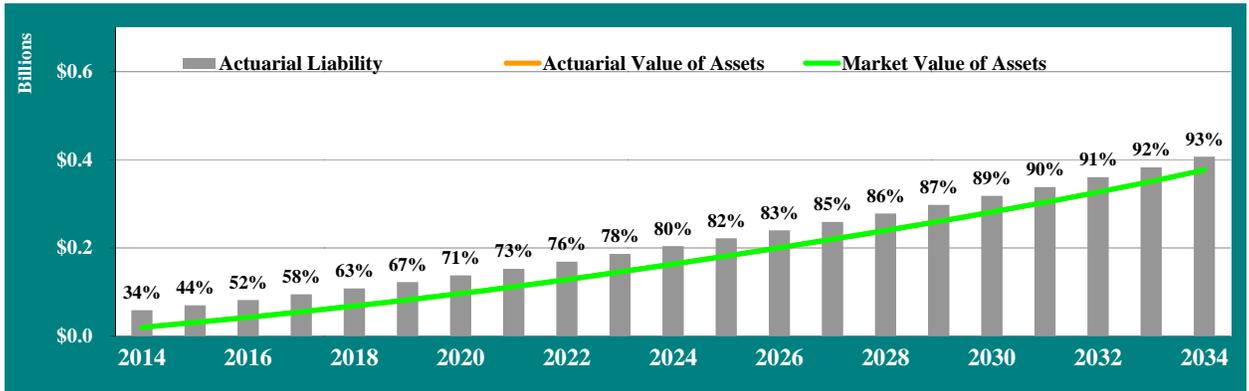
**SECTION I
BOARD SUMMARY**

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 Plan's actuarial liabilities (gray bars). In addition at the top of each chart, we show the Plan'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.

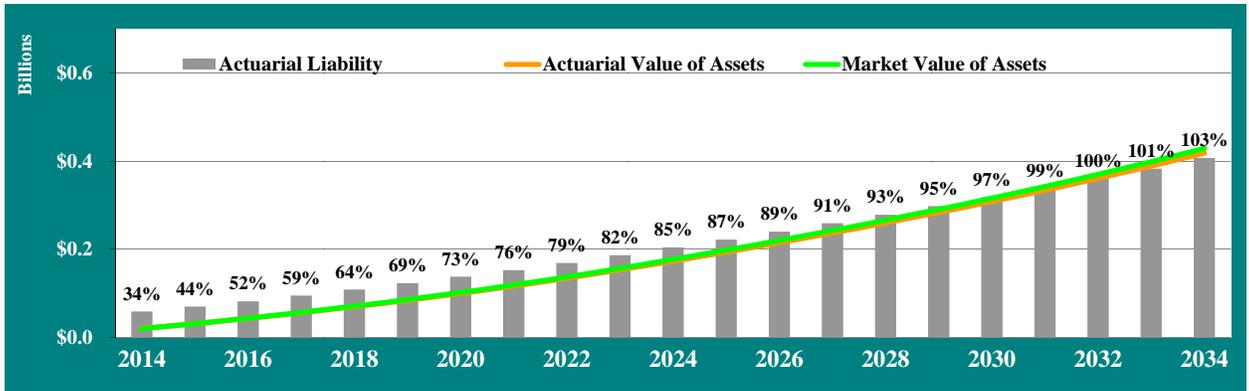
Baseline 7.625% return

Assuming that the Plan earns the assumed investment rate of 7.625%, the funded ratio will steadily increase from 34% to 93% during the 20 year period.



Optimistic Returns of 9.125%

If the Plan earns 1.50% greater than the assumed rate of return in each year of the projection, the funded ratio is projected to increase to 103% by 2034.

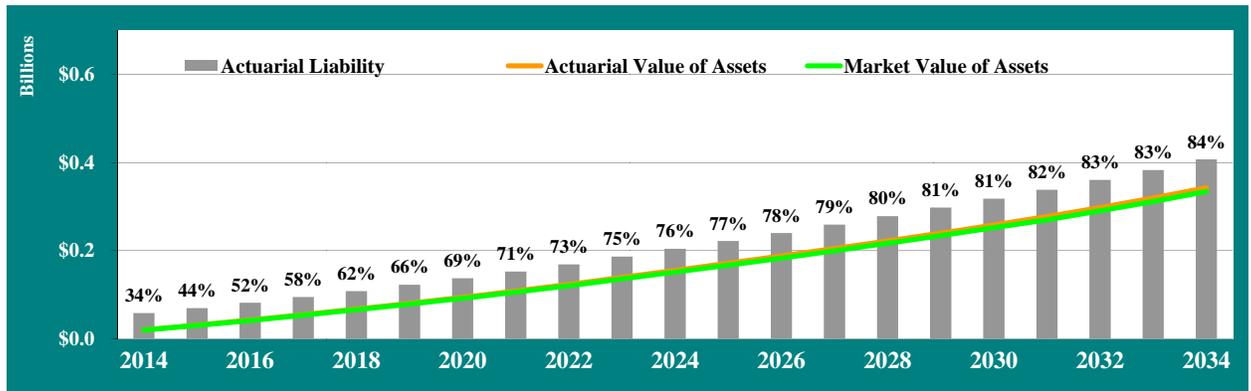


**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION I
BOARD SUMMARY**

Pessimistic Returns of 6.125%

If the Plan earns 1.50% less than the assumed rate of return in each year of the projection, the funded ratio is projected to increase to 84% by 2034.



**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION II
ASSETS**

Pension Plan assets play a key role in the financial operation of the Plan 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 Plan assets including:

- **Disclosure** of the Plan 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 Plan'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 September 30, 2014.

Table II-1			
Statement of Assets at Market Value as of September 30,			
Assets	2013*	2014	% Change
Cash	\$ 1,504,817	\$ 97,691	(93.51%)
Receivables	0	65,504	0.00%
Temporary Cash Investments	0	9,177,532	0.00%
Bonds	0	4,193,826	0.00%
Common Stock	0	6,182,912	0.00%
Pension Admin System	0	181,800	0.00%
Accounts Payable	0	(26,937)	0.00%
Market Value of Assets	\$ 1,504,817	\$ 19,872,328	1220.58%

* Excludes additional \$148,015 related to Receivables and Accounts Payable.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**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*		\$ 1,504,817
<u>Additions</u>		
Payments from Participants	\$ 2,813,290	
Employer Contributions	15,825,184	
Interest and Dividends	49,343	
Investment Return	(119,993)	
Total Additions	\$ 18,567,824	
<u>Deductions</u>		
Investment Expenses	\$ 9,178	
Benefit Payments	132,992	
Administrative Expenses	206,158	
Total Deductions	\$ 348,328	
Value of Assets – September 30, 2014		\$ 19,872,328

* Excludes additional \$148,015 related to Receivables and Accounts Payable.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**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, 2013.

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 Plan, 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 7.625% 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*	\$	1,504,817
Employer Contributions		15,825,184
Payments from Participants		2,813,290
Benefit Payments		(132,992)
Expected Return at 7.625%		<u>215,052</u>
Expected Value at September 30, 2014	\$	20,225,351
Actual Value at September 30, 2014		<u>19,872,328</u>
Investment (Gain)/ Loss	\$	353,023
	Total Gain/(Loss)	Excluded Portion
Exclude 0% of 2010 Gain/(Loss)	\$ 0	\$ 0
Exclude 20% of 2011 Gain/(Loss)	0	0
Exclude 40% of 2012 Gain/(Loss)	0	0
Exclude 60% of 2013 Gain/(Loss)	0	0
Exclude 80% of 2014 Gain/(Loss)	(353,023)	<u>(282,418)</u>
Total Excluded Gain/(Loss) for AVA Calculation		\$ (282,418)
Market Value of Assets at September 30, 2014	\$	19,872,328
Total Gain/(Loss) Excluded		<u>(282,418)</u>
Actuarial Value of Assets at September 30, 2014	\$	20,154,746

* Excludes additional \$148,015 related to Receivables and Accounts Payable.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION II
ASSETS**

Investment Performance

The market value of assets (MVA) returned -2.64% (net of investment and administrative expenses) during plan year ending September 30, 2014, which is less than the assumed 7.625% return. The rate of return on the MVA (net of investment expenses but not net of administrative expenses) was 2.51%. A return of 1.34% was experienced on the actuarial value of assets (AVA), resulting in a slight actuarial loss for the year.

Projection of Plan's Future Cash Flows

Table II-4 Projection of Plan's Expected Cash Flows					
Year Beginning October 1,	Benefit Payments	Administrative Expenses	Contributions	Net Cash Flow	
2014	\$ 608,981	\$ 212,343	\$ 10,260,185	\$ 9,438,861	
2015	887,148	218,713	10,574,087	9,468,226	
2016	1,384,275	225,274	10,897,164	9,287,615	
2017	1,841,023	232,033	11,229,685	9,156,629	
2018	2,431,936	238,994	11,571,928	8,900,999	
2019	3,058,520	246,163	11,919,086	8,614,403	
2020	4,233,751	253,548	12,276,659	7,789,359	
2021	4,693,716	261,155	12,644,959	7,690,088	
2022	4,539,381	268,989	13,024,307	8,215,937	
2023	6,367,072	277,059	13,415,037	6,770,906	

The contributions shown above reflect both City and Participant contributions. Expected City contributions assume contribution rates as shown in the graph on page 4 and that payroll will increase at the actuarially assumed rate of 3.0% 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. The net cash flow shown above excludes investment income.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION III
LIABILITIES**

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

- **Disclosure** of the Plan 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 Future Benefits:** Used for measuring all future Plan obligations, represents the amount of money needed today to fully pay off all benefits of the Plan 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:** Used for funding calculations, this liability is calculated as of valuation date as the present value of benefits allocated to service prior to that date using the entry age normal funding method.

Table III-1, which follows, discloses each of these liabilities for the current and prior valuations.

Table III-1		
Liabilities/Net (Surplus)/Unfunded		
	October 1, 2013	October 1, 2014
<u>Present Value of Future Benefits</u>		
Active Participant Benefits	\$ 122,451,704	\$ 114,915,294
Participants Currently Receiving Payments	182,293	1,038,811
Participants with a Deferred Vested Benefit	<u>0</u>	<u>70,569</u>
Present Value of Future Benefits (PVB)	\$ 122,633,997	\$ 116,024,674
<u>Actuarial Liability</u>		
Active Participant Benefits	\$ 59,572,956	\$ 57,426,572
Participants Currently Receiving Payments	182,293	1,038,811
Participants with a Deferred Vested Benefit	<u>0</u>	<u>70,569</u>
Actuarial Liability (AL)	\$ 59,755,249	\$ 58,535,952
Actuarial Value of Assets (AVA)	<u>\$ 1,504,817</u>	<u>\$ 20,154,746</u>
Net (Surplus)/Unfunded (AL – AVA)	\$ 58,250,432	\$ 38,381,206

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**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
- Plan 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 Plan. 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	\$ 59,755,249
Liabilities October 1, 2014	58,535,952
Liability Increase (Decrease)	(1,219,297)
Change Due to:	
Plan Amendments	0
Assumption Changes	0
Transition from Prior Actuary	(6,494,050)
Experience (Gain)/Loss	(7,440,838)
Benefits Accumulated and Other Sources	12,715,591

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**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.

Salary increase less than expected for continuing actives	\$ (3,803,267)
Disability fewer than expected	(3,854,952)
Other sources	<u>217,381</u>
Experience (Gain)/Loss	\$ (7,440,838)

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**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 Plan. 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 Plan, the funding method employed is the **Entry Age Normal (EAN) Actuarial Cost Method**. Under this method, the normal cost rate is computed as the average level annual percent of pay required to fund the retirement benefits for all Participants between their dates of hire and assumed dates of retirement. The EAN actuarial liability is the difference between the Plan's total present value of future benefits and the present value of future normal costs. The difference between the EAN actuarial liability and the actuarial value of assets is the unfunded actuarial liability (UAL).

The UAL is amortized over a 30-year closed period that began February 1, 2013, as a level percent of pay, assuming a 3% annual payroll growth.

Administrative expenses are assumed to be equal to last year's administrative expenses increased for inflation.

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

Table IV-1 Employer Contributions		
	Fiscal Year Ending 2014	Fiscal Year Ending 2015
Total Entry Age Normal Cost	\$ 8,297,222	\$ 7,554,248
Expected Employee Contributions	<u>(3,074,362)</u>	<u>(2,824,550)</u>
Employer (Net) Normal Cost	\$ 5,222,860	\$ 4,729,698
UAL Amortization Payment for City	\$ 3,719,575	\$ 2,493,594
Administrative Expenses	<u>0</u>	<u>212,343</u>
Actuarially Determined Contribution	\$ 8,942,435	\$ 7,435,635
Expected Valuation Payroll	\$ 36,772,839	\$ 34,351,937
Actuarially Determined Contribution as a Percentage of Payroll	24.32%	21.65%

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION IV
CONTRIBUTIONS**

Table IV-2 shows the detailed calculation of the current year UAL amortization rates for the City.

Table IV-2						
Amortization Schedule as of October 1, 2014						
	UAL Amount	Remaining Period	Amount (EOY)	Applicable Payroll	UAL Rate	
UAL Amortization Payment for City	\$ 38,381,206	28.33	\$ 2,493,594	\$ 34,351,937	7.26%	

FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT

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 City contributions to the Plan will continue to follow the requirements of City Code. The total City contribution rate is the sum of the net normal cost rate, an amortization of the Plan's unfunded liability, and administrative expenses. The normal cost rate is determined under the entry age normal actuarial cost method while the UAL rate is that necessary to pay down the UAL with a closed 30-year amortization that began February 1, 2013, as a level percent of payroll.

For calculations of Total Pension Liability (TPL) we have used an assumed long-term expected rate of return of 7.625%.

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 Participants when due. Therefore, the long-term expected rate of return on Plan investments (i.e. 7.625%) was applied to all periods of projected benefit payments to determine the Total Pension Liability (TPL).

The actuarial methods and assumptions used in developing the TPL are similar to those used in developing the actuarial liability for funding purposes except for DROP entry. Paragraph 46 of GASB 67 requires the use of the entry age actuarial cost method, which is the cost method used for funding. GASB 67 requires that DROP entry is treated the same as retirement from active service, whereas for funding, it is assumed that active service continues while a Participant is in DROP. Therefore, the value of the GASB 67 TPL differs from the actuarial liability determined for funding purposes.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**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 plan's Comprehensive Annual Financial Report (CAFR) in order to receive recognition for excellence in financial reporting. Although the Firefighters' Retirement Plan does not issue a CAFR under GFOA guidelines, we have included certain schedules in this section for possible inclusion within the Plan'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

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

**Table V-1
Schedule of Changes in Net Pension Liability and Related Ratios**

	FYE September 30, 2014
<u>Total Pension Liability</u>	
Service Cost	\$ 6,411,308
Interest	4,087,628
Change in Benefits	0
Change in Assumptions	0
Differences between Expected and Actual Experience	(5,359,993)
Benefit Payments	<u>(132,992)</u>
Net Change in Total Pension Liability	\$ 5,005,951
Total Pension Liability – Beginning	\$ 47,262,202
Total Pension Liability – Ending	\$ 52,268,153
<u>Plan Fiduciary Net Position</u>	
Contributions – Employer	\$ 15,825,184
Contributions – Employees	2,813,290
Net Investment Income	68,187
Benefit Payments	(132,992)
Administrative Expenses	<u>(206,158)</u>
Net Change in Plan Fiduciary Net Position	\$ 18,367,511
Plan Fiduciary Net Position - Beginning	\$ 1,504,817
Plan Fiduciary Net Position – Ending	\$ 19,872,328
Net Pension Liability - Ending	\$ 32,395,825
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	38.02%
Covered Employee Payroll	\$ 34,938,772
Net Pension Liability as a Percentage of Covered Employee Payroll	92.72%

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

Table V-2			
Sensitivity of Net Pension Liability to Changes in Discount Rate			
	1% Decrease 6.625%	Discount Rate 7.625%	1% Increase 8.625%
Total Pension Liability	\$ 58,872,340	\$ 52,268,153	\$ 46,457,687
Plan Fiduciary Net Position	<u>19,872,328</u>	<u>19,872,328</u>	<u>19,872,328</u>
Net Pension Liability	\$ 39,000,012	\$ 32,395,825	\$ 26,585,359
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	33.8%	38.0%	42.8%

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

Table V-3 Schedule of Employer Contributions	
	FYE 2014
Actuarially Determined Contribution	\$ 8,942,435
Contributions in Relation to the Actuarially Determined Contribution	<u>15,825,184</u>
Contribution Deficiency / (Excess)	\$ (6,882,749)
Covered Employee Payroll	\$ 34,938,772
Contributions as a Percentage of Covered Employee Payroll	45.29%

Notes to Schedule

Valuation Date

October 1, 2013

Timing

Actuarially determined contributions 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

Entry Age Normal Cost Method

Asset Valuation Method

Market value.

Amortization Method

Closed 30-year level percent amortization of unfunded liability as of February 1, 2013

Discount Rate

7.625%

Inflation

3.00%

Salary Increases

Varies based on employee's years of service

Mortality

Sex distinct RP-2000 Combined Mortality projected to 2015 using Scale AA

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.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

Table V-4 Analysis of Financial Experience¹ Gain and Loss in Unfunded Actuarial Liability During Years Ended September 30 Resulting from Differences Between Assumed Experience and Actual Experience	
Type of Activity	<i>Gain (or Loss) for Year ending September 30, 2014</i>
Investment Income	\$ (70,605)
Combined Liability Experience	<u>7,440,838</u>
Gain (or Loss) During Year from Financial Experience	\$ 7,370,233
Non-Recurring Gain (or Loss) Items	<u>6,494,050</u>
Composite Gain (or Loss) During Year	\$ 13,864,283

Table V-5 Solvency Test² Aggregate Actuarial Liabilities for								
Valuation Date October 1	Active Participant Contributions	Retirees & Beneficiaries	Active Participant Employer Financed Contributions		Actuarial Value of Reported Assets	Portion of Actuarial Liabilities Covered by Reported Assets		
	(1)		(2)	(3)		(1)	(2)	(3)
2014	4,400,350	\$ 1,109,380	\$ 53,026,222	\$ 20,154,746	100%	100%	28%	
2013	1,631,088	182,293	57,941,868	1,504,817	92%	0%	0%	

¹ We will build to the required 6 years of disclosure information.

² We will build to the required 10 years of disclosure information.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**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)
10/1/2013	\$1,504,817	\$59,755,249	\$58,250,432	2.52%	\$34,978,665	166.53%
10/1/2014	\$20,154,746	\$58,535,952	\$38,381,206	34.43%	\$34,938,772	109.85%

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX A
MEMBERSHIP INFORMATION**

Firefighters' Retirement Plan of the City of St. Louis			
Table of Plan Coverage			
	October 1, 2013	October 1, 2014	% change
Active Participants in Valuation			
Number			
FRP Only	19	52	173.7%
FRP with Frozen FRS Benefit	<u>601</u>	<u>574</u>	-4.5%
Total	620	626	1.0%
Average Age	45.1	45.6	1.0%
Average Service	16.1	16.1	0.0%
Total Pensionable Payroll (as of 9/30)	\$ 34,978,665	\$ 34,938,772	-0.1%
Average Total Pensionable Payroll	\$ 56,417	\$ 55,813	-1.1%
DROP Participants in Valuation (included in Active Participants)			
Number			
FRP DROP Account	3	15	400.0%
FRS DROP Account	<u>64</u>	<u>47</u>	-26.6%
Total	67	62	-7.5%
Average Age	50.8	52.0	2.3%
Average Service	25.2	25.4	0.8%
Total FRP DROP Account Balances	\$ N/A	\$ 12,938	N/A
Average FRP DROP Account Balances	\$ N/A	\$ 863	N/A
Vested Terminated Participants			
Number			
Total Account Balances	\$ 0	\$ 70,569	N/A
Pensioners			
Number in Pay Status			
Retirees	9	21	133.3%
Disabled Retirees	<u>0</u>	<u>1</u>	N/A
Total *	9	22	144.4%
Average Age	54.6	54.3	-0.6%
Average Monthly Benefit	\$ 131	\$ 234	78.5%
Beneficiaries in Pay Status	0	0	N/A

* The retiree count in the October 1, 2013 valuation was 1,012 which included 1,003 FRS retirees with no benefits payable from the FRP which have been excluded in the above counts.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX A
MEMBERSHIP INFORMATION**

Firefighters' Retirement Plan of the City of St. Louis Inactive Participants by Type and Monthly Benefit Amount				
Monthly Amount	Total	Retirees	Disability	Beneficiaries
Total	22	21	1	0
Under \$500	21	21	0	0
\$500-1,000	0	0	0	0
\$1,000-1,500	0	0	0	0
\$1,500-2,000	0	0	0	0
\$2,000-2,500	0	0	0	0
\$2,500-3,000	0	0	0	0
\$3,000-3,500	1	0	1	0
\$3,500-4,000	0	0	0	0
\$4,000-4,500	0	0	0	0
\$4,500-5,000	0	0	0	0
\$5,000 & over	0	0	0	0

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX A
MEMBERSHIP INFORMATION**

Firefighters' Retirement Plan of the City of St. Louis Status Reconciliation							
	<u>Active</u>	<u>DROP</u>	<u>Disabled</u>	<u>Retired</u>	<u>Beneficiary</u>	<u>Terminated with Refund</u>	<u>Total</u>
Participant Count as of October 1, 2013	553	67	0	9	0	0	629
New Hires	32	0	0	0	0	0	32
Enter DROP	(12)	12	0	0	0	0	0
Return from DROP	12	(12)	0	0	0	0	0
Terminated with Refund Only	(14)	0	0	0	0	14	0
Retired	(6)	(5)	0	11	0	0	0
Disabled	(1)	0	1	0	0	0	0
Deceased (with Beneficiary)	0	0	0	0	0	0	0
Deceased (without Beneficiary)	0	0	0	0	0	0	0
Term Not Vested	0	0	0	0	0	0	0
Status Correction	0	0	0	1	0	12	13
Net Change	11	(5)	1	12	0	26	45
Participant Count as of October 1, 2014	564	62	1	21	0	26	674

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

A. Actuarial Assumptions

1. Mortality Rates:

- Pre-Retirement: 85% of the healthy post-retirement rates. Mortality rates for duty-related deaths cease at age 50.
- Healthy Post-Retirement: RP-2000 Combined Healthy Mortality Table projected to 2015 using Scale AA
- Disabled Post-Retirement: 120% of the healthy post-retirement rates

Mortality improvement: The mortality tables for pre-retirement and post-retirement projected to 2015 using scale AA reasonably reflect the projected mortality experience of the Plan as of the measurement date. Based on the most recent experience review of FRS performed by GRS, this table provides a margin for near-term mortality improvements. We have not independently reviewed this data but this conclusion by the actuary of FRS appears to be reasonable. This assumption will be reviewed during the next experience study.

2. Mortality and Disability Rates before Retirement:

Sample rates are as follows:

Age	Mortality (%)*		Disability (%)**	
	Male	Female	Ordinary	Accidental
20	0.0220	0.0128	0.3	0.2
25	0.0275	0.0143	0.3	0.2
30	0.0350	0.0193	0.3	0.2
35	0.0610	0.0342	0.6	0.4
40	0.0813	0.0478	0.9	0.6
45	0.1053	0.0750	1.2	0.8
50	0.1384	0.1102	1.2	0.8
55	0.2310	0.2047	2.1	1.4
60	0.4503	0.3986	2.1	1.4

* Rates shown are for ordinary death. Accidental death rates are the same as for ordinary death up to age 50 and are 0% for ages 50 and above.

** Percentage of Type of Disability

- Ordinary 60%
- Accidental (unable to work as a firefighter) 32%
- Accidental (unable to work in any occupation) 8%

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

3. Withdrawal Rates before Retirement:

Years of Service	Withdrawal Rate (%)
0	7.50
1	4.00
2-7	2.25
8-13	1.25
14-19	0.50
20 or more	0.00

4. Retirement Rates:

Years of Service	Retirement Rate (%)*
20-29	5.0
30-34	15.0
35 or more	100.0

*100% retirement is assumed at age 65

5. Retirement Age for Inactive Vested Participants

For Participants who terminate employment with 10 or more years of creditable service, commencement of benefits at age 62 is assumed.

6. DROP Participants

Grandfathered Participants are assumed to enter the DROP program upon attaining 28 Years of Service. Grandfathered Participants with more than 28 Years of Service on the valuation date are assumed to enter the DROP the following year. Participants who enter the DROP are assumed to retire at the same retirement rates during the DROP period. Participants are assumed to return to active status after completing 5 Years of Service in the DROP if entered DROP with less than 30 Years of Service or exited DROP under age 65.

For funding, it is assumed that Participants remain in active plan status during DROP. For GASB 67 calculations, it is assumed that Participants move to inactive plan status when entering DROP and will not return to active status.

7. Unknown Data for Participants

Same as those exhibited by Participants with similar known characteristics. If not specified, Participants are assumed to be male.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

8. Sick Leave

Unused sick leave accrued prior to September 26, 2010 can be used to increase the credited service to calculate the Participant's final retirement benefit. It is assumed that the sick leave balance yields a fifteen percent increase in the retirement benefit and a lump sum equal to 60.3% of the accumulated sick leave balance (assumed to be twice the annual pension benefit the Participant is eligible to receive prior to sick leave adjustments, prorated by the amount of service earned as of September 26, 2010 to the service projected to be earned at retirement). We were unable to independently review these assumptions since we did not receive any information regarding the sick leave balance. This assumption will be reviewed during the next experience study.

9. Percent Married

100%.

10. Age of Spouse

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

11. Net Investment Return

7.6125% per year, net of investment expenses.

12. Salary Increases

Years of Service	Salary Increase (%)
0 - 4	5.50
5 - 9	5.00
10 - 14	3.75
15 or more	3.35

13. Payroll Growth

3.0% per year.

14. Increases in Consumer Price Index

3.0% per year.

15. Cost-of-Living Adjustment

Assumed to follow Plan provisions – 0% to 5% depending on age/years of service and type of retirement.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

16. Plan Administrative Expenses

All administrative expenses are paid from the fund. An amount is added to the actuarially determined contribution equal to the prior year's administrative expenses increased by the assumed inflation rate.

17. Widow Assumption

Will work as a special consultant for the Board of Trustees. Assume no children under age eighteen.

18. Changes in actuarial assumptions since last valuation

Net Investment Return – Net return for the year is no longer net of administrative expenses.

Plan Administrative Expenses – Administrative expenses have been added to the end of year actuarially determined contribution paid by the City.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

B. Actuarial Methods

1. Actuarial Value of Assets

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 7.625% 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.

2. Actuarial Cost Method

The cost method for the valuation of liabilities used for this valuation is the Entry Age Normal (EAN) method. This method was used for active employees, whereby the normal cost rate is computed as the average level annual percent of pay required to fund the retirement benefits for all Participants between their dates of hire and assumed dates of retirement. The EAN actuarial liability is the difference between the plan's total present value of future benefits and the present value of future normal costs. The unfunded actuarial liability is the difference between the actuarial liability and the actuarial value of assets.

3. Amortization Method

The amortization method is to divide the total unfunded actuarial liability of the Plan over the 30-year closed period that began February 1, 2013, as a level percentage of payroll, assuming a 3% annual payroll growth.

4. Changes in Actuarial Methods since last valuation

Actuarial Value of Assets – Moved from using the Market Value of Assets to using a smoothed method over a five-year period.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX C
SUMMARY OF PLAN PROVISIONS**

1. Plan Year

October 1 through September 30.

2. Average Final Compensation

The Average Final Compensation of the Participant during his last five years of covered employment. For a Grandfathered Participant, the final average compensation shall be based on the last two years of covered employment based on 365 days in a year. Compensation means the regular rate of annual compensation that a Participant would earn on the basis of the stated compensation for his rank or position.

3. Normal Retirement

Age Requirement: Age 55

Service Requirement: 20 Years of Service

Amount: 2% of Average Final Compensation for the first 25 Years of Service plus 2.5% (5% for Grandfathered Participants) of Average Final Compensation in excess of 25 Years of Service, to a maximum of 75% of Average Final Compensation.

The benefit is offset by any benefits payable from the FRS.

In addition to the pension, the Participant will receive a refund of contributions without interest made before February 1, 2013 (the "Effective Date"). Grandfathered Participants will receive a refund of contributions without interest provided they have 20 Years of Service as of the Effective Date.

4. Early Retirement

Age Requirement Prior to 55

Service Requirement: 20 Years of Service

Amount: Calculated as for Normal Retirement based on Average Final Compensation and Years of Service at termination. For participants who entered the Plan after the Effective Date and Grandfathered participants with less than 20 Years of Service as of the Effective Date, the portion of the benefit based on Years of Service after the Effective Date is actuarially reduced from age 55 to the pension

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX C
SUMMARY OF PLAN PROVISIONS**

commencement date. For Grandfathered Participants with 20 or more Years of Service as of the Effective Date, the entire benefit is unreduced at any age.

The benefit is offset by any benefits payable from the FRS.

In addition to the pension, the participant will receive a refund of contributions without interest made before the Effective Date. Grandfathered Participants will receive a refund of contributions without interest provided they have 20 Years of Service as of the Effective Date.

5. Ordinary Disability

Age Requirement None

Service Requirement 5 Years of Service

Amount The benefit for a disability not incurred in the line of duty that prevents work in any occupation is the greater of 1) 90% of the pension benefit accrued to date or 2) 25% of the Average Final Compensation.

The disability benefit incurred after the Effective Date will be paid by the Firefighters' Retirement Plan based on all Years of Service, including Years of Service incurred prior to the Effective Date.

In addition to the disability pension, the Participant will receive a refund of contributions without interest made before the Effective Date. Grandfathered Participants will receive a refund of contributions without interest provided they have 20 Years of Service as of the Effective Date.

6. Accidental Disability

Age Requirement None

Service Requirement None

Amount The benefit for a disability incurred in the line of duty that prevents work in any occupation is 75% of the Average Final Compensation.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX C
SUMMARY OF PLAN PROVISIONS**

The benefit for a disability incurred in the line of duty that prevents work as a firefighter, but not other gainful employment, is 25% of the Average Final Compensation plus 2.75% of Average Final Compensation for each Year of Service in excess of 10 Years of Service, up to 25 Years of Service. For a Participant with at least 25 Years of Service, the benefit is 75% of Average Final Compensation.

The entire disability benefit incurred after the Effective Date will be paid by the Firefighters' Retirement Plan based on all Years of Service, including Years of Service incurred prior to the Effective Date.

In addition to the disability pension, the participant will receive a refund of contributions without interest made before the Effective Date. Grandfathered Participants will receive a refund of contributions without interest provided they have 20 Years of Service as of the Effective Date.

7. DROP (Deferred Retirement Option Plan)

A Grandfathered Participant with 20 or more Years of Service may elect to enter the DROP program and defer retirement for up to five years while continuing active employment. The benefit payments the Participant would have received during that period are deposited into the DROP accumulation and earn interest at a rate equal to the percentage rate of return of the Trust Fund's investment portfolio for that year.

After five years or termination from the DROP plan, the Participant may retire or return to regular active service. Upon termination of employment, the Participant can choose to receive a lump sum of the DROP accumulation with interest earned or paid over a period not to exceed 10 years. If the Participant dies prior to termination of employment, the DROP account is paid as a lump sum to the Participant's beneficiary or estate. The beneficiary may waive the DROP and have all years of DROP service reinstated as Years of Service. Years of Service while in the DROP program is not included in the Years of Service used to calculate the Participant's final benefit amount.

8. Terminated Vested Pension (if Refund of Contributions is not elected)

Age Requirement: None

Service Requirement: 10 Years of Service (after the Effective Date - no service or accrued benefits in FRS)

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX C
SUMMARY OF PLAN PROVISIONS**

Amount: Service pension accrued. Benefit commences at age 62 in lieu of a refund of contributions.

9. Refund of Contributions Due to Termination

Age Requirement: None

Service Requirement: Less than 20 Years of Service

Amount: 100% of contributions with interest in lieu of a deferred or early benefit.

10. Pre- and Post-Retirement Death Benefit

Age Requirement: None

Service Requirement: None

Amount: The greater of 1) 25% of the Average Final Compensation or 2) \$2,400 annually. (50% if Accidental Death and 62.5% if Accidental Death at the scene of a fire). In addition, 10% of Average Final Compensation for up to three unmarried dependent children under age eighteen.

Any widow who is receiving retirement benefits, upon application to the Board of Trustees, shall be employed by the Board of Trustees as a special consultant, and shall be compensated in an amount, when added to other retirement benefits, shall not exceed the greater of 50% of Average Final Compensation or \$2,400.

If Accidental Death and the Participant had over 20 Years of Service at the Effective Date, then in addition to the pension, a refund of contributions without interest is made.

The entire pre-retirement death benefit incurred after the Effective Date will be paid by the Firefighters' Retirement Plan based on all Years of Service, including Years of Service prior to the Effective Date.

11. Lump-sum Death Benefit

Age Requirement: None

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX C
SUMMARY OF PLAN PROVISIONS**

Service Requirement: None

Amount: \$2,000 payable upon the death of an active or retired Participant.

12. Participant Contributions

New Members and Grandfathered Participants with less than 20 Years of Service as of the Effective Date: Contributions are 9% of pensionable wages.

For Grandfathered Participants with 20 or more Years of Service as of the Effective Date: Contributions are 8% of pensionable wages.

In DROP: Contributions are 1% of pensionable wages.

13. Cost-of-Living Adjustment (COLA)

For Grandfathered Participants: For retirements before attaining 25 Years of Service, the COLA is 1.5% per year up to age 60 and 5% per year after 60. For retirements after attaining 25 Years of Service but before attaining 30 years of service, the COLA is 2.25% per year up to age 60 and 5% per year after 60. For retirements after attaining 30 Years of Service, the COLA is 3% per year up to age 60 and 5% per year after 60. For retirements after age 60, the COLA is 5% per year. The maximum aggregate increase after age 60 for Grandfathered Participants is 25%.

For disabilities incurred in the line of duty in response to an emergency call that prevents work in any occupation, the COLA is 3% per year up to age 60 and 5% per year after 60, with a 25% maximum applied past age 60.

For participants who entered the Plan after the Effective Date or for disabilities other than those incurred in the line of duty in response to an emergency call that prevents work in any occupation: 3% per year up to a maximum of 25%.

COLAs are increased at each October 1, with the first increase following the Participant's date of retirement. All COLAs are subject to an upper limit of the Consumer Price Index (CPI) for the calendar year prior to the year the COLA is awarded.

14. Years of Service

Uninterrupted years and partial years from the first date of participation in the Plan (or FRS if earlier) to the date of retirement or termination of employment.

15. Participation

Immediate upon employment.

**FIREFIGHTERS' RETIREMENT PLAN OF THE CITY OF ST. LOUIS
OCTOBER 1, 2014 ACTUARIAL VALUATION REPORT**

**APPENDIX C
SUMMARY OF PLAN PROVISIONS**

16. Grandfathered Participants

A Participant who was employed on the day before the Effective Date and whose benefit accrued under the FRS was frozen as of the Effective Date.

17. Effective Date

February 1, 2013.

18. Changes Since Last Valuation

All pre-retirement deaths and disability benefits incurred after the Effective Date will be paid by the Firefighters' Retirement Plan based on all Years of Service, including Years of Service prior to the Effective Date.