

University of Missouri, St. Louis

IRL @ UMSL

UMSLCAB - UMSL's Political Science Millennial
Era Saint Louis Local Curated Area Budgets

Political Science Department

1-1-2007

Annual Actuarial Valuation, 2006

Firemen's Retirement System of St. Louis

Follow this and additional works at: <https://irl.umsl.edu/cab>

Recommended Citation

Firemen's Retirement System of St. Louis, "Annual Actuarial Valuation, 2006" (2007). *UMSLCAB - UMSL's Political Science Millennial Era Saint Louis Local Curated Area Budgets*. 442.

<https://irl.umsl.edu/cab/442>

This Book is brought to you for free and open access by the Political Science Department at IRL @ UMSL. It has been accepted for inclusion in UMSLCAB - UMSL's Political Science Millennial Era Saint Louis Local Curated Area Budgets by an authorized administrator of IRL @ UMSL. For more information, please contact marvinh@umsl.edu.

FIREMEN'S RETIREMENT SYSTEM OF ST. LOUIS
ANNUAL ACTUARIAL VALUATION

October 1, 2006

GRS

Gabriel Roeder Smith & Company

CONTENTS

<u>Section</u>	<u>Page</u>	
	1-4	<i>Introduction</i>
A		<i>Valuation Results and Asset Information</i>
	1-6	Summary of Actuarial Valuation Results
	7-8	Fund Balance Split
B		<i>GASB Statement No. 25</i>
	1	Schedule of Funding Progress
	2	Schedule of Employer Contributions
	3	Summary of Actuarial Methods and Assumptions
C		<i>Data Reflecting Plan Membership</i>
	1	Total Membership
	2	Active Non-DROP Member Data
	3	Active DROP Member Data
	4-11	Inactive Members in Payment Status
D		<i>Valuation Procedures</i>
	1	Actuarial Cost Method
	2-4	Actuarial Assumptions
	5-9	Brief Summary of Plan Provisions

February 13, 2007

The Pension Board
Firemen's Retirement System of St. Louis
1601 South Broadway
St. Louis, Missouri 63104

Dear Board Members:

We are pleased to present the report of the actuarial valuation of the Firemen's Retirement System of St. Louis as of October 1, 2006. An actuarial valuation of the system is performed annually as required by the Missouri State statutes. The valuation has been done to measure the funding status of the System and determine the contribution for the following year. It includes disclosure information required under GASB Statement No. 25. The assumptions and methods used were reviewed by the actuary and meet the parameters set for the disclosure presented in the financial section by Government Accounting Standards Board (GASB) Statement No. 25.

This valuation is based upon:

- a) **Data Relative to the Members of the System**—Data for active members and persons receiving benefits was provided by the System's staff. We have tested this data for reasonableness.
- b) **Asset Values**—The values of assets of the System were provided by the System's auditor. An actuarial value of assets was used to develop actuarial results for GASB Statement No. 25.
- c) **Actuarial Method**—The actuarial method utilized by the System as required by Missouri State statutes is the Frozen Entry Age Actuarial Cost Method. The objective of this method is to recognize the cost of the System on an aggregate basis as a level percentage of compensation. Any frozen unfunded actuarial accrued liability resulting from changes in plan provision, assumptions, or methods is separately amortized. All actuarial gains and losses under this method are reflected in future normal cost.
- d) **Actuarial Assumptions**—The actuarial assumptions used for this valuation have been changed based on the experience review for the years September 1, 2002, through October 1, 2005. They are set forth in the following pages.

The funding objective is to provide employer and employee contributions sufficient to provide the benefits of the System when due. The employer contributes the normal contribution rate (normal cost under Frozen Entry Age Actuarial Cost Method) plus the accrued liability rate (amortization of the frozen unfunded actuarial liability).

The valuation results set forth in this report are based on the data and actuarial techniques described above, and upon the provisions of the Fund as of the valuation date. Based on these items, we certify these results to be true and correct.

Respectfully yours,



Senior Consultant



Senior Consultant

MK: am

INTRODUCTION

Purposes of the Actuarial Valuation

At your request we have performed the actuarial valuation of the Firemen's Retirement System of St. Louis as of October 1, 2006.

The purposes of an actuarial valuation are as follows:

- To determine the funding status of the System as of the valuation date,
- To determine the current contribution level of the System required to fund the current benefit provisions, and
- To provide accounting and other data required by the System.

Report Highlights

The table below compares the key actuarial results from the October 1, 2006, valuation to the prior year's results. The key difference between this year's valuation and the prior year's valuation is the decrease in the City contribution from \$18.18 million for plan year ending September 30, 2006, to \$14.29 million for plan year ending September 30, 2007. The contribution for plan year ending September 30, 2007, was lower than the expected contribution amount of \$18.27 million. A shortfall in employer contributions had an increasing effect on the contribution amount while recognition of deferred investment gains, demographic gains, and assumptions changes had a decreasing effect on the contribution amount. Employer contributions for the plan year ending September 30, 2006, of \$4.11 million were \$14.07 million less than anticipated by the actuarial valuations. During the year, the actuarial value of assets increased from \$391.2 million to \$410.9 million as a result of the recognition of deferred investment gains.

<u>Summary of Results</u>	<u>2006</u>	<u>2005</u>
Total Contribution	\$ 14,285,300	\$ 18,179,873
Present Value of Benefits	559,060,938	557,683,990
Actuarial Value of Assets	410,868,775	391,181,701
Market Value of Assets ^a	419,362,665	409,621,491

^a Excluding Future Benefit Fund

INTRODUCTION (CONTINUED)

A reconciliation of the increase in City contributions is shown below (in millions).

Expected 2007 City contribution	\$	18.27
Increase due to contribution shortfall		2.00
Decrease due to investment gain		(2.08)
Decrease due to assumption changes		(2.98)
Other demographic gains		<u>(0.92)</u>
Actual 2007 City contribution	\$	14.29

Asset Information

The market value of the assets of the fund, which are available for benefits, has increased from \$409.6 million at the end of FY 2005 to \$419.4 million at the end of FY 2006. The actuarial value of assets also increased from \$391.2 million to \$410.9 million because of the recognition of deferred investment gains generated over the last three years. This is a direct consequence of the asset smoothing process.

The detailed determinations of asset values utilized in this valuation and asset growth in the last year are set forth in Section A.

GASB Disclosure

The Firemen's Retirement System of St. Louis produces its accounting statements under the terms of GASB Statement Number 25. Section B contains the Required Supplemental Information.

INTRODUCTION (CONTINUED)

Membership Characteristics

The next table shows the changes in the population of the fund. There have not been significant changes from the prior year.

<u>Population</u>	<u>2006</u>	<u>2005</u>
Retired Members	403	413
Disabled Members	342	341
Widows and Children	309	309
Total Inactive Members	1,054	1,063
Actives - Non-DROP	678	669
Actives - DROP ^a	28	27
Total Active and DROP Members	706	696

More detailed breakouts of the membership can be found in Section C.

Actuarial Assumptions and Methods

The assumptions and methods are based on the results of the experience review for the period September 1, 2002, through October 1, 2005. Below is a summary of the results. This set of assumptions and methods is disclosed in Section D.

- **Investment return:** We reviewed investment return experience and the current asset allocation relative to recent capital market pricing models. We believe the current assumption of 7.625 percent continues to be appropriate.

^a As of October 1, 2006, there are 170 employees with DROP account balances, of which 28 are active members participating in the DROP program.

INTRODUCTION (CONTINUED)

- **Salary increase:** We reviewed salary experience for plan years 2002 through 2005. Although experience over the period was varied, it is reasonable in combination with the investment return assumption to decrease the salary assumption from 4.5 percent to 4.0 percent per annum.
- **Standard mortality rates:** Previously, standard mortality was assumed to follow the 1994 Group Annuity Mortality table, with no set forward for males or females. Although experience over the study period varied from the assumed table, we did not recommend changing these rates because the actual experience is not credible given the small size of the group. The 1994 group annuity mortality table continues to be appropriate.
- **Disabled mortality rates:** The previous disabled mortality rates were based on the 1994 Group Annuity Mortality table with a six-year set forward for both males and females. Although experience over the study period varied from the assumed table, we did not recommend changing these rates because the actual experience is not credible given the small size of the group. As with the standard mortality table, the 1994 group annuity mortality table with a six-year set forward continues to be appropriate.
- **Disability rates:** The system experienced fewer disabilities than expected. This resulted in a reduction in the disability rates.
- **Withdrawal rates:** Actual withdrawal rates were slightly higher than the current assumptions. This resulted in an increase in the withdrawal rates.
- **Retirement rates:** Actual rates of retirement including elections to the DROP plan have generally been lower than the assumed rates. This resulted in a decrease in the retirement rates.
- **Cost of Living Adjustment (COLA) methodology:** The previous methodology for valuing the COLA benefit for retirees older than 60 assumes that members will receive 5.0 percent per year for five years. This method was changed to assume COLA after age 60 of 3.0 percent per year to be consistent with our inflation assumption of 3.0 percent per year.

Plan Provisions

The plan provisions used in this valuation are the same as those disclosed in the actuarial valuation report as of October 1, 2005. This set of plan provisions is described in Section D.

SECTION A

Valuation Results and Asset Information

SUMMARY OF ACTUARIAL VALUATION RESULTS

Determination of City Contributions

Present Value of All Future Benefits	Current
Retirees and Beneficiaries	\$ 277,038,118
Active Firemen	241,103,439
DROP Firemen	40,578,604
System Employees Benefit Fund	340,777
Total	\$ 559,060,938
Assets	
Actuarial Asset Value (3-year smoothing)	\$410,868,775
Present Value of Future Employee Contributions	22,113,494
Total	\$ 432,982,269
Unfunded Accrued Liability	\$ 29,710,789
Present Value of Future Normal Costs	\$ 96,367,880
Present Value of Future Salary	\$ 275,652,912
Normal Contribution Percent	34.960%
Covered Salary	\$ 34,005,256
Annual City Contributions	
Normal Contribution	\$ 11,888,191
Accrued Liability Amortization Payment	2,397,110
Grand Total	\$ 14,285,300
Total Salary ^a	\$ 35,726,289
Normal Contribution as a % of Total Salary	33.28%
Total Contribution as a % of Total Salary	39.99%

^a Includes salary of active members participating in the DROP Plan

SUMMARY OF ACTUARIAL VALUATION RESULTS (CONTINUED)

<u>Present Value of Future Benefits</u>		
Retirees		
1960 Plan	\$ 101,024,956	
Prospective Widows and Children of Retired Firemen	15,267,213	
Ordinary Disability		
1960 Plan	2,895,669	
Prospective Widows and Children of Retired Firemen	680,058	
Accidental Disability		
1960 Plan	119,608,243	
1944 Plan	16,047	
Prospective Widows and Children of Retired Firemen	12,747,619	
Widows		
1960 Plan	24,327,818	
1944 Plan	13,854	
Old Plan	31,754	
Children		
1960 Plan	424,887	
Total Inactives		<u>\$ 277,038,118</u>
Active Firemen		
Service Retirement	\$ 159,551,221	
Ordinary Disability Retirement	6,366,733	
Accidental Disability Retirement	66,280,006	
Withdrawal Benefit	1,865,348	
Ordinary Death	4,689,822	
Accidental Death	2,350,309	
Total Actives		<u>\$ 241,103,439</u>
DROP Firemen		
Account Balances ^a		
Actives	\$ 9,149,016	
Retirees	15,430,437	
Refund of Member Contributions	3,366,601	
Future Account Additions and Benefits	12,632,550	
Total DROPS		<u>\$ 40,578,604</u>
System Employees Benefit Fund		<u>\$ 340,777</u>
Total Present Value Future Benefits		<u>\$ 559,060,938</u>

^a As of October 1, 2006, there are 170 employees with DROP account balances, of which 28 are active members participating in the DROP program.

SUMMARY OF ACTUARIAL VALUATION RESULTS (CONTINUED)

Actuarial Value of Assets

(1) Expected Return on Market Value of Assets for Prior Year				
(a) Market Value of Assets as of 9/30/05 ^a				\$ 409,621,491
(b) Actual Income and Disbursements in Prior Year Weighted for Timing				
<u>Item</u>	<u>Amount</u>	<u>Weight for Timing</u>	<u>Weighted Amount</u>	
i) Member Contributions	\$ 2,853,058	50.0%	\$ 1,426,529	
ii) City Contributions & Misc.	4,110,402	50.0%	2,055,201	
iii) Benefit Payments	(28,298,163)	50.0%	(14,149,082)	
iv) Refunds	(1,685,199)	50.0%	(842,600)	
v) Administration	(882,431)	50.0%	(441,216)	
vi) Total			\$ (11,951,168)	
(c) Market Value of Assets Adj. for Actual Income and Disbursements [(a) + (b)(vi)]				\$ 397,670,323
(d) Assumed Rate of Return on Plan Assets for the Year				7.625%
(e) Expected Return Over Twelve Month Period				30,322,362
(f) Expected Market Value of Assets 10/1/06				\$ 416,041,520
(2) Actual Return on Market Value of Assets for Prior Year				
(a) Market Value of Assets as of 9/30/05 ^a				\$ 409,621,491
(b) Income (less investment income) for Prior Plan Year				(23,902,333)
(c) Market Value of Assets as of 10/1/06 ^a				419,362,665
(d) Actual Return [(c) - (b) - (a)]				\$ 33,643,507
(3) Investment Gain/(Loss) for Prior Period				\$ 3,321,145
(4) Actuarial Value of Assets as of 10/1/06				
(a) Market Value of Assets as of 10/1/06				\$ 419,362,665
(b) Deferred Investment Gains and (Losses) for Last 3 Years				
<u>Plan Year</u>	<u>Gain/(Loss)</u>	<u>Weight for Timing</u>	<u>Deferred Amount</u>	
i) 2004	\$ 17,640,613	0.00%	\$ -	
ii) 2005	18,839,379	33.33%	6,279,793	
iii) 2006	3,321,145	66.67%	2,214,097	
iv) Total	\$ 39,801,137		\$ 8,493,890	
(c) Actuarial Value of Assets [(a) - (b) (iv)]				\$ 410,868,775

The calculated value is determined by adjusting the market value of assets to reflect the investment gains and losses (the difference between the actual investment return and the expected investment return) during each of the last 3 years at the rate of 33.33% per year.

^a Excluding Future Benefit Fund

**SUMMARY OF ACTUARIAL VALUATION RESULTS
(CONTINUED)**

Amortization Schedule of Unfunded Accrued Liability

<u>Date Established</u>	<u>Original Period</u>	<u>Outstanding Period 10/1/06</u>	<u>Payment End of Year</u>	<u>Outstanding Balance 10/1/06</u>
9/1/1981	30	4 Years, 11 Months	\$ -	\$ 66,081
9/1/1982	30	5 Years, 11 Months	-	(2,238,317)
9/1/1983	30	6 Years, 11 Months	-	93,821
9/1/1984	30	7 Years, 11 Months	-	1,485,201
9/1/1985	30	8 Years, 11 Months	-	1,134,561
9/1/1986	30	9 Years, 11 Months	-	298,399
9/1/1987	30	10 Years, 11 Months	-	1,879,378
9/1/1988	30	11 Years, 11 Months	-	(3,219,046)
9/1/1989	30	12 Years, 11 Months	-	414,376
9/1/1990	30	13 Years, 11 Months	-	546,587
9/1/1990	30	13 Years, 11 Months	-	2,026,023
9/1/1991	30	14 Years, 11 Months	-	(1,118,405)
9/1/1993	30	16 Years, 11 Months	-	2,164,078
9/1/1996	30	19 Years, 11 Months	-	284,107
9/1/1999	30	22 Years, 11 Months	\$835,438	8,922,651
9/1/2000	30	23 Years, 11 Months	\$335,172	3,637,515
9/1/2001	30	24 Years, 11 Months	(\$134,627)	(1,482,640)
9/1/2002	30	25 Years, 11 Months	\$2,104,448	23,489,567
10/1/2006	30	30 Years, 0 Months	(\$743,321)	(8,673,147)
Total			\$ 2,397,110	\$ 29,710,789

On May 13, 1998, the City of St. Louis conducted a bond issue in the amount of \$27,943,654. This amount was equal to the present value on that date of the scheduled unfunded accrued liability amortization payments through August 31, 2010, and was applied to prepay those scheduled payments. Therefore, there will be no amortization payments for the bases established before the bond issue until August 31, 2011. The outstanding balance for these bases is the present value on the valuation date of the payments due on and after August 31, 2011. Amortization payments for bases established after the bond issue are made beginning in the plan year in which the base was established.

**SUMMARY OF ACTUARIAL VALUATION RESULTS
(CONTINUED)**

The valuation balance sheet shown below demonstrates the sources of income required to fund the current present value of future benefits as of the valuation date.

Valuation Balance Sheet

Sources of Funds

Actuarial Asset Value		\$ 410,868,775
Present Value of Future Contributions		
Members at 8% of Future Compensation	\$ 22,052,232	
Members at 1% of Future Compensation	61,262	
Total	<u>22,113,494</u>	\$ 22,113,494
City's Future Contributions		
Normal Cost	\$ 96,367,880	
Accrued Liability	29,710,789	
Total	<u>126,078,669</u>	\$ 126,078,669
Grand Total		\$ 559,060,938

**SUMMARY OF ACTUARIAL VALUATION RESULTS
(CONTINUED)**

Change in Market Value of Assets

Receipts		
Paid by City		
Allocated to General Reserve Fund	\$	4,110,402
Members' Contribution		
To Members' Savings Fund	\$	2,853,058
Income Received on Investments		
Allocated to Member's Savings Fund	\$	4,330,243
Allocated to Benefit Reserve Fund		21,452,995
Allocated to General Reserve Fund		6,977,838
Allocated to Future Benefit Fund		447,586
Allocated to Expense Fund		894,487
	<u>\$</u>	<u>34,103,149</u>
Total Receipts	<u>\$</u>	<u>41,066,609</u>
Disbursements		
Payment to Retired Members and Dependents:		
From Benefit Reserve Fund		
To Retirees, Beneficiaries, and Dependents	\$	(28,298,163)
From Future Benefit Fund		
To Retirees, Beneficiaries, and Dependents	\$	(317,369)
From Members Savings Fund		
Withdrawals, Deaths, and Retirements	\$	(1,685,199)
Operating Expenses	\$	(894,487)
Total Disbursements	\$	(31,195,218)
Net Operating Income	\$	9,871,391
Fund Balance October 1, 2005	\$	415,163,177
Fund Balance October 1, 2006	\$	425,034,568

DESCRIPTION OF FUNDS

For administrative purposes, the assets of the System are accounted for as four separate funds, as described below. The first three funds were established by Ordinance 49623. The other fund, the Future Benefit Fund, was established by Ordinance 61414. Only the assets of the first three funds are considered when determining the actuarial funding requirements.

Member's Savings Fund: All contributions by members are credited to this Fund. Interest at a rate determined by the Board is credited annually on the minimum balance in each member's account during the preceding year. Withdrawal refunds of member's accumulated contribution are charged to this Fund. Upon retirement or death of an active member after October 2, 1983, the member's own contributions are refunded to him while the balance of his accumulated contribution fund is transferred to the Benefit Reserve Fund.

Benefit Reserve Fund: Upon retirement or death, this fund is credited with the remaining balance of the member's accumulated contribution fund after his own contributions have been refunded to him from the Member's Savings Fund. It is also credited with an additional amount from the General Reserve Fund which, when added to the Benefit Reserve Fund, will be adequate to provide the present value of all benefits payable to all members and beneficiaries currently receiving benefits. All annuities granted are payable from this Fund.

General Reserve Fund: Contributions made by the City are credited to this Fund, and the reserves for benefits not provided by member's contributions are accumulated in this fund.

Future Benefit Fund: The entire fund is excluded from the assets used to determine the contribution requirement for the upcoming year. Through the SHARE program, ½ of the return on the fund is used to provide ad-hoc increases for members not eligible for other benefit increases.

**SUMMARY OF ACTUARIAL VALUATION RESULTS
(CONTINUED)**

Fund Balances

	<u>Total</u>	<u>Members Savings Fund</u>	<u>Benefit Reserve Fund</u>	<u>General Reserve Fund</u>	<u>Future Benefit Fund</u>
Balance, September 30, 2005	\$ 415,163,177	51,493,572	272,153,709	85,974,210	5,541,686
<u>Additions</u>					
Member Contributions	2,853,058	2,853,058	-	-	-
City Appropriations	3,741,460	-	-	3,741,460	-
Airport Appropriations	368,942	-	-	368,942	-
Interest and Dividends Received	33,208,662	4,330,243	21,452,995	6,977,838	447,586
Transfer Due to Surplus/Deficit	-	(2,350,418)	11,729,577	(9,379,159)	-
Total Additions	40,172,122	4,832,883	33,182,572	1,709,081	447,586
<u>Deductions</u>					
Benefit Payments	(28,615,532)	-	(28,298,163)	-	(317,369)
Refunds w/o Interest and Withdrawals w/ Interest	(1,685,199)	(1,685,199)	-	-	-
Total Deductions	(30,300,731)	(1,685,199)	(28,298,163)	-	(317,369)
Balance, September 30, 2006	\$ 425,034,568	54,641,256	277,038,118	87,683,291	5,671,903

SECTION B

GASB Statement No. 25

**SUPPLEMENTARY INFORMATION
SCHEDULE OF FUNDING PROGRESS**

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL)	Funded Ratio ^a	Covered Payroll	UAAL as a % of Covered Payroll
	(a)	(b)	(b) - (a)	(a) / (b)	(c)	((b) - (a)) / (c)
10/1/2006	\$ 410,868,775	\$ 440,579,564	\$ 29,710,789	93.3%	\$ 35,726,289	83.2%
10/1/2005	\$ 391,181,701	\$ 429,764,156	\$ 38,582,455	91.0%	\$ 35,433,943	108.9%
10/1/2004	\$ 369,893,135	\$ 408,660,044	\$ 38,766,909	90.5%	\$ 33,847,826	114.5%
9/1/2003	\$ 391,020,699	\$ 429,972,716	\$ 38,952,017	90.9%	\$ 34,648,486	112.4%
9/1/2002	\$ 427,199,947	\$ 466,310,235	\$ 39,110,288	91.6%	\$ 34,520,010	113.3%
9/1/2001	\$ 456,143,883	\$ 470,607,738	\$ 14,463,855	96.9%	\$ 32,626,002	44.3%
9/1/2000	\$ 441,611,320	\$ 457,572,578	\$ 15,961,258	96.5%	\$ 31,559,439	50.6%
9/1/1999	\$ 418,662,926	\$ 430,622,174	\$ 11,959,248	97.2%	\$ 29,749,169	40.2%
9/1/1998	\$ 402,930,619	\$ 404,999,272	\$ 2,068,653	99.5%	\$ 29,163,258	7.1%
9/1/1997	\$ 359,482,059	\$ 387,846,182	\$ 28,364,123	92.7%	\$ 27,532,033	103.0%

^a Frozen Entry Age Liability

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Annual Required Contribution

Valuation Date	GASB Statement #25 Annual Required Contribution			Statutory Annual Required Contribution		
	Per Actuarial Valuation	Percentage Contributed	Percentage of Covered Payroll	Per Actuarial Valuation	Percentage Contributed	Percentage of Covered Payroll
2006	\$ 17,871,455	0.0% ^a	50.0%	\$ 18,179,873	0.0% ^a	50.9%
2005	14,766,270	27.8%	41.7%	17,768,649	23.1%	50.1%
2004	9,721,831	21.1%	28.7%	13,765,477	14.9%	40.7%
2003	4,289,688	48.4%	12.4%	8,913,102	23.3%	25.7%
2002	3,514,488	95.7%	10.2%	3,365,007	100.0%	9.7%
2001	3,300,380	107.4%	10.1%	3,544,385	100.0%	10.9%
2000	2,905,731	111.9%	9.2%	3,251,579	100.0%	10.3%
1999	5,953,105	47.6%	20.0%	2,836,561	100.0%	9.5%
1998	8,814,900	74.6%	30.2%	6,576,414	100.0%	22.6%
1997	10,948,933	84.6%	39.8%	9,262,597	100.0%	33.6%

^a \$4,110,402 receivable at 10/01/06

SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

The information presented in the required schedules was determined as part of the actuarial valuation at the dates indicated. Additional information as of the latest actuarial valuation follow:

Valuation date:	October 1, 2006
Actuarial cost method:	Entry Age - Frozen Initial Liability
Amortization method:	30-year closed period from establishment
Remaining amortization period:	Various
Asset valuation method:	3-year smoothed market

Actuarial assumptions:

Investment rate of return	7.625%
Projected salary increases	4.000%
Includes inflation at	3.500%
Cost-of-living adjustments	

	Under Age 60	
	Service	COLA
20-24 Years		1.500%
25-29 Years		2.250%
30 or more Years		3.000%

	Over Age 60
	3% with a maximum of 25% in increases after age 60

SECTION C

Data Reflecting Plan Membership

DATA REFLECTING PLAN MEMBERSHIP

Summary of Membership as of October 1, 2006

Retirees and Dependents

	<u>Number</u>	<u>Monthly Pension</u>
Retirees		
1960 Plan	403	\$ 990,945
Ordinary Disability		
1960 Plan	18	25,400
Accidental Disability		
1960 Plan	323	980,324
1944 Plan	1	438
Widows		
1960 Plan	284	242,496
1944 Plan	1	200
Old Plan	3	600
Children		
1960 Plan	<u>21</u>	<u>8,524</u>
Total	1,054	\$ 2,248,927

Active and DROP

	<u>Number</u>	<u>Member's Annual</u>	
		<u>Compensation</u>	<u>Contribution</u>
Actives - Non-DROP	678	\$ 34,005,256	
Actives - DROP	<u>28</u>	<u>1,721,033</u>	
Total	706	\$ 35,726,289	\$ 2,853,058

**DATA REFLECTING PLAN MEMBERSHIP
(CONTINUED)**

**Active Non-DROP Members as of October 1, 2006
By Attained Age and Years of Service**

Attained Age	Years of Service to Valuation Date								Totals
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Up	
20-24	5								5
	\$ 177,666								\$ 177,666
25-29	30	2							32
	\$ 1,094,117	89,777							\$ 1,183,894
30-34	39	39							78
	\$ 1,458,652	1,775,188							\$ 3,233,840
35-39	25	66	38	13					142
	\$ 951,386	3,027,695	1,979,573	692,065					\$ 6,650,719
40-44	19	32	57	113					221
	\$ 738,383	1,413,394	2,949,815	6,124,176					\$ 11,225,768
45-49	7	8	25	58	14	16			128
	\$ 272,923	374,505	1,295,975	3,311,750	882,910	1,074,451			\$ 7,212,514
50-54	2	2	10		3	25	2		44
	\$ 76,713	95,207	502,161		157,433	1,627,365	133,954		\$ 2,592,833
55-59	1	2			1	9	8		21
	\$ 35,745	97,450			79,166	534,220	509,550		\$ 1,256,131
60-64							4	2	6
							239,343	155,002	\$ 394,345
65-69								1	1
								77,546	\$ 77,546
Totals: Count	128	151	130	184	18	50	14	3	678
Payroll	\$ 4,805,585	6,873,216	6,727,524	10,127,991	1,119,509	3,236,036	882,847	232,548	\$ 34,005,256

**DATA REFLECTING PLAN MEMBERSHIP
(CONTINUED)**

**Active DROP Members as of October 1, 2006
By Attained Age and Years of Service**

Attained Age	Years of Service to Valuation Date			Totals	
	20-24	25-29	30 & Up		
40-44	1			1	
	\$ 52,242			\$ 52,242	
45-49	7	1		8	
	\$ 379,959	53,433		\$ 433,392	
50-54	5	5		10	
	\$ 273,521	332,562		\$ 606,083	
55-59		2	6	8	
		148,671	401,685	\$ 550,356	
60-64			1	1	
			78,960	\$ 78,960	
Totals:	Count	13	8	7	28
	Payroll	\$ 705,722	534,666	480,645	\$ 1,721,033

**DATA REFLECTING PLAN MEMBERSHIP
(CONTINUED)**

Service Retirees - 1960 Plan

<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>	<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>
43	1	\$ 1,772.05	71	13	\$ 36,298.34
47	1	2,271.71	72	13	32,630.99
48	5	9,720.66	73	12	30,887.25
49	1	1,476.87	74	13	34,083.54
50	3	5,854.71	75	18	41,893.06
51	4	8,271.93	76	8	17,393.71
52	6	10,968.92	77	11	22,641.85
53	6	18,651.85	78	8	16,495.29
54	3	5,791.42	79	15	34,489.67
55	5	8,352.63	80	12	24,239.44
56	9	18,089.54	81	11	29,011.64
57	3	4,962.80	82	7	14,447.87
58	6	9,691.66	83	11	23,579.98
59	8	23,116.64	84	2	7,057.89
60	10	27,516.41	85	8	16,819.51
61	9	22,802.93	86	10	18,701.73
62	4	12,841.41	87	1	1,832.19
63	6	17,457.30	88	4	7,165.70
64	13	33,037.98	89	9	18,017.31
65	14	42,306.98	90	2	4,180.81
66	16	50,814.36	91	4	8,704.47
67	27	79,826.38	92	1	1,065.16
68	19	52,675.44	93	2	2,986.60
69	16	44,569.45	95	<u>1</u>	<u>1,508.82</u>
70	12	31,969.69			
Total				403	\$ 990,944.54
Average Monthly Allowance					\$ 2,458.92
Average Age					70.5

**DATA REFLECTING PLAN MEMBERSHIP
(CONTINUED)**

Ordinary Disability Retirees - 1960 Plan

<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>
38	2	\$ 1,876.17
39	1	2,293.08
41	1	950.31
53	1	1,047.91
55	1	1,025.30
58	2	3,451.82
63	1	2,438.60
64	3	3,164.83
65	1	3,220.94
70	1	437.50
73	1	2,089.50
77	1	1,134.51
88	1	437.50
92	<u>1</u>	<u>1,832.38</u>
Total	18	\$ 25,400.35
Average Monthly Allowance		\$ 1,411.13
Average Age		61.1

**DATA REFLECTING PLAN MEMBERSHIP
(CONTINUED)**

Accidental Disability Retirees - 1960 Plan

<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>	<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>
29	1	\$ 3,457.28	62	5	\$ 17,439.10
30	1	3,457.28	63	12	40,563.28
35	1	3,282.38	64	4	15,690.34
36	1	3,386.17	65	3	9,353.13
37	1	3,282.38	66	18	60,219.63
38	1	3,277.95	67	5	10,926.23
39	3	9,920.34	68	14	43,392.99
40	2	6,887.72	69	11	28,958.98
41	3	10,196.94	70	10	30,093.69
42	7	24,090.33	71	15	43,863.52
43	6	21,051.16	72	7	15,971.67
44	6	19,660.49	73	5	12,078.26
45	6	21,041.62	74	9	24,037.52
46	7	24,420.14	75	6	15,153.13
47	2	8,148.95	76	9	23,389.84
48	9	32,664.85	77	3	5,730.16
49	9	31,814.90	78	6	12,483.79
50	3	8,767.68	79	4	8,278.02
51	5	15,666.01	80	11	18,980.25
52	11	39,449.58	81	6	8,899.96
53	4	12,806.80	82	2	3,562.54
54	6	19,272.52	83	2	5,616.45
55	8	28,714.19	84	2	4,817.19
56	9	32,186.04	85	2	2,931.94
57	9	29,146.22	86	3	6,084.81
58	7	29,119.78	87	1	3,613.53
59	7	23,007.64	89	1	1,840.99
60	6	20,874.87	91	1	820.63
61	4	14,473.50	92	1	2,007.21
Total				323	\$ 980,324.49
Average Monthly					
Allowance					\$ 3,035.06
Average Age					62.4

**DATA REFLECTING PLAN MEMBERSHIP
(CONTINUED)**

Accidental Disability Retiree - 1944 Plan

<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>
86	<u>1</u>	\$ <u>437.50</u>
Total	1	\$ 437.50
Average Monthly Allowance		\$ 437.50
Average Age		86.0

**DATA REFLECTING PLAN MEMBERSHIP
(CONTINUED)**

Widows - 1960 Plan

<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>	<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>
40	1	\$ 1,868.76	72	8	\$ 6,408.46
41	1	1,959.66	73	7	6,328.40
42	1	906.78	74	7	7,230.94
43	1	1,944.64	75	11	9,587.48
47	1	978.88	76	14	11,675.08
50	1	1,240.40	77	7	6,490.22
51	1	820.78	78	10	7,396.92
52	1	1,631.40	79	17	12,201.20
53	3	4,301.36	80	10	7,392.24
54	4	6,443.30	81	7	5,120.57
55	3	4,349.08	82	10	5,962.27
56	2	3,834.33	83	14	9,389.18
57	2	2,719.85	84	10	6,504.82
59	1	564.54	85	2	1,362.28
60	3	3,312.04	86	6	3,185.41
61	5	4,718.33	87	3	1,807.62
62	4	4,440.42	88	4	2,110.35
63	4	4,457.29	89	4	2,178.96
64	4	5,936.28	90	9	3,783.14
65	10	11,807.99	91	4	1,922.34
66	11	12,128.57	92	6	2,130.66
67	13	13,927.54	93	4	2,236.51
68	4	3,723.20	94	4	1,807.10
69	6	4,121.86	96	1	677.72
70	11	10,214.25	97	1	485.74
71	5	4,568.49	101	1	200.00
Total				284	\$ 242,495.63
Average Monthly					
Allowance					\$ 853.86
Average Age					74.9

**DATA REFLECTING PLAN MEMBERSHIP
(CONTINUED)**

Widows - 1944 Plan

<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>
83	<u>1</u>	\$ <u>200.00</u>
Total	1	\$ 200.00
Average Monthly Allowance		\$ 200.00
Average Age		83.0

**DATA REFLECTING PLAN MEMBERSHIP
(CONTINUED)**

Widows - Old Plan

<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>
85	1	\$ 200.00
88	1	200.00
94	<u>1</u>	<u>200.00</u>
Total	3	\$ 600.00
Average Monthly Allowance		\$ 200.00
Average Age		89.0

**DATA REFLECTING PLAN MEMBERSHIP
(CONTINUED)**

Children - 1960 Plan

<u>Age</u> <u>9/30/2006</u>	<u>Number</u>	<u>Monthly</u> <u>Allowance</u>
8	1	\$ 388.93
12	1	181.36
13	1	391.93
16	5	1,688.75
17	1	499.87
18	1	388.93
19	1	324.35
21	2	970.90
22	2	1,210.55
23	1	204.25
24	1	259.72
25	2	1,500.92
36	1	286.01
57	<u>1</u>	<u>227.45</u>
Total	21	\$ 8,523.92
Average Monthly Allowance		\$ 405.90
Average Age		21.1

SECTION D

Valuation Procedures

ACTUARIAL COST METHOD

The Actuarial Cost Method. The method used in this valuation is the Frozen Entry Age Actuarial Cost Method. This method determines a normal cost on an aggregate basis expressed as a level percentage of pay. The normal cost rate equals the ratio of (a) the present value of future benefits less the actuarial value of assets less the frozen unfunded actuarial liability, to (b) the present value of future salaries. Under this method, the actuarial gains (losses), as they occur, reduce (increase) future normal costs.

Amortization of Frozen Unfunded Accrued Liabilities. Unfunded actuarial accrued liabilities for changes in assumptions, plan provisions, or methods were amortized on a level basis over 30 years from the creation of the unfunded base. A schedule of the frozen unfunded accrued liability amortization is shown in section A of this report.

The total contribution is equal to the normal cost plus the amortization of the frozen unfunded accrued liabilities.

Actuarial Value of Assets. The calculated value is determined by adjusting the market value of assets, excluding the future benefit fund, to reflect the investment gains and losses (the difference between the actual investment return and the expected investment return) during each of the last three years at a rate of 33 percent per year.

ACTUARIAL ASSUMPTIONS

The assumed rate of investment return used was 7.625 percent, net of expenses, annually.

The mortality table used to measure ordinary pre-retirement mortality and post retirement mortality was the 1994 Group Annuity Mortality Table. This assumption is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement. Illustrative rates are shown below.

Ordinary Mortality		
Rate Per 1,000 Employees		
Age	Male	Female
25	0.6610	0.2910
35	0.8510	0.4780
45	1.5780	0.9730
55	4.4250	2.2940
65	14.5350	8.6360
75	37.2110	22.6860
85	97.2400	67.7380

The accidental mortality rate for pre-retirement mortality is assumed to be .0015 per year for ages up to and including age 49.

The disability retirement mortality table was the 1994 Group Annuity Mortality Table with a six year set forward. Illustrative rates are shown below.

Post - Disability Mortality		
Rate Per 1,000 Employees		
Age	Male	Female
45	2.8720	1.5680
55	8.9860	5.0930
65	25.9510	14.9530
75	68.6150	43.9520
85	167.2600	128.7510

ACTUARIAL ASSUMPTIONS (CONTINUED)

Rates of separation from active membership are represented by the following table (rates do not apply to members eligible to retire and do not include separation on account of death or disability). This assumption measures the probabilities of members terminating employment.

<u>Years of Service</u>	<u>Employee Withdrawal Rate Per 1,000 Employees Rate of Withdrawal</u>
0	80.0
1	50.0
2	20.0
3	20.0
4	20.0
5	20.0
6	20.0
7	20.0
8	20.0
9	15.0
10	15.0
11	15.0
12	15.0
13	10.0
14	10.0
15	10.0
16	5.0
17	5.0
18	5.0
19	5.0
20 or more	0.0

The rates of salary increase used for individual members are 4.0 percent annual increases. This assumption is used to project a member's current salary to the salaries upon which benefit amounts will be based.

**ACTUARIAL ASSUMPTIONS
(CONTINUED)**

The rates of disability for active members are broken out between ordinary and accidental disability. Ordinary disability accounts for 15 percent of total disabilities and accidental disability accounts for 85 percent of total disabilities.

Employee Disablement Rate Per 1,000 Employees		
Age	Ordinary	Accidental
25	0.7500	4.2500
30	0.7500	4.2500
35	1.5000	8.5000
40	3.0000	17.0000
45	3.0000	17.0000
50	5.2500	29.7500
55	5.2500	29.7500
60	5.2500	29.7500

Probabilities of retirement for members eligible to retire during the next year were as follows:

Rates of Retirement	
Years of Service	Rate of Retirement
20	20.00 %
21	12.50
22	5.00
23	5.00
24	5.00
25	5.00
26	5.00
27	5.00
28	5.00
29	5.00
30 or more	100.00

SUMMARY OF PLAN PROVISIONS

The Retirement System was revised effective January 1, 1960, under Ordinance 49623.

Prior to January 1, 1960, there were two groups of members, one group referred to as "Old Plan" and the other group as "New Plan". There is no longer a need for this separation in the active members because the revised system makes no distinction between the "Old Plan" members and the "New Plan" members. The retirees are divided into Old Plan, 1944 Plan (New Plan) and 1960 Plan (Ordinance 49623).

Service Retirement –

Retirements after June 3, 1978: Voluntary retirement after 20 or more years of service. Compulsory retirement at age 60 with 30 years of service. The monthly retirement allowance consists of 40 percent of the final two-year average monthly compensation at 20 years of service, plus 2.0 percent of such final average compensation for each of the next five years of service (50 percent of final average compensation after 25 years of service), plus 4.0 percent of such final average compensation for each additional year of service over 25 years, but with a maximum of 30 years (70 percent of final average compensation after 30 years of service).

Effective October 3, 1982, any retired firemen may act as a special advisor to the retirement system and thereby be entitled to a minimum pension of \$350.00 per month.

Effective October 1, 1989, any unused accrued sick leave will be added to the years of service used to determine the monthly pension allowance. If the total years of service are limited to 30 years as described above, the unused accrued sick leave will be added to 30.

Effective November 28, 1995, the monthly retirement allowance consists of 40 percent of the final two-year average monthly compensation at 20 years of service, plus 2.0 percent of such final average compensation for each of the next five years of service (50 percent of final average compensation after 25 years of service), plus 5.0 percent of such final average compensation for each additional year of service over 25 years, but with a maximum of 30 years (75 percent of final average compensation after 30 years of service).

SUMMARY OF PLAN PROVISIONS (CONTINUED)

Effective July 1, 2002, a Member has three options for use of unused sick leave and service retirement:

- Receive 100 percent of the value (sick leave multiplied by rate of pay) as a lump sum deposit into the DROP account,
- Receive 100 percent of the sick leave as service added to the credited service used in the calculation of the retirement benefit, or
- Receive 50 percent of the value as a lump sum deposit into the DROP account, and receive 25 percent as service added to the credited service used in the calculation of the retirement benefit, and receive 25 percent of the value as additional pay solely for purposes of determining the final average earnings used in the calculation of the retirement benefit.

Ordinary Disability Retirement –

Provides a service retirement allowance if 20 or more years of service. Provides for a monthly retirement allowance after five years of service (but less than 20 years) which is the largest of (a) 90 percent of the monthly service retirement allowance based on the actual service or (b) one-fourth of the final two-year average monthly compensation. In addition, a monthly benefit of 10 percent of the final two-year average monthly compensation, for each unmarried dependent child under age eighteen, but not in excess of three children, is provided.

Accidental Disability Retirement -

Provides for retirement if the member is totally and permanently incapacitated for duty as the result of an accident or exposure occurring while in the actual performance of duty. The monthly retirement allowance is 75 percent of the highest monthly salary in effect for the highest step in the range of salary, for his rank held at retirement.

SUMMARY OF PLAN PROVISIONS (CONTINUED)

If the accident immediately, totally and permanently incapacitates the member from performing any type of work and confines him to his home, the Board may provide an increased retirement allowance not to exceed 100 percent of the member's actual rate of compensation as of the date his disability allowance began.

DROP Benefit -

A member eligible for service retirement may defer receipt of the service retirement benefit for up to five years while continuing active employment. Contributions by the member while in the DROP are one percent of annual compensation. The amount the member would have received as a service retirement benefit is deposited into the DROP account. A member terminating the DROP plan may retire or continue active service. Service while in the DROP will not count as creditable service. Upon termination of employment, the member may choose to receive the DROP account with the interest earned by the account.

Ordinary Death Benefit –

Provides for the following benefits after death which occurs:

- (1) While in service, a monthly retirement allowance to the widow during widowhood of the greater of (1) 50 percent ^a of the final two year average monthly compensation or (2) \$200. In addition, 10 percent of each unmarried dependent child under age eighteen in her care, but not in excess of three children.

- (2) After service retirement, accidental disability retirement or ordinary disability retirement, a monthly allowance to the widow during widowhood of the greater of (1) 50 percent ^a of the final two year average monthly compensation, or (2) \$200. In addition, 10 percent of such compensation for each unmarried dependent child under eighteen in her care but not in excess of three children.

^a Assumes the widow has applied for and been appointed to the status of special consultant; if not the amount is 25 percent.

SUMMARY OF PLAN PROVISIONS (CONTINUED)

Accidental Death Benefit –

Provides, if death is the result of an accident or exposure while in the actual performance of duty, a monthly allowance to the widow during her widowhood of the greater of (1) 50 percent of the final two-year average monthly compensation or (2) \$200. In addition, 10 percent for each unmarried dependent child under 18 in her care but not in excess of three children.

\$2,000 Lump Sum Death Benefit -

Provides a \$2,000 lump sum amount upon the death of an active or retired member.

Cost-of-Living Adjustments -

(Ordinance 56444) Retirement allowances to members who retired after March 16, 1973, and prior to December 28, 1983, shall be increased 3.0 percent whenever the Consumer Price Index released by the U.S. Department of Labor shows an increase of at least 3.0 percent for three consecutive months in the preceding twelve-month period. Prior to August 31, 1980, each increase was applied to the base retirement benefit at time of retirement. Commencing August 31, 1980, the cost-of-living adjustment is made to the current retirement benefit.

Ordinance 59018 changed the cost-of-living provision for anyone retiring after December 28, 1983. For those members who retired subsequent to December 28, 1983, the cost-of-living increases for service or ordinary disability retirement are based upon the number of years of service at retirement, and are subject to a maximum of the actual increase in the Consumer Price Index over the most recent 12 months.

SUMMARY OF PLAN PROVISIONS (CONTINUED)

For a member with less than 25 years of service at retirement, the cost-of-living is 1.5 percent per year up to age 60 and 5.0 percent per year after age 60 with a 25 percent maximum applied past age 60. For a member with at least 25 years of service but less than 30 years at retirement, the cost-of-living increase is 2.25 percent per year up to age 60 and 5.0 percent per year after age 60 with a 25 percent maximum applied past age 60. For a member with 30 or more years of service at retirement, the cost-of-living increase is 3.0 percent per year up to age 60 and 5.0 percent per year after age 60 with a 25 percent maximum applied past age 60. For a member who retires at age 60 or later, the cost-of-living increase is 5.0 percent per year with a 25 percent maximum applied.

For a member who retires with an accidental disability retirement, the cost-of-living increase is 3.0 percent per year up to age 60 and 5.0 percent per year after age 60 with a 25 percent maximum applied past age 60.

Return of Contributions -

Upon service retirement, ordinary disability, accidental disability, or death of an active member, contributions without interest are refunded. Upon withdrawal from service of a member prior to eligibility for a service retirement allowance, the entire amount of the member's contributions with interest accumulated is returned to the member in lieu of any other benefits.

The Firemen's Retirement System of St. Louis

1601 South Broadway • St. Louis, MO 63104
314-588-2288 • Fax: 314-588-2289 • www.frs-stl.org



Len Wiesehan, Chairman

Vicky Grass, Executive Director

March 13, 2006

To Whom It May Concern:

Enclosed please find the valuation for fiscal year 2005-2006 as performed by Gabriel, Roeder, Smith & Company, Actuary for the Firemen's Retirement System, and a copy of the audit for fiscal year 2005-2006 as performed by Hochschild, Bloom & Company LLP, auditors for the System.

Sincerely,

A handwritten signature in cursive script that reads "Vicky Grass".

Vicky Grass
Executive Director

mlw

