SPRINGFIELD FIREFIGHTERS' PENSION FUND

ACTUARIAL VALUATION
AS OF FEBRUARY 28, 1995

GOLDSTEIN & ASSOCIATES

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December 5, 1995

Mr. Bill Franklin
Director of Budget and Management
City of Springfield
Room 210 - Municipal Building
Springfield, Illinois 62701

Re: Actuarial Valuation of Springfield Firefighters' Pension Fund

Dear Mr. Franklin:

I am pleased to submit my actuarial report on an actuarial valuation of the Springfield Firefighters' Pension Fund as of February 28, 1995.

The report consists of 10 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

Sandor Goldstein
Fellow of the Society of Actuaries
Enrolled Actuary No. 93-3402

A. PURPOSE AND SUMMARY

We have carried out an actuarial valuation of the Springfield Firefighters' Pension Fund as of February 28, 1995. 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	$ 58,026,479
2.	Actuarial value of assets	$ 52,587,714
3.	Unfunded actuarial liability	$ 5,438,765
4.	Funded ratio	90.6%
5.	Total normal cost	$ 2,264,353
6.	Annual actuarial requirement for year beginning March 1, 1995	$ 2,518,898
7.	Amount of tax to be levied by City so that total revenue will be sufficient to meet annual actuarial requirement	$ 1,798,017
8.	Actuarial present value of credited projected benefits	$ 58,604,606

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 28, 1995, on which the valuation is based, is summarized in Exhibit 1. It can be seen that there were 203 active members and 150 members receiving benefits. The total active payroll as of February 28, 1995 was $8,737,954.

Exhibit 1

Summary of Participant Data

1. Number of Members	
(a) Active Members	
(i) Vested	120
(ii) Non-vested	83
(b) Members Receiving	
(i) Retirement Pensions	75
(ii) Survivor Pensions	51
(iii) Disability Pensions	24
(c) Total	353
2. Annual Salaries	
(a) Total Salary	$ 8,737,954
(b) Average Salary	43,044
3. Total Accumulated Contributions of Contributors	$ 5,862,905
4. Annual Benefit Payments Currently Being Made	
(a) Retirement Pensions	1,667,662
(b) Survivor Pensions	338,480
(c) Disability Pensions	421,605

Assets. The asset values used for the valuation were based on the asset information contained in the financial statements of the pension fund as of February 28, 1995. For purposes of the valuation, the book value of the assets of the fund less the amount of liabilities was used. The resulting actuarial value of assets is $52,587,714. The development of this value is outlined in Exhibit 2.

Exhibit 2

Actuarial Value of Assets

1. Cash	$ 1,066
2. Receivables	2,419,566
3. Investments at Cost or Amortized Cost	50,167,082
4. Total Assets	$ 52,587,714
5. Liabilities	0
6. Actuarial Value of Assets (4-5)	$ 52,587,714

C. FUND PROVISIONS

Our valuation was based on the provisions of the fund in effect as of February 28, 1995 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

A recent study that we have performed regarding the experience under 43 firefighters' pension funds in Illinois indicates that retirement rates under firefighters' pension funds can be expected to be higher than the retirement rates used in our previous actuarial valuations of the fund. We have therefore made some changes in the retirement rates used for the current valuation. We are proposing to phase-in the retirement rates based on the results of the study over a three-year period.

We have also made a revision in the portion of participants assumed to be married from 85% to 80%. The other actuarial assumptions used for the February 28, 1995 valuation are the same as the assumptions used for the February 28, 1994 valuation. The actuarial assumptions used for the February 28, 1995 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	.0250
30	.0146
35	.0079
40	.0042
45	.0029
50	.0000

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

Age	Rate of Disability
25	.0009
30	.0025
35	.0046
40	.0065
45	.0097
50	.0166
55	.0314

Retirement Rates. Rates of retirement for each age from 50 to 69 were used. The following is a sample of the retirement rates that were used for the valuation:

Age	Rate of Retirement
50	.1151
55	.0743
60	.1666
65	.4074
69	1.0000

Salary Progression. 5.5% per year, compounded annually.

Investment Return Rate. 8.0% 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 book value of the assets of the fund was used.

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 28, 1995 the total actuarial liability is $58,026,479 the actuarial value of assets is $52,587,714, and the unfunded actuarial liability is $5,438,765. The ratio of the actuarial value of assets to the actuarial liability, or funded ratio, is 90.6%.

Exhibit 3

Actuarial Liability as of February 28, 1995

1. Actuarial Liability For Members Receiving Benefits	
(a) Retirement Pensions	$ 19,634,948
(b) Survivor Pensions	2,866,292
(c) Disability Pensions	5,418,112
(d) Total	$ 27,919,352
2. Actuarial Liability For Active Members	30,107,127
3. Actuarial Liability For Inactive Members	0
4. Total Actuarial Liability	$ 58,026,479
5. Actuarial Value of Assets	$ 52,587,714
6. Unfunded Actuarial Liability	$ 5,438,765
7. Funded Ratio	90.6%

F. RECONCILIATION OF CHANGE IN UNFUNDED LIABILITY

The net actuarial experience during the period March 1, 1994 to February 28, 1995 resulted in an increase in the fund's unfunded liability of $520,345. 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 was approximately 6.6%, in comparison to the assumed rate of 8.0%. This resulted in an increase in the unfunded liability of $687,028. Salaries increased at an average rate of approximately 9.8% during the year, in comparison to the assumed rate of 5.5%. This resulted in an increase in the unfunded liability of $1,268,362.

The annual actuarial requirement of the fund for the year was $1,737,767, whereas the actual employer contribution was $1,750,000, resulting in a decrease in the unfunded liability of $12,233.

The changes made in the actuarial assumptions used for the February 28, 1995 valuation resulted in a decrease in the unfunded liability of $915,375.

The various other aspects of the fund's experience resulted in a net decrease in the unfunded liability of $507,437. The aggregate financial experience of the fund resulted in an increase in the unfunded liability of $520,345.

Exhibit 4

Reconciliation of Change in Unfunded Actuarial Liability
Over the period March 1, 1994 to February 28, 1995

1.	Unfunded Liability as of March 1, 1994	$ 4,918,420
2.	Increase in Unfunded Liability Due to Investment Return Lower Than Assumed	687,028
3.	Increase in Unfunded Liability Due to Salary Increases Higher Than Assumed	1,268,362
4.	Decrease in Unfunded Liability Due to Employer Contribution Larger Than Annual Actuarial Requirement	12,233
5.	Decrease in Unfunded Liability Due to Changes in Assumptions Used for the February 28, 1995 Valuation	915,375
6.	Decrease in Unfunded Liability Due to Other Sources	507,437
7.	Net Increase in Unfunded Liability for the Year (2+3-4-5-6)	520,345
8.	Unfunded Liability as of February 28, 1995 (1+7)	$ 5,438,765

G. NORMAL COST

The normal cost for the year beginning March 1, 1995 is developed in Exhibit 5. For the year beginning March 1, 1995, the total normal cost is estimated to be $2,264,353, which can be expressed as 25.91% of payroll.

Exhibit 5

Normal Cost For Year Beginning March 1, 1995

		Dollar Amount	Percent of Payroll
1.	Basic Retirement Pension	$ 896,368	10.26%
2.	Annual Increases in Pension	232,691	2.66
3.	Survivor's Pension	340,193	3.89
4.	Disability Pension	736,466	8.43
5.	Refunds	12,106	.14
6.	Administrative Expenses	46,529	.53
7.	Total Normal Cost	$ 2,264,353	25.91%

Note. The above normal cost figures have been adjusted to include interest to the end of the year, as payments will not be made until the end of the year. The figures are based on a total active payroll of $8,737,954 as of March 1, 1995.

Impact of Changes in Assumptions. The changes in assumptions used for the February 28, 1995 actuarial valuation had the impact of decreasing the normal cost by $60,220.

H. ANNUAL ACTUARIAL REQUIREMENTS FOR YEAR BEGINNING MARCH 1, 1995

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.

The annual actuarial requirements of the pension fund for the year beginning March 1, 1995 and the amount of tax to be levied for the year are developed in Exhibit 6. As can be seen from Exhibit 6, for the year beginning March 1, 1995, the annual actuarial requirements of the pension fund amount to $2,518,898, or 28.83% of payroll. Employee contributions for the year are estimated to be $720,881, or 8.25% of 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 $1,798,017, or 20.58% of payroll.

Exhibit 6

Annual Actuarial Requirements for Year Beginning March 1, 1995

	Annual Amount	Percent of Payroll
1. Total Normal Cost	$ 2,264,353	25.91%
2. Annual Amount Required to Amortize Unfunded Liability Over 40 Years From July 1, 1993 as a level percent of payroll	254,545	2.92%
3. Annual Actuarial Requirement for Year Beginning March 1, 1995 (1+2)	$ 2,518,898	28.83%
4. Employee Contributions for Year	720,881	8.25%
5. Amount of Tax to be Levied by City so that Total Revenue will be Sufficient to Meet Annual Actuarial Requirements (3-4)	$ 1,798,017	20.58%

Note. The above figures have been adjusted to include interest to the end of the year, as payments will not be made until the end of the year.

Impact of Changes in Assumptions. The changes in assumptions used for the February 28, 1995 actuarial valuation had the impact of decreasing the annual actuarial requirement by $103,061.

I. ACTUARIAL PRESENT VALUE OF CREDITED PROJECTED BENEFITS

Governmental Accounting Standards Board (GASB) Statement No. 5, entitled Disclosure of Pension Information by Public Employee Retirement Systems and State and Local Governmental Employers, establishes standards of disclosure of pension information by public employee retirement systems.

GASB Statement No. 5 requires the disclosure of the actuarial present value of credited projected benefits as the standardized measure of the accrued pension obligation. This measure represents the discounted value of the amount of benefits estimated to be payable in the future as a result of employee service to date, computed by attributing an equal benefit amount to each year of service to the employee.

We have therefore calculated the actuarial present value of credited projected benefits as part of the actuarial valuation. The results of our calculations are shown in Exhibit 7. It can be seen from Exhibit 7 that the actuarial present value of credited projected benefits as of February 28, 1995 amounts to $58,604,606, and the unfunded actuarial present value of credited projected benefits amounts to $6,016,892.

Exhibit 7

Actuarial Present Value of Credited Projected Benefits

1.	For Members in Receipt of Benefits and for Inactive Members	$ 27,919,352
2.	For Current Employees	
	Accumulated Employee Contributions	5,862,905
	Employer-Financed Vested	12,773,642
	Employer-Financed Non-vested	12,048,707
3.	Total Actuarial Present Value of Credited Projected Benefits	$ 58,604,606
4.	Net Assets Available for Benefits, at Cost	$ 52,587,714
5.	Unfunded Actuarial Present Value of Credited Projected Benefits	$ 6,016,892

Impact of Changes in Assumptions. The changes in assumptions used for the February 28, 1995 actuarial valuation had the impact of decreasing the actuarial present value of credited projected benefits by $999,083.

J. 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 28, 1995.

Respectfully submitted,

Sandor Goldstein

Sandor Goldstein
Fellow of the Society of Actuaries
Enrolled Actuary No. 93-3402

Carl J. Smedinghoff

Carl J. Smedinghoff
Associate of the Society of Actuaries

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% of such monthly salary for each additional month over 20 years of service through 30 years of service, and 1/12 of 1% of such monthly salary for each additional month over 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 3% of the originally granted monthly pension for each full year 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 of 65% of the salary attached to the rank of the firefighter at the date of removal from the municipality's payroll. 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, 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 54% of the firefighter's monthly salary, and to the guardian of each minor child, 12% of such monthly salary for each child, until attainment of age 18.

Contributions By Firefighters

Firefighters are required to contribute 8 1/4% 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.