CITY OF SPRINGFIELD
FIREFIGHTERS' PENSION FUND

ACTUARIAL VALUATION
AS OF FEBRUARY 29, 2008

GOLDSTEIN & ASSOCIATES

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January 13, 2009

Mr. Charles Alsbury
Staff Accountant
Office of Management and Budget
City of Springfield
Room 210 – Municipal Building
Springfield, Illinois 62701

Re: **Actuarial Valuation of the Springfield Firefighters' Pension Fund**

Dear Mr. Alsbury:

I am pleased to submit our actuarial report based on an actuarial valuation of the Springfield Firefighters' Pension Fund as of February 29, 2008.

The report consists of 9 Sections and 2 Appendices as follows:

I would be pleased to discuss any aspects of this report with you and other interested persons.

Respectfully submitted,

Sandor Goldstein, F.S.A.
Consulting Actuary

A. PURPOSE AND SUMMARY

We have carried out an actuarial valuation of the Springfield Firefighters' Pension Fund as of February 29, 2008. The purpose of the valuation was to determine the financial position and the annual actuarial requirements of the pension fund. This report is intended to present the results of the valuation. The results of the valuation are summarized below:

1. Total actuarial liability	$ 175,917,518
2. Actuarial value of assets	$ 86,583,058
3. Unfunded actuarial liability	$ 89,334,460
4. Funded ratio	49.2%
5. Total normal cost for year beginning March 1, 2009	$ 4,901,479
6. Annual actuarial requirement for year beginning March 1, 2009	$ 10,245,352
7. Amount of tax to be levied by City so that total revenue will be sufficient to meet annual actuarial requirement	$ 8,877,096

B. DATA USED FOR THE VALUATION

Participation Data. The participant data required to carry out the valuation was supplied by the pension fund. The participant data for the pension fund as of February 29, 2008, on which the valuation is based, is summarized in Exhibit 1. It can be seen that there were 225 active members and 214 members receiving benefits. The total active payroll as of February 29, 2008 was $13,914,657.

Exhibit 1

Summary of Participant Data

1. Number of Members		
(a) Active Members		
(i) Vested		108
(ii) Non-vested		117
(b) Inactive Members Not Yet Receiving Benefits		0
(c) Members Receiving		
(i) Retirement Pensions		139
(ii) Survivor Pensions		49
(iii)Disability Pensions		26
(d) Total		439
2. Annual Salaries		
(a) Total Salary	$	13,914,657
(b) Average Salary		61,843
3. Total Accumulated Contributions of Active Members	$	10,564,939
4. Annual Benefit Payments Currently Being Made		
(a) Retirement Pensions		6,539,674
(b) Survivor Pensions		1,343,563
(c) Disability Pensions		764,969

Assets. In November of 1994, the Governmental Accounting Standards Board (GASB) issued GASB Statement No. 25, which establishes standards of financial reporting for governmental pension plans. Under GASB Statement No. 25, the actuarial value of assets to be used for determining a plan's funded status and annual required contribution needs to be market related.

However, GASB has indicated that current market values should not be used if those values would result in unnecessary fluctuation in the funded status and the annual required contribution. Thus, in determining the actuarial value of assets, smoothing changes in the market value of assets over a period of three to five years is considered appropriate.

The asset values for the valuation were based on the asset information contained in the financial statements of the pension fund as of February 29, 2008. The actuarial value of assets was determined by smoothing unexpected gains or losses from investment return over a four-year period. The resulting actuarial value of assets is $86,583,058. The development of this value is outlined in Exhibit 2.

Exhibit 2

Actuarial Value of Assets

A. Development of Investment Gain/(Loss) for the Year 2008

1.	Actuarial Value of Assets as of February 28, 2007	$ 82,567,784
2.	Contributions	7,478,537
3.	Disbursements	8,298,681
4.	Expected Investment Income	6,573,248
5.	Actual Investment Income	2,671,091
6.	Investment Gain/(Loss) (5 – 4)	(3,902,157)

B. Development of Actuarial Value of Assets

7.	Expected Value of Assets (1 + 2 – 3 + 4)	$ 88,320,888
8.	One Fourth of Investment Gain/(Loss) for 2005	(752,429)
9.	One Fourth of Investment Gain/(Loss) for 2006	(254,356)
10.	One Fourth of Investment Gain/(Loss) for 2007	244,494
11.	One Fourth of Investment Gain/(Loss) for 2008	(975,539)
12.	Actuarial Value of Assets (7 + 8 + 9 + 10 + 11)	$ 86,583,058

C. FUND PROVISIONS

Our valuation was based on the provisions of the fund in effect as of February 29, 2008 as provided in Article 4 of the Illinois Pension Code. A summary of the principal provisions of the fund is provided in Appendix 1.

D. ACTUARIAL ASSUMPTIONS AND COST METHOD

For the February 29, 2008 valuation, the investment return rate assumption was reduced from 8.0% per year to 7.0% per year. The other actuarial assumptions used for the February 29, 2008 valuation are the same as the assumptions used for the February 28, 2007 valuation. The actuarial assumptions used for the February 29, 2008 valuation are summarized below:

Mortality Rates. The UP-1984 Mortality Table was used for the valuation.

Termination Rates. The following is a sample of the termination rates that were used:

Age	Rate of Termination
25	.0175
30	.0110
35	.0045
40	.0005
45	.0066
50 and over	.0088

Disability Rates. The following is a sample of the disability rates that were used:

Age	Rate of Disability
25	.0001
30	.0001
35	.0013
40	.0063
45	.0107
50	.0167
55	.0261
60	.0411
65	.0635

Retirement Rates. Rates of retirement for each age from 50 to 66 were used. The following is a sample of the retirement rates that were used:

Age	Rate of Retirement
50	.1365
55	.1350
60	.3012
65	.2642
66	1.0000

Salary Progression. 5.0% per year, compounded annually. This can be considered to consist of a 4.0% inflation assumption and a 1.0% merit increase assumption.

Investment Return Rate. 7.0% per year, compounded annually.

Marital Status. 80% of participants were assumed to be married.

Spouse's Age. The age of the spouse was assumed to be 4 years younger than the age of the employee.

Actuarial Value of Assets. The actuarial value of assets was determined by smoothing unexpected gains or losses from investment return over a four-year period.

Actuarial Cost Method. The entry age actuarial cost method was used with costs allocated on the basis of earnings.

E. ACTUARIAL LIABILITY

The actuarial liability as determined under the valuation for the various classes of members is summarized in Exhibit 3. The total actuarial liability is then compared with the actuarial value of assets in order to arrive at the unfunded actuarial liability. (The actuarial terms used in this report are defined in Appendix 2.)

As of February 29, 2008 the total actuarial liability is $175,917,518, the actuarial value of assets is $86,583,058, and the unfunded actuarial liability is $89,334,460. The ratio of the actuarial value of assets to the actuarial liability, or funded ratio, is 49.2%.

Exhibit 3

Actuarial Liability as of February 29, 2008

1. Actuarial Liability For Members Receiving Benefits	
(a) Retirement Pensions	$ 93,804,255
(b) Survivor Pensions	12,438,514
(c) Disability Pensions	10,708,168
(d) Total	$ 116,950,937
2. Actuarial Liability For Inactive Members	0
3. Actuarial Liability For Active Members	58,966,581
4. Total Actuarial Liability	$ 175,917,518
5. Actuarial Value of Assets	86,583,058
6. Unfunded Actuarial Liability	$ 89,334,460
7. Funded Ratio	49.2%

Impact of Change in Interest Rate Assumption. We have estimated that the change in the interest rate assumption used for the February 29, 2008 actuarial valuation had the impact of increasing the total actuarial liability by $18,677,819.

F. RECONCILIATION OF CHANGE IN UNFUNDED LIABILITY

The net actuarial experience during the period March 1, 2007 to February 29, 2008 resulted in an increase in the fund's unfunded liability of $23,986,062. This increase in unfunded liability is a result of several kinds of gains and losses. The financial effect of the most significant gains and losses is illustrated in Exhibit 4.

The net rate of investment return earned by the fund during the year, based on the actuarial value of assets, was approximately 5.9%, in comparison to the assumed rate of 8.0%. This resulted in an increase in the unfunded liability of $1,737,830. Salaries increased at an average rate of approximately 6.9% during the year, in comparison to the assumed rate of 5.0%. This resulted in an increase in the unfunded liability of $1,025,032.

The contribution required to keep the unfunded liability from increasing was $7,368,907, whereas the actual employer contribution was $6,131,904, resulting in an increase in the unfunded liability

of $1,237,003.

The change in the investment return rate assumption had the impact of increasing the unfunded liability by $18,677,819. The various other aspects of the fund's experience results in a net increase in the unfunded liability of $1,308,378. The aggregate financial experience of the fund resulted in an increase in the unfunded liability of $23,986,062.

Exhibit 4

Reconciliation of Change in Unfunded Actuarial Liability
Over the Period March 1, 2007 to February 29, 2008

1.	Unfunded Liability as of March 1, 2007	$ 65,348,398
2.	Increase in Unfunded Liability Due to Investment Return Lower Than Assumed	1,737,830
3.	Increase in Unfunded Liability Due to Salary Increases Higher Than Assumed	1,025,032
4.	Increase in Unfunded Liability Due to Employer Contribution Less Than Amount Required to Keep Unfunded Liability from Increasing	1,237,003
5.	Increase in Unfunded Liability Due to Change in the Investment Return Rate Assumption	18,677,819
6.	Increase in Unfunded Liability Due to Other Sources	1,308,378
7.	Net Increase in Unfunded Liability for the Year (2 + 3 + 4 + 5 + 6)	23,986,062
8.	Unfunded Liability as of February 29, 2008 (1 + 7)	$ 89,334,460

G. NORMAL COST

The normal cost for the year beginning March 1, 2008 is developed in Exhibit 5. For the year beginning March 1, 2008, the total normal cost is estimated to be $4,712,961, which can be expressed as 33.87% of payroll.

Exhibit 5

Normal Cost For Year Beginning March 1, 2008

	Dollar Amount	Percent of Payroll
1. Basic Retirement Pension	$ 1,971,002	14.16%
2. Annual Increases in Pension	577,061	4.15
3. Survivor's Pension	770,092	5.53
4. Disability Pension	1,242,417	8.93
5. Refunds	21,634	.16
6. Administrative Expenses	130,755	.94
7. Total Normal Cost	$ 4,712,961	33.87%

Note. The figures are based on a total active payroll of $13,914,657 as of March 1, 2008.

H. ANNUAL ACTUARIAL REQUIREMENTS FOR YEAR BEGINNING MARCH 1, 2009

According to Section 5/4-118 of the Illinois Pension Code, the city council shall annually levy a tax which, when added to employee contributions, will produce an amount sufficient to meet the annual actuarial requirements of the pension fund. Section 5/4-118 defines the annual actuarial requirements of the pension fund to be equal to (1) the normal cost of the pension fund, plus (2) the annual amount required to amortize the fund's unfunded actuarial liability over a period of 40 years from July 1, 1993 as a level percent of payroll.

It is our understanding that the results of the current valuation will be used to determine the amount of tax to be levied by the City for contribution to the pension fund in the year beginning March 1, 2009. We have therefore determined the annual actuarial requirements of the pension fund for the year beginning March 1, 2009. The results are summarized in Exhibit 6.

As can be seen from Exhibit 6, for the year beginning March 1, 2009, the annual actuarial requirements of the pension fund amount to $10,245,352, or 70.80% of projected payroll. Employee contributions for the year are estimated to be $1,368,256 or 9.46% of projected payroll. The amount of tax to be levied by the City so that total revenues will be sufficient to meet the annual actuarial requirement is therefore $8,877,096, or 61.34% of payroll.

Exhibit 6

Annual Actuarial Requirements for Year Beginning March 1, 2009

	Dollar Amount	Percent of Payroll
1. Total Normal Cost	$ 4,901,479	33.87%
2. Annual Amount Required to Amortize Unfunded Liability Over 40 Years Subsequent to July 1, 1993 as a Level Percent of Payroll	$ 5,343,873	36.93
3. Annual Actuarial Requirement for Year Beginning March 1, 2009 (1 + 2)	$ 10,245,352	70.80%
4. Employee Contributions for Year	1,368,256	9.46
5. Amount of Tax to be Levied by City so that Total Revenue will be Sufficient to Meet Annual Actuarial Requirements (3 – 4)	$ 8,877,096	61.34%

Note. The above figures have been based on a projected payroll of $14,471,243.

I. CERTIFICATION

This actuarial report has been prepared in accordance with generally accepted actuarial principles and practices and, to the best of our knowledge, fairly represents the financial condition of the Springfield Firefighters' Pension Fund as of February 29, 2008.

Respectfully submitted,

Sandor Goldstein, F.S.A.
Consulting Actuary

Carl J. Smedinghoff, A.S.A.
Associate Actuary

Ryan Gundersen
Actuarial Assistant

APPENDIX 1

SUMMARY OF PRINCIPAL PROVISIONS

Pension Benefits

A firefighter age 50 or over who has at least 20 years of creditable service and is no longer in service as a firefighter is entitled to a monthly pension of 1/2 of the monthly salary attached to the firefighter's rank at the date of retirement. The pension is increased 1/12 of 2.5% of such monthly salary for each additional month over 20 years of service through 30 years of service, to a maximum of 75% of such monthly salary.

Separation Benefits

A firefighter who is separated from service having at least 10 years but less than 20 years of creditable service is entitled upon attainment of age 60 to a pension based on the monthly salary attached to his or her rank in the fire service on the date of separation of service, according to the following schedule:

- For 10 years of service, 15.0% of salary;
- For 11 years of service, 17.6% of salary;
- For 12 years of service, 20.4% of salary;
- For 13 years of service, 23.4% of salary;
- For 14 years of service, 26.6% of salary;
- For 15 years of service, 30.0% of salary;
- For 16 years of service, 33.6% of salary;
- For 17 years of service, 37.4% of salary;
- For 18 years of service, 41.4% of salary;
- For 19 years of service, 45.6% of salary.

Annual Increases In Pension

The monthly pension of a firefighter who retires after January 1, 1977, shall, upon either the first of the month following the first anniversary of the date of retirement, if 55 years of age or over at retirement date, or upon the first day of the month following attainment of age 55 if it occurs after the first anniversary of retirement, be increased by 1/12 of 3% of the originally granted monthly pension for each full month that has elapsed since the pension began, and by an additional 3% in each January thereafter.

The monthly pension of a firefighter who is receiving a disability pension shall be increased in January of the year following the year the firefighter attains age 60 by 3% of the originally granted monthly pension for each year that pension payments have been made. In each January thereafter, the firefighter shall receive an additional increase of 3% of the original monthly pension.

Disability Pension

If a firefighter, as a result of an act of duty or an occupational disease, is found to be disabled for service in the fire department, the firefighter shall be granted a disability pension equal to the greater of (1) 65% of the firefighter's salary, or (2) the retirement pension that the firefighter would be eligible to receive if he or she retired.. If the disability is the result of any cause, and the firefighter has a minimum of 7 years of creditable service, the disability pension is 50% of monthly salary.

In addition, any firefighter disabled by an act of duty or an occupational disease is entitled to receive a child's disability benefit of $20 a month for each dependent minor child, provided that the total benefits received does not exceed 75% of the salary he or she was receiving at the date of removal from the municipality's payroll.

Pension To Survivors

Upon the death of an active firefighter, his or her surviving spouse, is entitled to a survivor's pension of 54% of the firefighter's monthly salary. Upon the death of a disabled, or retired firefighter, his or her surviving spouse, children, or dependent parents are entitled to a survivor's pension as follows: To the surviving spouse, a monthly pension of the greater of 54% of the firefighter's monthly salary or the pension which the firefighter was receiving at the time of death, and to the guardian of each minor child, 12% of such monthly salary for each child, until attainment of age 18.

Beginning July 1, 2004, the total monthly pension payable to the surviving spouse of a firefighter who died while receiving a retirement pension, including the amount payable on account of children, shall be no less than 100% of the monthly retirement pension that the deceased firefighter was receiving at the time of death.

Contributions By Firefighters

Firefighters are required to contribute 9.455% of their salary to the pension fund as a condition of participation in the pension fund.

Appendix 2

Glossary of Terms used in Report

1. Actuarial Present Value. The value of an amount or series of amounts payable at various times, determined as of a given date by the application of a particular set of actuarial assumptions.

2. Actuarial Cost Method or Funding Method. A procedure for determining the actuarial present value of pension plan benefits and for determining an actuarially equivalent allocation of such value to time periods. Usually in the form of a normal cost and an actuarial accrued liability.

3. Normal Cost. That portion of the actuarial present value of pension plan benefits, which is allocated to a valuation year by the actuarial cost method.

4. Actuarial Accrued Liability or Accrued Liability. That portion, as determined by a particular actuarial cost method, of the actuarial present value of pension benefits which is not provided for by future normal costs.

5. Actuarial Value of Assets. The value assigned by the actuary to the assets of the pension plan for purposes of an actuarial valuation.

6. Unfunded Actuarial Liability. The excess of the actuarial liability over the actuarial value of assets.

7. Entry Age Actuarial Cost Method. A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age. The portion of this actuarial present value allocated to a valuation year is called the normal cost. The portion of this actuarial present value not provided at a valuation date by the actuarial present value of future normal costs is called the actuarial liability.

8. Actuarial Assumptions. Assumptions as to future events affecting pension costs.

9. Actuarial Valuation. The determination, as of a valuation date, of the normal cost, actuarial liability, actuarial value of assets, and related actuarial present values for the pension plan.

10. Accrued Benefit or Accumulated Plan Benefits. The amount of an individual's benefit as of a specific date determined in accordance with the terms of a pension plan and based on compensation and service to that date.

11. Vested Benefits. Benefits that are not contingent on an employee's future service.