

December 28, 2012

Ms. Vicky Grass
Executive Director
The Firemen's Retirement System of St. Louis
1601 South Broadway
St. Louis, MO 63104

CONFIDENTIAL
Via Email

Re: Pension Plan Impact – Modified Duty Disability Benefits and New Firefighter Benefit Structure

Dear Vicky:

We are providing the impact on the Firemen's Retirement System of St. Louis of modifying duty disability benefits, for both current and future firefighters of the Firemen's Retirement System of St. Louis, and providing a new level of benefits to Firefighters hired after August 29, 2013.

Modified Duty Disability Benefits

Currently, the System 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 the member's rank held at retirement.

We have analyzed the following scenario:

- For members applying for duty disability benefits with less than 10 years of service, the benefit is equal to:
 - 70 percent of Current salary for five years including a 1.0 percent cost-of-living adjustment each year.
 - Tuition for five years equivalent to a full-time student at the University of Missouri-St. Louis.
 - After five years, the benefit allowance reverts to 25 percent of the last year of benefit outlined above and a 1.0 percent cost-of-living adjustment per year until age 60 and then a 25 percent cap on the cost of living adjustment.
- For members applying for duty disability benefits with more than 10 years of service but less than 20 years of service, the benefit is equal to:
 - 70 percent of Current salary for five years including a 1.0 percent cost-of-living adjustment each year.
 - Tuition for five years equivalent to a full-time student at the University of Missouri-St. Louis.
 - After five years, the benefit reverts to 2 ¾ percent times years of service of the last year of benefit outlined above and a 1.0 percent cost-of-living adjustment per year until age 60 and then a 25 percent cap on the cost of living adjustment.

- For members applying for duty disability benefits with more than 20 years of service and less than 25 years of service, the benefit is equal to:
 - 70 percent of Current salary for five years including a 1.0 percent cost-of-living adjustment each year.
 - Tuition for five years equivalent to a full-time student at the University of Missouri-St. Louis.
 - After five years, the benefit reverts to 2 $\frac{3}{4}$ percent times years of service of the last year of benefit outlined above and a 1.0 percent cost-of-living adjustment per year until age 60 and then a 25 percent cap on the cost of living adjustment.

Or...

- A disability benefit which is equal to 65 percent of the highest monthly salary in effect for the highest step in the range of salary, for the member's rank held at retirement and a 1.0 percent cost-of-living adjustment per year until age 60 and then a 25 percent cap on the cost of living adjustment.
- For members applying for duty disability benefits with more than 25 years of service, the benefit is equal to:
 - Tuition for five years equivalent to a full-time student at the University of Missouri-St. Louis.
 - A disability benefit which is equal to 75 percent of the highest monthly salary in effect for the highest step in the range of salary, for the member's rank held at retirement and a 2 $\frac{1}{4}$ percent cost-of-living adjustment per year until age 60 and then a 25 percent cap on the cost of living adjustment.
- Members applying for duty disability benefits due to conditions of the heart and/or lungs and/or cancer may be entitled to a benefit equal to 75 percent of the highest monthly salary in effect for the highest step in the range of salary, for the member's rank held at retirement at the Board's discretion including current statutory cost-of-living adjustments.
- Certain members with less than 25 years of service may be granted the current duty disability benefit equal to 75 percent of the highest monthly salary in effect for the highest step in the range of salary, for the member's rank held at retirement at the Board's discretion including current statutory cost-of-living adjustments.

We assumed one credit hour at the University of Missouri-St. Louis is equal to \$265.60 as of the measurement date, increasing at three percent each year after the measurement date. Furthermore, we assumed that a full-time student would carry 24 credit hours in two semesters each year. Also, we assumed 20 percent of duty disabilities for members with less than 25 years of service would be granted the current benefit equal to 75 percent of the highest monthly salary in effect for the highest step in the range of salary, for the member's rank held at retirement.

New Firefighter Benefit Structure

The new Firefighters benefits are defined as follows:

- Member contributions are equal to 8 percent of pay. Upon retirement, disability, or death, new Firefighters receive a refund of 25 percent of accumulated member contributions without interest.
- New Firefighters are eligible for the DROP benefits provided they satisfy the retirement requirements. Members may not return to active service after entering the DROP.
- Vesting requirements are reduced from 20 years of service to 10 years of service. A member can receive regular service retirement benefits at 55 years of age or at any age after 30 years of service.
- The benefit accrual formula equals 2.0 percent of final average compensation for the first 25 years of service and 4.0 percent of final average compensation for the next five years of service.
- A member with at least 20 but less than 30 years of service may retire prior to age 55 provided the retirement benefit is reduced using the System's actuarial equivalence factors.
- If a terminated member dies before attaining age 55, with at least 10 years but less 20 years of service, the surviving spouse or children are entitled to a benefit commencing when the member would have reached age 55 in an amount equal to 2 percent times the member's service times final average compensation.
- Final Average Compensation is based on 5 years instead of 2 years.
- The maximum retirement benefit is capped at 70 percent of Final Average Compensation after 30 years.
- The member is not eligible for sick leave conversion benefits.
- Cost of living increases are limited to 1.0 percent per year after retirement, ordinary disability, and accidental disability for the lifetime of the member, capped at 25 percent.

We measured the impact of these changes at October 1, 2012, utilizing the same assumptions, methods, and data used in the October 1, 2012, actuarial valuation.

The impact on the employer contribution as of October 1, 2012, under the Frozen Initial Liability (FIL) cost method is shown below.

Firemen's Retirement System of St. Louis			
Estimated Results as of October 1, 2012			
Frozen Initial Liability Cost Method			
	Baseline	Impact	Change
Present Value of All Future Benefits	\$ 617,688,969	\$ 610,666,365	\$ (7,022,604)
Assets	\$ 448,553,717	\$ 448,553,717	\$ -
Unfunded Accrued Liability	\$ 26,405,100	\$ 30,537,204	\$ 4,132,104
Present Value of Future Normal Costs	\$ 142,730,152	\$ 131,575,444	\$ (11,154,708)
Present Value of Future Salary	\$ 306,217,088	\$ 306,217,088	\$ -
Normal Contribution Percent	46.611%	42.968%	-3.64%
Total Salary	\$ 36,013,472	\$ 36,013,472	\$ -
Annual City Contributions			
Normal Contribution	\$ 16,786,239	\$ 15,474,269	\$ (1,311,971)
Accrued Liability Amortization Payment	<u>3,879,400</u>	<u>4,233,537</u>	<u>354,137</u>
Grand Total	\$ 20,665,639	\$ 19,707,806	\$ (957,834)

The impact on the employer contribution as of October 1, 2012, under the Entry Age Normal (EAN) cost method is shown below.

Firemen's Retirement System of St. Louis			
Estimated Results as of October 1, 2012			
Entry Age Normal Cost Method			
	Baseline	Impact	Change
Accrued Liability	\$ 526,710,148	\$ 530,842,252	\$ 4,132,104
Assets	\$ 427,123,970	\$ 427,123,970	\$ -
Unfunded Accrued Liability	\$ 99,586,178	\$ 103,718,282	\$ 4,132,104
Annual City Contributions			
Normal Contribution	\$ 8,474,450	\$ 7,154,252	\$ (1,320,198)
Accrued Liability Amortization Payment	<u>6,050,994</u>	<u>6,302,067</u>	<u>251,072</u>
Grand Total	\$ 14,525,444	\$ 13,456,319	\$ (1,069,125)

Please note that because the new level of benefits is only applicable to firefighters hired after August 29, 2013, the impact above is attributable to the modified duty disability benefits.

The key observations are as follows:

- The impact of the change under the FIL method is anticipated to decrease the present of future benefits by \$7.02 million, increase the accrued liability by \$4.13 million, and decrease the normal cost by \$1.31 million. The City's contribution for plan year end 2013 is estimated to decrease by \$0.96 million under the FIL method.
- The impact of the change under the EAN method is anticipated to increase the accrued liability by \$4.13 million and decrease the normal cost by \$1.32 million. The City's contribution for plan year end 2013 is estimated to decrease by \$1.07 million under the EAN method.
- It is possible that this change may increase benefit payments in the short term because the benefits offered in the first five years after disability may be in some cases higher than what is currently offered.

To prepare these cost studies, actuarial assumptions are used in a forward looking financial and demographic model to present a single scenario from a wide range of possibilities; the results based on any single scenario represent only one possible outcome out of a myriad of potential outcomes. The future is uncertain and the plan's actual experience will likely differ from those assumptions; these differences may be significant or material because these long-term results are very sensitive to the assumptions made, and, in some cases, to the interaction between the assumptions.

Different assumptions or scenarios within the range of possibilities may also be reasonable and results based on those assumptions would be different. As a result of the uncertainty inherent in a forward looking projection over a very long period of time, no one projection is uniquely "correct" and alternative projections of the future could also be regarded as reasonable. Two different actuaries could, quite reasonably, arrive at different results based on the same data and different views of the future. A "sensitivity analysis" shows the degree to which results would be different if you substitute alternative assumptions within the range of possibilities for those utilized in this report. For these reasons we recommend that a full range of outcomes be used in making decisions concerning future plan design changes and any future funding policies.

The actuaries submitting this statement are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Please let us know if you would like to discuss this suggestion further.

Sincerely,



Alex Rivera, F.S.A., M.A.A.A.
Senior Consultant



Lance Weiss, E.A., M.A.A.A.
Senior Consultant

cc: Paul Wood, Gabriel, Roeder, Smith & Company

Enclosures

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Determination of City Contributions as of October 1, 2012 - Frozen Initial Liability

	Baseline	Impact	Change
Present Value of All Future Benefits			
Retirees and Beneficiaries	\$ 321,820,158	\$ 321,820,158	\$ -
Active Firemen	231,448,358	224,397,506	(7,050,852)
DROP Firemen	64,034,012	64,062,260	28,248
System Employees Benefit Fund	386,441	386,441	-
Total	\$ 617,688,969	\$ 610,666,365	\$ (7,022,604)
Assets			
Actuarial Asset Value (3-year smoothing)	\$ 427,123,970	\$ 427,123,970	\$ -
Present Value of Future Employee Contributions	21,429,747	21,429,747	-
Total	\$ 448,553,717	\$ 448,553,717	\$ -
Unfunded Accrued Liability	\$ 26,405,100	\$ 30,537,204	\$ 4,132,104
Present Value of Future Normal Costs	\$ 142,730,152	\$ 131,575,444	\$ (11,154,708)
Present Value of Future Salary	\$ 306,217,088	\$ 306,217,088	\$ -
Normal Contribution Percent	46.611%	42.968%	-3.643%
Total Salary ^a	\$ 36,013,472	\$ 36,013,472	\$ -
Annual City Contributions for Plan Year Ending 9/30/2013			
Normal Contribution	\$ 16,786,239	\$ 15,474,269	\$ (1,311,971)
Accrued Liability Amortization Payment	3,879,400	4,233,537	354,137
Grand Total	\$ 20,665,639	\$ 19,707,806	\$ (957,834)
Normal Contribution as a % of Total Salary	46.611%	42.968%	-3.643%
Total Contribution as a % of Total Salary	57.383%	54.723%	-2.660%

^a Includes salary of all active members

Determination of City Contributions as of October 1, 2012 - Entry Age Normal

	Baseline		Impact		Change
Accrued Liability					
Retirees and Beneficiaries	\$ 321,820,158	\$	321,820,158	\$	-
Active Firemen	147,896,268		152,028,372		4,132,104
DROP Firemen	56,607,281		56,607,281		-
System Employees Benefit Fund	386,441		386,441		-
Total	\$ 526,710,148	\$	530,842,252	\$	4,132,104
Assets					
Actuarial Asset Value (3-year smoothing)	\$ 427,123,970	\$	427,123,970	\$	-
Unfunded Accrued Liability	\$ 99,586,178	\$	103,718,282	\$	4,132,104
Amortization of UAL	\$ 6,050,994	\$	6,302,067	\$	251,072
Total Normal Cost	\$ 11,167,508	\$	9,847,310	\$	(1,320,198)
Actuarially Determined Contribution	\$ 17,218,502	\$	16,149,377	\$	(1,069,125)
Employee Contributions	\$ 2,693,058	\$	2,693,058	\$	-
Annual Required Contribution					
Normal Contribution ^a	\$ 8,474,450	\$	7,154,252	\$	(1,320,198)
Accrued Liability Contribution	6,050,994		6,302,067		251,072
Grand Total	\$ 14,525,444	\$	13,456,319	\$	(1,069,125)
Total Salary ^b	\$ 36,013,472	\$	36,013,472	\$	-
Normal Contribution as a % of Total Salary	23.531%		19.865%		-3.666%
Total Contribution as a % of Total Salary	40.333%		37.365%		-2.969%

^a Net of employee contributions

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