

**CITY OF EVANSTON
FIREFIGHTERS' PENSION FUND**

**ACTUARIAL VALUATION
AS OF MARCH 1, 2011 FOR THE
PLAN YEAR ENDING FEBRUARY 29, 2012**

September 27, 2011

September 27, 2011

Mr. Martin Lyons
Mr. Darren Daugherty
City of Evanston
2100 Ridge Avenue
Evanston, IL 60201

RE: Evanston Firefighters Pension Fund

Gentlemen:

Enclosed are 2 copies of our actuarial valuation report for the **Evanston Firefighters' Pension Fund** for the fiscal year March 1, 2011 through February 29, 2012.

The results of our valuation indicate that the recommended minimum contribution from the City for the next tax year is **\$6,401,393** or **71.64%** of current payroll. This contribution coupled with the anticipated \$812,334 or 9.455% of current payroll to be collected from participating firefighters will be sufficient to meet the State statutory requirements described in 40 ILCS 5/4. Further information is provided within our report.

Alternatively, under the current statute, our valuation results indicate the statutory minimum contribution for the City for the next tax year to be \$4,596,235 or 51.44%.

With the publication of Statement No. 25 of the Governmental Accounting Standards Board, we our report includes the calculation of the unadjusted Annual Required Contribution. (ARC) We have chosen to calculate this contribution as a level percentage of payroll funded amortization of the unfunded liability over a closed 40 year period beginning with the date of adoption of GASB 25. This amount is \$5,632,665 or 63.04% of participating payroll.

The increase in employer pension contributions resulting from the implementation of P.A. 93-0689 has been estimated to be **\$115,139**.

We ask that you review the sections entitled "Selection of the Actuarial Cost Method", "Actuarial experience since the last actuarial valuation" and "Factors Influencing the Choice of Actuarial Assumptions" beginning on page 2 for a complete explanation of what has occurred since the last actuarial valuation.

Please do not hesitate to contact us if you have any questions concerning our report.

Sincerely,

TEPFER CONSULTING GROUP, LTD.

Arthur H. Tepfer, A.S.A., M.A.A.A.
Consulting Actuary

AHT/lf
Encl.

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Tepfer Consulting Group, Ltd. was retained by the **City of Evanston and City of Evanston Firefighters' Pension Plan** to perform an independent actuarial valuation for the Firefighters' Pension Fund. This valuation is permitted under 40 ILCS 5/22, Section 503.2.

The actuarial valuation was performed for the year ended February 29, 2012 and indicates a **statutorily required contribution in accordance with 40 ILCS 5/4, Section 118 of \$4,596,235 or 51.44% of member payroll, a recommended minimum contribution of \$6,401,393 or 71.64% of payroll, and an Annual Required Contribution in accordance with paragraph 36f of Statement No. 25 of the Governmental Accounting Standards Board of \$5,632,665 or 63.04% of payroll.** These contributions are net of contributions made by active member firefighters during the fiscal year.

The results shown in this report have been calculated under the supervision of a qualified Actuary as defined in appropriate State statutes. All results are based upon demographic data submitted by the Firefighters' Pension Fund, financial data submitted by the Firefighters' Pension Fund, applications of actuarial assumptions, and generally accepted actuarial methods.

In our opinion, all calculations and procedures are in conformity with generally accepted actuarial principles and practices; and the results presented comply with the requirements of the applicable State statute, Actuarial Standards Board, or Statements of Governmental Accounting Standards, as applicable.

In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the plan and future expectations, and represent a reasonable and adequate approach to the financing of the retirement program. The costs, actuarial liabilities and other information presented in this report, in our opinion, fully and fairly disclose the actuarial position of the plan.

I, Arthur H. Tepfer, am an Enrolled Actuary in good standing under the Employee Retirement Income Security Act of 1974. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. I certify that the results presented in this report are accurate and correct to the best of my knowledge.

TEPFER CONSULTING GROUP, LTD.

Arthur H. Tepfer, A.S.A., M.A.A.A.
Enrolled Actuary #11-02352

August 29, 2011

VALUATION OBJECTIVES

The **City of Evanston Firefighters' Pension Plan** provides benefits to members when they retire, die, become disabled or terminate employment. As with any plan providing these types of benefits, an appropriate budgeting pattern must be established to enable appropriate funds to be accumulated to meet all payments when due. The actual cost of the plan can best be expressed in the following simplistic manner:

ACTUAL COST EQUALS	Benefits Paid
	Plus
	Expenses Paid
	Less
	Investment Income Earned

If the actual cost is incurred on a "pay as you go" basis, then the future generations of members will be paying for the benefits of current plan participants. Proper financial planning calls for budgeting the actual cost of the plan over the working lifetime of current plan membership in order to establish an equitable allocation. An actuarial valuation is the procedure used to determine an appropriate amount to be contributed to the pension plan each year in order to attain this equity.

An actuarial valuation is an estimate at a particular point in time of the predicted incidence of the future benefit costs. Since the actual cost of the plan is essentially unknown, pre-funding (budgeting for future benefit costs) requires certain assumptions about future events. Assumptions are made for such things as salary increases, terminations of participants, disablement of participants, death of participants and anticipated investment earnings. These assumptions although not affecting the actual costs of the plan will affect the incidence of predicted future costs. For proper funding, it is required that the Actuary select assumptions which are appropriate in light of the economic, demographic, and legislative environment as they relate to the pension program. The assumptions we have made concerning these future events are described more fully in Appendix 2 of this report. Based on these assumptions, a projection of future benefits was made and a current contribution level sufficient to provide the anticipated benefit payments was determined through the use of an actuarial cost method.

VALUATION OBJECTIVES (Continued)

Selection of the Actuarial Cost Method

An actuarial cost method, sometimes called a “funding method”, therefore, is essentially an approach to budgeting the estimated future costs. There are many actuarial cost methods which are available to the actuary and each method operates differently. However, all funding methods accomplish the same objective—to assign to each fiscal year of the employer the portion assumed to have accrued in that year. The portion of the actuarial value of benefits assigned to a particular year in respect of an individual participant or the fund as a whole is called the **normal cost**. All funding methods are described by how the normal cost is calculated.

The actuarial cost method prescribed by the State statutes to determine the **statutorily minimum required contribution** for periods on or after January 1, 2011 is the Projected Unit Credit Cost Method. Under this actuarial cost method, the ongoing cost as a percentage of total payroll will increase. In this method, the normal cost is determined by first calculating the projected dollar amount of each participant’s accumulated benefit under the plan as of both the first day of the fiscal year and as of the last day of the fiscal year and then determining the difference between these two amounts. The second step in deriving the normal cost for a given participant is to multiply the dollar amount of this difference by the actuarial present value of \$1 of benefit.

The actuarial cost method selected by our firm to determine the **recommended plan contribution** is the Entry Age Normal Cost Method. Under this actuarial cost method, ideally, the ongoing cost as a percentage of total payroll should remain fairly stable. In this method, the normal cost is determined by assuming each participant covered by the plan entered the plan under the same conditions that will apply to future plan entrants. The annual normal cost assigned to each year of an employee's career is calculated as a level percentage of the employees assumed earnings each year. These normal costs accumulate to the present value of the employee's benefit at retirement age.

Under both the Entry Age Normal Cost Method and the Projected Unit Credit Cost Method, the total funding of projected benefit costs is allocated between an **unfunded liability**, representing past benefit history, and future normal costs. This allocation is based on the assumption that the municipality will pay the normal cost for each plan year on a regular basis. It should be noted that although the term “unfunded liability” is applied to both funding methods, the resulting amount is different because of the method of calculation. Another feature of these methods is that only the unfunded liability is affected by the experience of the plan, and therefore any adjustments are made in the future amortization payments.

In addition to the methodology changes described above, P.L. 96-1495 also addressed the valuation of pension fund assets—the second component in the determination of the unfunded liability. The statute now provides that the actuarial value of a pension fund’s assets be set equal to the market value of the assets on March 30, 2011 and that, in determining the actuarial value of assets after that date, any actuarial gains or losses from investment returns incurred in a fiscal year be recognized in equal amounts over the 5-year period following that fiscal year.

**VALUATION OBJECTIVES
(Continued)**

The actuarial valuation process is usually repeated each year and is to a certain extent self-correcting. As part of these actuarial cost methods, any deviation of actual experience from the chosen actuarial assumptions will be reflected in future contributions. A complete description of these actuarial cost methods is explained in Appendix 4 of this report.

Appendix 3 of this report contains a summary of the principal provisions of the applicable statute.

Despite the statutory language which requires an application of the Projected Unit Credit method, we feel that funding under this method as a *level percentage of payroll* severely undermines the benefit security of the retirement system and transfers the payment for currently earned pensions to future generations of taxpayers. For these reasons, our valuation report presents a recommended minimum contribution which will operate to maintain the fundamental fiscal soundness of the retirement program, although a statutorily required contribution has also been calculated. The calculation of the recommended minimum contribution is based upon an amortization payment of 90% of any unfunded accrued liabilities as a *level dollar amount* over 30 years from January 1, 2011, the effective date of P.A. 96-1495. The calculation of the statutorily required contribution is based upon an amortization payment of 90% of any unfunded accrued liabilities as a *level percentage of payroll* over 30 years from January 1, 2011, the effective date of P.L. 96-1495.

Although, I do not agree with the statutorily required level percentage of payroll methodology of determining the amortization of the unfunded accrued liability, I would be remiss if I did not advise my funds as to a "statutorily" acceptable calculation under the State law. *I patently consider the calculation methodology under the statute to be actuarially unsound for funding of Downstate municipal retirement programs.*

Effective for periods beginning after June 15, 1996, the Governmental Accounting Standards Board has issued Statement No. 25 "Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans". This Statement establishes a financial reporting framework for defined benefit pension plans that distinguishes between two categories of information: (a) current financial information about plan assets and financial activities and (b) actuarially determined information, from a long-term perspective, about the funded status of the plan and the progress being made in accumulating sufficient assets to pay benefits when due. The calculation of the Annual Required Contribution (ARC) is described in paragraph 36f of the Statement and is based upon an amortization payment of any unfunded accrued liabilities as either a level dollar amount or a level percentage of total payroll over a maximum of 40 years from the effective date of the Statement. Any significant increase in the total unfunded actuarial liability resulting from a change in actuarial methodology should be amortized over a period not less than 10 years.

Factors Influencing the Choice of Actuarial Assumptions

As part of the consulting process, it is our policy to talk with selected members of the Board of Trustees and the Sponsor's representatives for the **City of Evanston Firefighters' Pension Plan** in order to obtain information which will enable the Actuary to properly choose the actuarial assumptions which are most appropriate for the current cost determination for the pension fund.

**VALUATION OBJECTIVES
(Continued)**

Prior to the meeting, statistics are compiled concerning historical investment returns, salary increases, retirement incidence and other factors which are influential in the actuarial assumption setting process. Based upon an analysis of the specifics as they relate to the **City of Evanston Firefighters' Pension Plan** and a general understanding of the inter-relationships of the actuarial assumptions, the Board, the Sponsor and the Actuary reach a mutual agreement as to the assumptions which will be used in the current actuarial valuation.

Published statistics regarding experience for police and firefighters are available from the State of Illinois Department of Insurance. These statistics form the basis of the actuarial assumptions selected by the State Actuary in the valuation of pension funds covered under the Downstate Pension System. We have found in our consulting, that whenever appropriate, the actuarial assumptions used by the State Actuary are relied upon as a starting point. However, in order to make the calculations more "*Evanston-sensitive*", the analysis of the actual historical performance is carefully examined. In a take-over situation, such as this, the actuarial assumptions used by the prior actuary are given substantial weight in the overall choice of assumptions.

Demographic considerations

For this valuation it was noted that the force is reasonably stable as to its size and demographic composition. In the current valuation, it was observed that the number of inactive participants (137, exclusive of terminated participants who are due a refund of their contributions) as compared to active participants (104) in the Fund is slightly higher than the State average (57% of the total participants are inactive as compared to a State average of 39%); on a liability basis the Fund is also slightly higher than the State averages. Approximately 67%-70% of the Fund's total liability is attributed to inactive participants compared to a State average of about 53%. This means that the fund is in a less favorable position compared to other Firefighter funds in the State. Nonetheless, the average age and service of the active participating group is essentially at the State average.

Of further concern, is the fact that there are currently 20 firefighters who are eligible to retire and 13 firefighters who will become eligible in the next 5 years. This represents about 29% of the current active group. Additionally, pension payments have been escalating. Nonetheless, absent a large growth in the active force, with proper funding, the fund's position should become more favorable for the foreseeable future. The fund, however, is not in a strong financial position.

As would be expected in this situation, a very large portion of the assets available for investment (147%) has been committed to provide benefits for existing pensioners and beneficiaries. Essentially then, all of the assets in the plan are already dedicated to cover the liabilities for the currently retired participants. Additionally, pension disbursements on an annual basis total approximately \$6.2 million and investment earnings are currently insufficient to provide for these payments on an ongoing basis and generally have been for the past few years.

**VALUATION OBJECTIVES
(Continued)**

Municipal contributions and contributions by active firefighters are being used to pay current expenses. These funds are generally the major source of new funds for investment purposes to accumulate reserves. Even with improved investment returns, the maturing of the employee group requires that the fund be carefully monitored during the next few years to assure that an orderly funding progress is maintained. If investment income remains insufficient to pay the existing pensioners, then City and participant contributions will continue to be used. The Trustees should be advised that this is a potentially dangerous situation regarding the fund. **Nonetheless, the fund currently is modestly growing and is clearly on a path to recovery.**

As indicated earlier, the average age and service of the active participating group is at the State average, and at this time; however, the pension rolls are growing dramatically (approximately 8%-10% per year), and liabilities continue to increase. We will monitor closely the retirement patterns which emerge in later years to assure that the appropriate retirement rates are in place for our analysis.

Financial considerations

In these uncertain times, the fund continues to experience very limited short-term investment growth as can be noted in the charts in Section 5B and 5C of this valuation. Nonetheless, the fund continues to maintain adequate funded ratios. The fund has earned marginal rates of return over the short term. As shown in Exhibit 5-C of our report, the composite rate of return for the fund since 2009 is 3.31%, but 11.42% if we eliminate the unfortunate 2009 fiscal year.

Selection of assumptions

For a variety of reasons, we find all the demographic assumptions used by the Department of Insurance and the prior actuary to be inappropriate for the Downstate system. As a result of the publication of a recent independent study analyzing demographic experience among police and fire pension funds in the Downstate System, we have chosen to change the retirement, disability and withdrawal assumptions.

Additionally, recent improvements in mortality dictate the use of a more modern mortality table than used by the prior actuary. We have chosen to use a blue collar modification of the recently published RP-2000 Mortality Table to properly reflect recent mortality improvements.

Comparative salary increases and the average rates of investment return over the past years indicate that the general financial assumptions used by the prior actuary are appropriate for this Fund.

Based mainly upon the comparative rate of funding (45%-47%), as well as a comparison of actual rates of investment return to salary increases, a 7.00% assumed investment return rate was deemed acceptable as a long-term assumption to be used in determining the funding requirements for the year March 1, 2011 to February 29, 2012. This rate was chosen to reflect the portfolio composition, investment philosophy and historical performance as compared to other funds in the State. This 7.00% rate includes an inflation component of 2½%.

**VALUATION OBJECTIVES
(Continued)**

As a result of a recent study performed by our firm, we are changing the actuarial assumption with regard to salary increases for active participants to a table which is more representative of increases in the Downstate system. The results of this study indicate that salaries increase more rapidly in the earlier years of employment and level off in the later years.

The prior actuary's assumption anticipated a constant annual increase in salaries and we believe that in our current environment and in analyzing the recent actual salary growth in your fund, which is reasonably flat, this approach is inappropriate. Consistent with the investment assumption, these tabular rates include an inflation component of 2½%.

In an effort to further our generalized approach to provide a smooth contribution pattern of funding, in our calculations of the statutory minimum contribution we have selected a 4% static payroll growth assumption rather than a dynamic assumption based upon actual experience each year. This methodology will produce a more stable and manageable contribution throughout the life of the program.

Finally, a change in the method of valuing assets, which will be mandated by State Law as of March 30, 2011, was early implemented beginning with this valuation to properly account for the market value fluctuations which may occur in a managed portfolio. Retroactively starting with assets as of February 1, 2011, we have chosen to use the mandated actuarial smoothing methodology to record only a portion of the portfolio's performance each year. A complete description of this method is contained in Appendix 2.

Comparison with Other Funds

We are including a comparison to certain State averages which may prove helpful in assessing how the fund compares to similarly situated programs.

	<u>Evanston(2011)</u>		<u>State*</u>
	<u>EANC</u>	<u>PUC</u>	
Funded Ratio	45.55%	47.06%	55.07%
Percentage of Liability for Inactives	67.31%	69.54%	52.94%
Percentage of Total Assets for Inactives (market basis)	147.37%		96.13%

* Based upon published reports for FYE 2008

RESULTS OF VALUATION

Thirty-year Projection of Liabilities

The final section of our report illustrates projected payments from the Trust Fund for a 30-year period commencing with the valuation date. These projections are based upon the actuarial assumptions selected for the fund concerning death, disability and retirement actually occurring. Care should be taken in interpreting or relying on these results-- particularly for Funds with fewer than 200 participants. The credibility of this type of projection is rarely realized beyond 10 years. Exhibit 5D presents this projection.

The following exhibits present the results of our actuarial valuation of the **City of Evanston Firefighters' Pension Plan** for the fiscal year March 1, 2011 through February 29, 2012.

Exhibit 1 indicates that the recommended minimum contribution, calculated using the Entry Age Normal Cost method (EANC), from the City is \$6,401,393 or 71.64% total participating payroll. **Under the Entry Age Normal actuarial cost method selected, this percentage of payroll should remain reasonably level over the lifetime of the plan.**

Exhibit 1 also indicates that the statutory minimum contribution, calculated using the Projected Unit Credit method (PUC), from the City is \$4,596,235 or 51.44% of total participating payroll. **Under the Projected Unit Credit actuarial cost method selected, this percentage of payroll should increase over the lifetime of the plan.**

Exhibits 2 and 3 provide specific information used to develop the recommended minimum and statutorily required City contribution.

Exhibit 4 presents a brief description of the demographic characteristics of the current member group.

Exhibit 5 shows information relating to the pension assets.

Appendix 1 provides information in accordance with the Governmental Accounting Standards Board relating to financial disclosure of pension costs in the auditor's report.

**GENERAL VALUATION RESULTS FOR FISCAL YEAR
MARCH 1, 2011 THROUGH FEBRUARY 29, 2012**

Recommended Minimum Contribution

1.	Entry Age Normal Cost:	\$ 2,302,783
2.	Unfunded Actuarial Accrued Liability (or Surplus):	64,796,881
3.	Actuarial Value of Assets:	54,214,525
4.	Annual Salaries of Active Firefighters:	8,591,585
5.	Recommended Minimum Contribution from the City:	6,401,393
	Contribution Percentage:	71.64%*

Statutory Minimum Contribution

1.	Projected Unit Credit Normal Cost:	\$ 2,344,050
2.	Unfunded Actuarial Accrued Liability (or Surplus):	60,989,490
3.	Actuarial Value of Assets:	54,214,525
4.	Annual Salaries of Active Firefighters:	8,591,585
5.	Statutory Minimum Contribution from the City:	4,596,235
	Contribution Percentage:	51.44%*

* Projected for the full fiscal year ending February 29, 2012.

SUMMARY OF SPECIFIC VALUATION RESULTS

	<u>Number</u>	<u>Actuarial Present Value of Projected Benefits</u>	<u>Entry Age Normal Cost</u>	<u>Projected Unit Credit Normal Cost</u>
1. Active Firefighters:	104			
Retirement Pension:		\$47,958,337	\$1,517,074	\$1,621,395
Survivors Pension:		2,232,001	118,647	111,198
Disability Pension:		12,248,710	620,677	578,472
Withdrawal Pension:		515,261	46,385	32,985
		<hr/>	<hr/>	<hr/>
TOTAL	104	\$62,954,309	\$2,302,783	\$2,344,050
2. Inactive Firefighters and Survivors:				
Normal Retirees:	84	\$55,936,067		
Alternate Payees:	4	1,018,248		
Widows (Survivors):	29	8,110,389		
Children (Survivors):	0	0		
Disabled Retirees:	21	15,042,361		
Deferred Vested:	0	0		
Terminated/Separated:	<u>1</u>	<u>65</u>		
TOTAL	139	\$80,107,130		

**SUMMARY OF SPECIFIC VALUATION RESULTS
(Continued)**

	<u>Entry Age Normal (EAN)</u>	<u>Projected Unit Credit (PUC)</u>
3. Total Actuarial Present Value of Projected Benefits:	\$143,061,439	N/A
4. Actuarial Present Value of Future Normal Costs:	24,050,033	N/A
5. Actuarial Accrued Liability: [(3) - (4)]	119,011,406	115,204,015
6. Actuarial Value of Assets:	54,214,525	54,214,525
7. Unfunded Actuarial Accrued Liability (or Surplus): [(5) - (6)]	64,796,881	60,989,490
8. Funded Ratio Percentage: [(6) ÷ (5)] x 100	45.55%	47.06%

HISTORY OF FUNDED PERCENTAGES

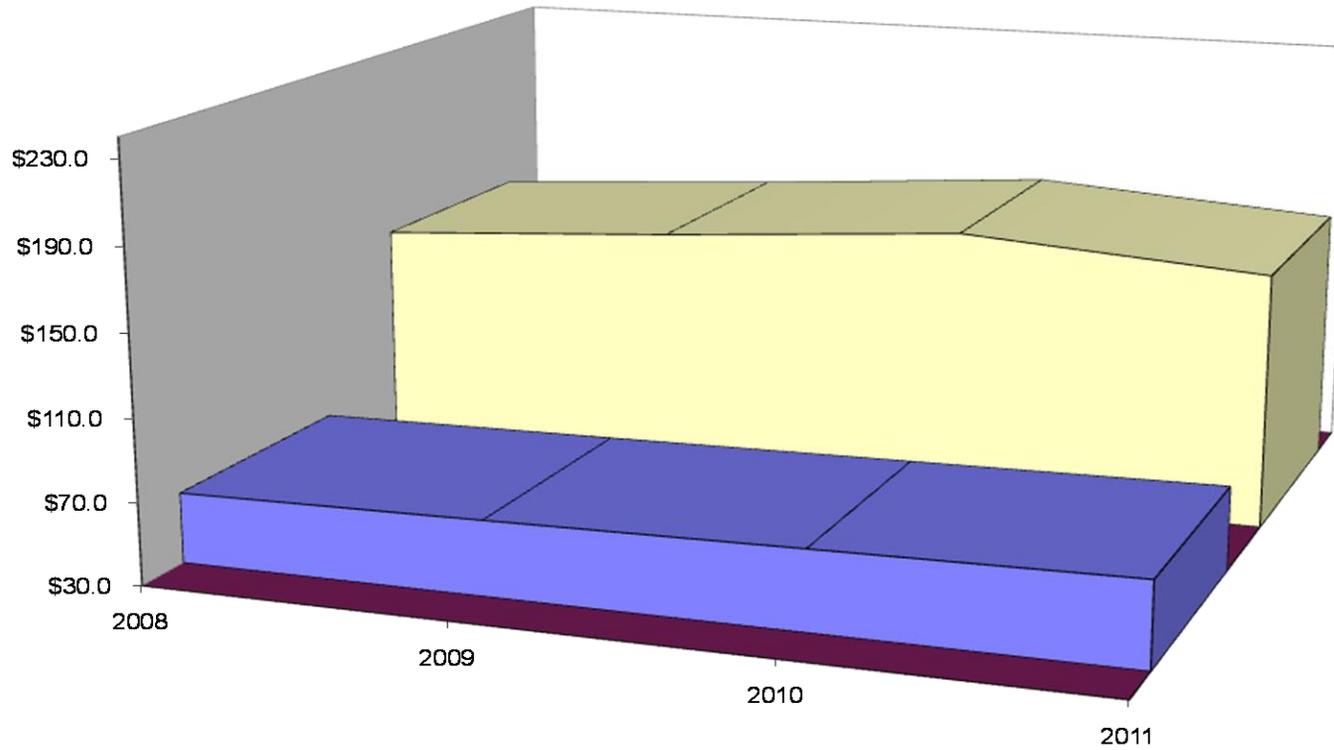
<u>For the Year beginning March 1</u>	<u>Valuation Assets</u>	<u>EAN Accrued Liabilities</u>	<u>EAN Funded Percentage</u>	<u>PUC Accrued Liabilities</u>	<u>PUC Funded Percentage</u>
2011	\$54,214,525	\$119,011,406	45.55%	\$115,204,015	47.06%
2010	52,021,778 ¹	129,493,139	40.17	N/A	N/A
2009	49,410,755	119,852,896	41.23	N/A	N/A
2008	47,006,917	111,696,236	42.09	N/A	N/A

The chart on the following page presents a progression of these percentages in graphical form.

¹ Values prior to March 1, 2011 were taken for the actuarial valuation report as of March 1, 2010 as performed by Gabriel Roeder Smith & Company

COMPARISON OF ASSETS AND LIABILITIES
(amount in millions)

■ Valuation Assets □ Accrued Liabilities



DEVELOPMENT OF RECOMMENDED MINIMUM CITY CONTRIBUTION

	Fiscal Year March 1, 2011 through <u>February 29, 2012</u>
1. Entry Age Normal Cost:	\$2,302,783
Interest to February 29, 2012:	<u>161,195</u>
(a) Total	\$2,463,978
(b) 17½% of Projected Payroll	1,503,527
(c) Minimum Cost Payable, greater of (a) and (b):	\$2,463,978
2. Recommended Minimum Payment to Amortize 90 % of the Entry Age Normal Unfunded Accrued Liability <u>as a level dollar amount</u> over 29.00205 Years from March 1, 2011 with interest to February 29, 2012 :	4,749,749
3. Credit for Surplus:	0
4. Total Recommended Minimum Contribution for Fiscal Year February 29, 2012: [(1) + (2) + (3)]	7,213,727
5. Active Member Contributions (9.455% of Salaries):	812,334
6. Net Recommended Minimum City Contribution: [(4) - (5)]	6,401,393

DEVELOPMENT OF STATUTORILY REQUIRED CITY CONTRIBUTION
(NOTE THAT THIS CONTRIBUTION CALCULATION IS NOT RECOMMENDED)

	Fiscal Year March 1, 2011 through <u>February 29, 2012</u>
1. Projected Unit Credit Normal Cost:	\$2,344,050
Interest to February 29, 2012:	<u>164,084</u>
(a) Total	\$2,508,134
(b) 17½% of Projected Payroll	1,503,527
(c) Minimum Cost Payable, greater of (a) and (b):	\$2,508,134
2. Minimum Payment to Amortize 90% of the Projected Unit Credit Unfunded Accrued Liability <u>as a level percentage of payroll</u> over 29.00205 Years from March 1, 2011 with interest to February 29, 2012:	2,900,435
3. Credit for Surplus:	0
4. Total Statutorily Required Contribution for Fiscal Year February 29, 2012: [(1) + (2) + (3)]	5,408,569
5. Active Member Contributions (9.455% of Salaries):	812,334
6. Statutorily Required City Contribution: [(4) - (5)]	4,596,235

SUMMARY OF DEMOGRAPHIC INFORMATION AS OF MARCH 1, 2011

	<u>Number</u>	<u>Projected Annual Salaries (Fiscal Year 2012)</u>
Active Firefighters:	104	\$8,591,585

	<u>Number</u>	<u>Total Monthly Benefits</u>
Normal Retirees:	84	\$377,954
Alternate Payees:	4	6,140
Survivors (Widows):	29	85,244
Survivors (Children):	0	0
Disabled Retirees:	21	80,215
Deferred Vested:	0	0
Terminated/Separated:	1	65 *

* Return of Contributions

The actuarial valuation was performed as of March 1, 2011 to determine contribution requirements for plan year 2012.

AGE AND SERVICE DISTRIBUTION

Attained Age	COMPLETED YEARS OF SERVICE										Total	Average Salaries
	0-1	2-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+		
15-19											0	-
20-24											0	-
25-29	2	17									19	68,804
30-34	1	7	6								14	76,517
35-39	1	4	9	4							18	78,158
40-44		1	6	8	2						17	83,312
45-49		1			4	6	1				12	97,084
50-54				1	1	5	3	1			11	95,728
55-59				1	1	2	3	2	1		10	87,444
60-64						1		1	1		3	99,146
65+											0	-
TOTAL	4	30	21	14	8	14	7	4	2	0	104	\$82,611

Age = 40.70 Years

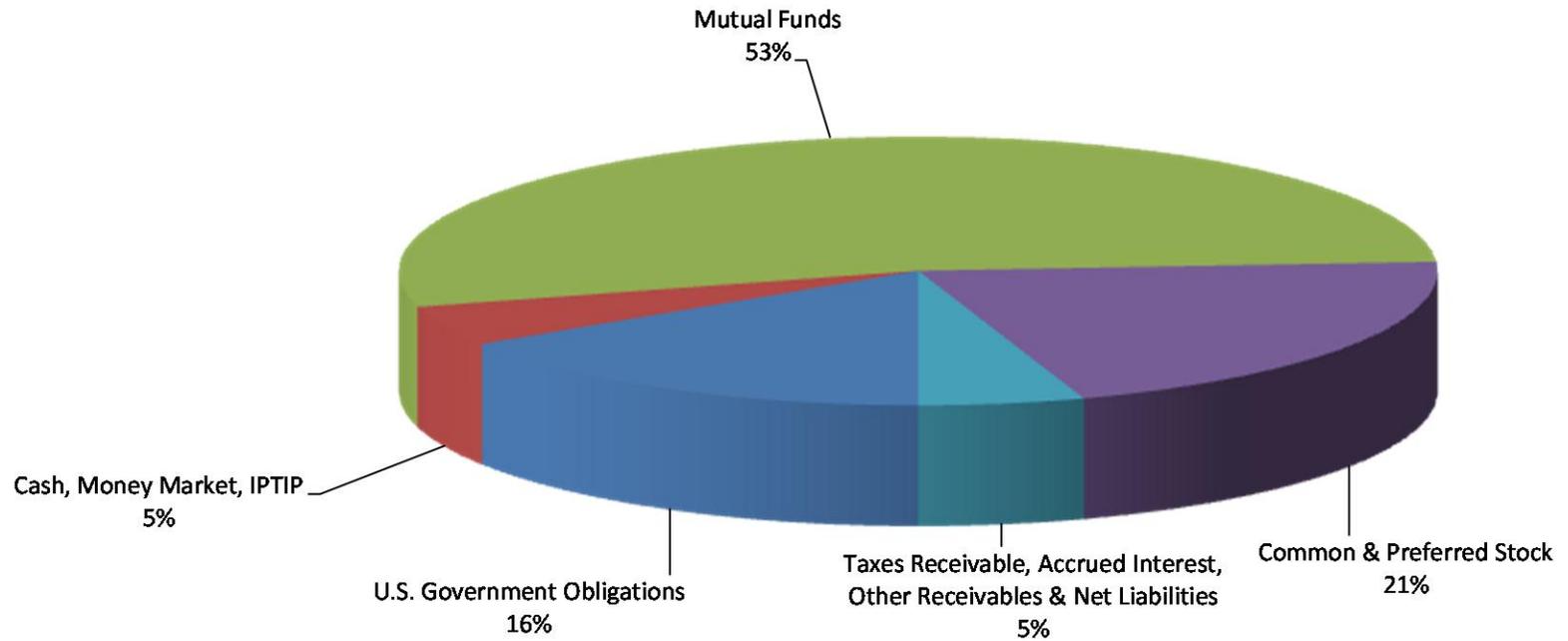
Service = 12.70 Years

ASSET INFORMATION

Cash, Money Market, IPTIP	\$2,623,744
Certificates of Deposit	0
State and Local Obligations	0
U.S. Government Obligations	8,609,568
Insurance Company Contracts	0
Pooled Investment Accounts	0
Mutual Funds	28,957,856
Common & Preferred Stock	11,366,756
Taxes Receivable	2,682,705
Accrued Interest	44,993
Other Receivables	75,253
Net Liabilities	2,052
	<hr/>
Net Present Assets at Market Value	\$54,358,823

The chart on the following page shows a percentage of invested assets.

ASSET INFORMATION



DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

1.	Market Value of Assets, March 1, 2010.*			\$49,840,355
2.	Actual Income and Disbursements in prior year weighted for timing			
		Amount	Weight for Timing	Weighted Amount
	<u>Contributions Received During 2010-2011</u>	6,724,252	50.00%	3,362,126
	Miscellaneous Revenue	0	50.00%	0
	Benefit Payments and Expenses Made During 2010-2011	6,487,887	(50.00)%	<u>(3,243,944)</u>
	Total			118,183
3.	Market Value of assets adjusted for actual income disbursements [(1) + 2(d)]*			\$49,958,538
4.	Assumed rate of return on plan assets for the year			7.00%
5.	Expected return on assets [(3) x (4)]			\$3,497,098
6.	Market Value of Assets, March 1, 2010*			\$49,840,355
7.	Income (less investment income) for prior year			6,724,252
8.	Disbursements paid in prior year			6,487,887
9.	Market Value of Assets, March 1, 2011*			\$54,358,823
10.	Actual Return [(9) + (8) – (7) – (6)]			4,282,103
11.	Investment Gain/(Loss) for Prior Year [(10) – (5)]			\$ 785,005

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
(Continued)**

12. Market Value of Assets, March 1, 2011:*				\$54,358,823
13. Deferred investment gains and (losses) for last 4 years:				
	Plan Year Beginning	Gain/(Loss)	Percent Deferred	Deferred Amount
a)	2,010**	\$ 785,005	80%	\$ 628,004
b)	2,009	\$3,282,070	50%	\$1,641,035
c)	2,008	\$ (8,498,965)	25%	\$ (2,124,741)
d)	Total	\$ (4,431,890)		\$ 144,298
14. Actuarial value of plan assets for funding March 1, 2011 :				\$54,214,525
15. Taxes receivable:				2,682,705
16. Actuarial value of plan assets for GASB reporting, March 1, 2011: Item (12) less item 13(e)*				\$51,531,820

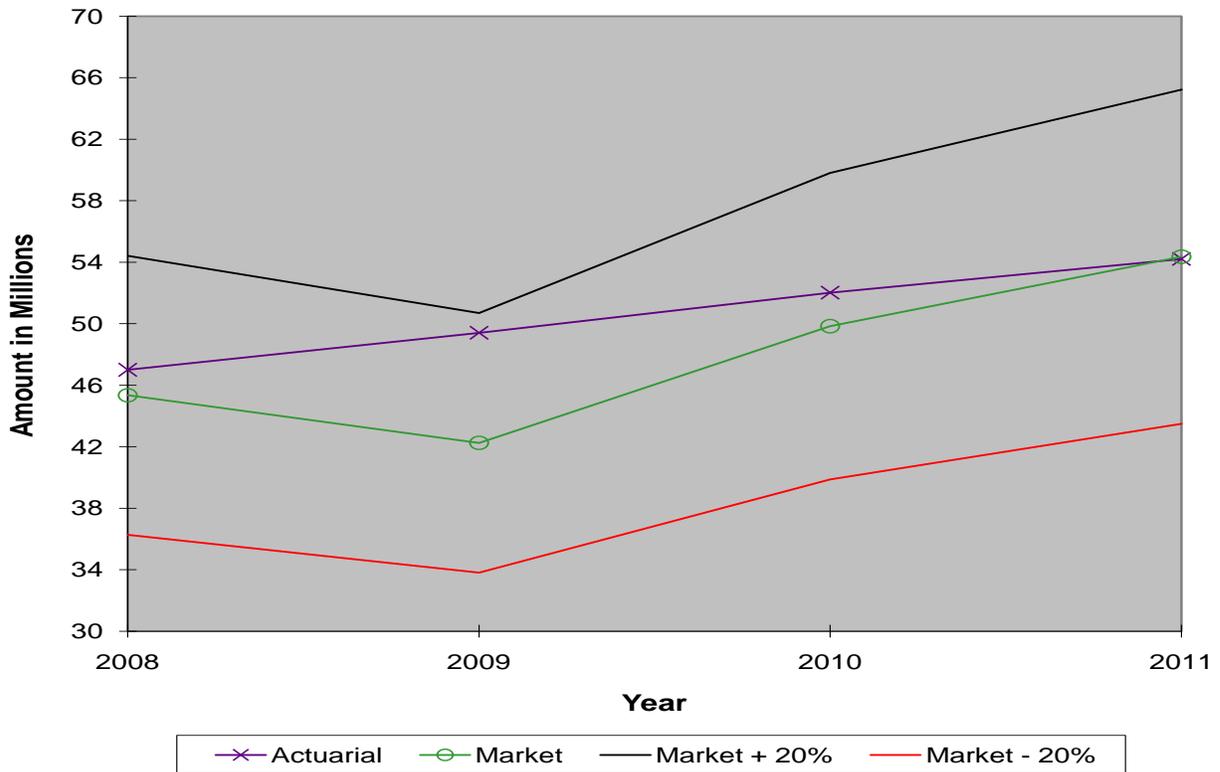
Notes: * excluding taxes receivable

* ** *The calculated value is determined by adjusting the market value of assets to reflect investment gains and losses (the difference between the actual investment return and the expected investment return) during years prior to 2010 at 25% per year and during years following 2009 at 20% per year.

ASSET HISTORY

<u>For the Year beginning March 1</u>	<u>Actuarial Value of Assets</u>	<u>Market Value of Assets</u>
2011	\$54,214,525	\$54,358,823
2010 ²	52,021,778	49,840,355
2009	49,410,755	42,249,545
2008	47,006,917	45,343,765

The chart below presents a comparison between the Actuarial Value of Assets and the Market Value of Assets for the current year and the five preceding years. The chart also illustrates the corridor 20% above and 20% below the Market Value of Assets.

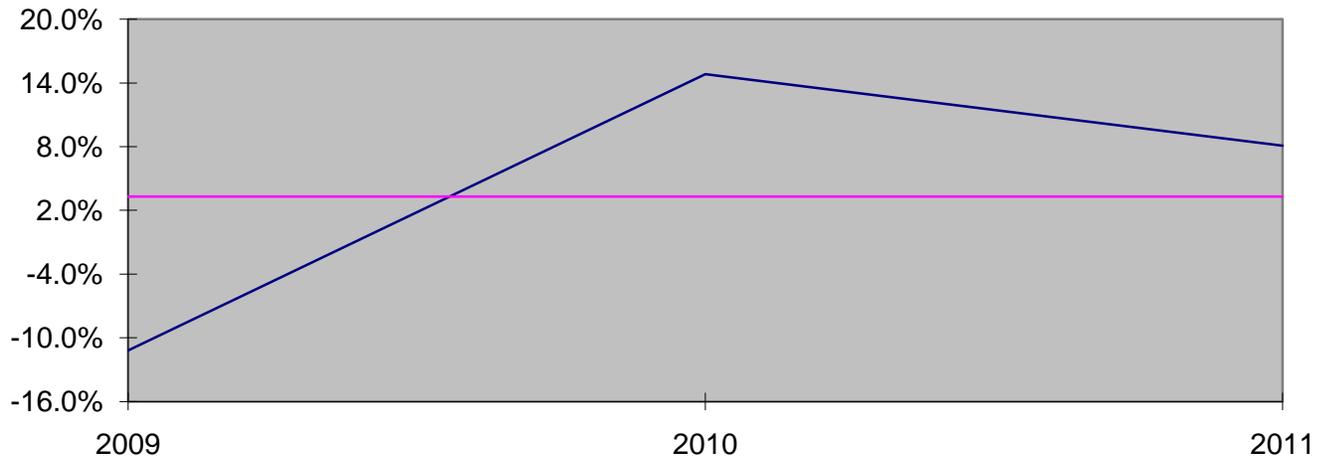


² Values prior to March 1, 2011 were taken for the actuarial valuation report as of March 1, 2010 as performed by Gabriel Roeder Smith & Company

ANALYSIS OF INVESTMENT RETURN

<u>Fiscal Year Ending April 30</u>	<u>Annual Rate of Return</u>
2011	8.10%
2010	14.83
2009	-11.18
 <u>Composite</u>	
2009-2011	3.31%

The following chart presents a progression of these percentages in graphical form.



THIRTY - YEAR PROJECTION OF PAYMENTS

Year	-----Payouts from Active Group Upon-----				-----Payouts from-----		Total	
	-----Termination-----		Death	Retirement	Disability	Retired Group		Deferred Pensioners
	Lump Sum	Deferred Pension						
2011	16,358	0	23,108	561,599	23,023	6,594,645	65	7,218,798
2012	20,199	0	31,091	999,011	42,184	6,485,349	0	7,577,834
2013	12,841	0	31,045	1,256,758	57,551	6,364,388	0	7,722,583
2014	10,985	0	39,211	1,531,294	72,341	6,276,220	0	7,930,051
2015	3,714	0	49,764	1,826,612	85,981	6,169,621	0	8,135,692
2016	2,865	0	58,067	2,059,068	99,577	6,066,518	0	8,286,095
2017	1,531	0	66,390	2,257,146	112,706	5,947,886	0	8,385,659
2018	0	0	75,639	2,493,844	125,439	5,826,614	0	8,521,536
2019	0	0	83,653	2,710,598	138,118	5,714,506	0	8,646,875
2020	0	0	94,242	2,944,785	151,174	5,594,756	0	8,784,957
2021	0	0	102,594	3,126,202	164,119	5,463,798	0	8,856,713
2022	0	0	113,310	3,435,631	177,870	5,328,276	0	9,055,087
2023	0	0	122,459	3,798,665	191,091	5,200,433	0	9,312,648
2024	0	0	132,167	4,112,048	204,218	5,054,077	0	9,502,510
2025	0	0	142,401	4,550,339	216,277	4,901,264	0	9,810,281
2026	0	0	151,585	4,946,600	226,210	4,741,508	0	10,065,903
2027	0	0	161,953	5,328,065	235,780	4,574,207	0	10,300,005
2028	0	0	170,134	5,725,045	244,837	4,398,918	0	10,538,934
2029	0	0	179,648	6,144,575	253,383	4,215,366	0	10,792,972
2030	0	0	186,725	6,551,895	259,911	4,023,493	0	11,022,024
2031	0	0	195,365	6,965,451	265,911	3,823,616	0	11,250,343
2032	0	0	200,516	7,389,114	270,612	3,616,446	0	11,476,688
2033	0	0	208,149	7,793,833	274,116	3,403,436	0	11,679,534
2034	0	0	211,272	8,304,350	275,749	3,194,967	0	11,986,338
2035	0	0	217,730	8,676,774	276,420	2,984,470	0	12,155,394
2036	0	0	218,411	9,024,889	276,575	2,760,089	0	12,279,964
2037	0	0	223,336	9,329,330	274,760	2,535,342	0	12,362,768
2038	0	0	220,464	9,601,618	270,977	2,312,822	0	12,405,881
2039	0	0	222,905	9,843,048	266,506	2,094,038	0	12,426,497
2040	0	0	219,460	10,099,907	260,247	1,881,201	0	12,460,815

GASB STATEMENT NO. 25 DISCLOSURE INFORMATION

DEVELOPMENT OF THE ANNUAL REQUIRED CONTRIBUTION OF THE MUNICIPALITY

	Fiscal Year March 1, 2011 through <u>February 29, 2012³</u>
1. Entry Age Normal Cost	\$2,302,783
2. Actuarial Accrued Liability	119,011,406
3. Actuarial Value of Assets*	51,531,820
4. Unfunded Actuarial Accrued Liability	67,479,586
5. Payment to Amortize Unfunded Actuarial Accrued Liability Over 40 Years from the Effective Date of Application of GASB 25 (22 years remaining)	4,142,216
6. Total Annual Required Contribution for Fiscal Year February 29, 2012: [(1) + (5)]	6,444,999
7. Active Member Contributions (9.455% of Salaries):	812,334
8. Annual Required Contribution (ARC) payable at the beginning of the current fiscal year: [(6) - (7)]	5,632,665

*Excluding Contributions Receivable

³ Because of the change in the fiscal year end from February 28 to December 31, only \$4,693,888 (10/12ths of the ARC) will be expensed during the fiscal year March 1, 2011 to December 31, 2011.

**GASB STATEMENT NO. 25 DISCLOSURE INFORMATION
(Continued)**

NOTES:

- The Annual Required Contribution as of March 1, 2011 has been determined under the Governmental Accounting Standards Board Statement No. 25 and is required disclosure for the fiscal year ending December 31, 2011. The Entry Age Normal Cost and the Actuarial Accrued Liability were determined using the Entry Age Normal Cost Actuarial Cost Method.
- The Entry Age Normal Cost has been determined as a level percentage of projected payroll of the active members of the group. The amortization method for the Unfunded Actuarial Accrued Liability is determined as a level percentage of payroll amount over a closed Amortization Period as permitted in Governmental Accounting Standards Board Statement No. 25.
- All values were determined on the basis of the actuarial assumptions and methods as more fully described in Appendix 2 of this report.

ACTUARIAL ASSUMPTIONS
(Economic)

Investment Return

7.00% per annum, compounded annually (net of expenses).

Salary Increases

Representative values of assumed salary increases are as follows:

<u>Age</u>	<u>Increase %</u>
25	4.8611
30	2.9848
35	2.0341
40	1.5239
45	1.3083
50	1.1846
55	1.1220

An additional inflation allowance of 2.50% per year is added to the above.

Payroll Growth

It was assumed that payroll will grow 4.00% per year.

Actuarial Asset Basis

The Pension Fund previously used an actuarial value of assets for both government accounting and funding purposes which recognized future gains and losses based on a 4-year smoothed market method. Starting with the actuarial valuation as of January 1, 2011, the actuarial value of assets recognizes future gains and losses based on a 5-year smoothed market method.

In a 5-year smoothed market method, the current market value of assets is reduced (increased) for the current year and each of three succeeding years, by a portion of the gain/(loss) in market value during the prior year. Such gain/(loss) is determined as the excess/(deficit) of the current market value of assets over the market value of assets as of the prior year, increased to reflect interest at the actuarial rate and adjusted to reflect contributions and benefit payments during the prior year. The portion of such gain/(loss) by which the current market value of assets is reduced (increased) shall be 80% in the current year, 60% in the first succeeding year, 40% in the second succeeding year and 20% in the third succeeding year.

Additionally, in accordance with government accounting standards, the actuarial value of assets is adjusted to remove any contributions receivable on the reporting date.

**ACTUARIAL ASSUMPTIONS
 (Demographic)**

Mortality

Active Lives

RP-2000 Combined Healthy Mortality Table (male) with blue collar adjustment and with a 200% load for participants under age 50 and 125% for participants age 50 and over. Five percent (5%) of deaths amongst active firefighters are assumed to be in the performance of their duty.

Non-Active Lives

RP-2000 Combined Healthy Mortality Table (male) with blue collar adjustment and with a 200% load for participants under age 50 and 125% for participants age 50 and over.

Termination

Illustrative rates of withdrawal from the plan for reasons other than death or disability are as follows:

<u>Age</u>	<u>Rate of Withdrawal</u>
20	.0397
25	.0250
30	.0146
35	.0079
40	.0042
45	.0029
50	---

It is assumed that terminated firefighters will not be rehired.

Disability Rates

Incidence of disability amongst firefighters eligible for disability benefits:

<u>Age</u>	<u>Rate</u>
25	.0009
30	.0025
35	.0046
40	.0065
45	.0097
50	.0166
55	.0314

15% of disabilities amongst active firefighters are assumed to be in the performance of their duty.

**ACTUARIAL ASSUMPTIONS
 (Demographic)**

Retirement Rates

Retirements are assumed to occur between the ages of 50 and 69 in accordance with the following table:

<u>Age</u>	<u>Rate of Retirement</u>	<u>Age</u>	<u>Rate of Retirement</u>
50	.19	60	.28
51	.12	61	.36
52	.04	62	.44
53	.06	63	.52
54	.09	64	.60
55	.12	65	.68
56	.15	66	.76
57	.19	67	.84
58	.22	68	.92
59	.25	69	1.00

Marital Status

85% of firefighters are assumed to be married.

Spouse's Age

Wives are assumed to be 3 years younger than their husbands.

**ACTUARIAL ASSUMPTIONS
 (Additional)**

Expenses

None assumed.

Actuarial Cost Method

Projected Unit Credit for statutory minimum
 Entry Age Normal for recommended and GASB reporting

SUMMARY OF PRINCIPAL PLAN PROVISIONS

Definitions

Tier 1 – For Firefighters first entering Article 4 prior to January 1, 2011

Tier 2 – For Firefighters first entering Article 4 after December 31, 2010

Firefighter (4-106): Any person employed in the municipality's fire service as a firefighter, fire engineer, marine engineer, fire pilot, bomb technician or scuba diver.

Creditable Service (4-108): Time served by a firefighter, excluding furloughs and leaves of absence in excess of 30 days, but including leaves of absence for illness or accident and periods of disability where no disability pension payments are received and also including up to 3 years during which disability payments have been received provided contributions are made.

Creditable Service from other specified agencies is also included. Combined service credit option is available on a voluntary basis.

Pension (4-109)

Normal Pension Age

Tier 1 - Age 50 with 20 or more years of creditable service.

Tier 2 - Age 55 with 10 or more years of creditable service.

Normal Pension Amount

Tier 1 - 50% of the greater of the annual salary held in the year preceding retirement or the annual salary held on the last day of service, plus 2½% of such annual salary for service from 20 to 30 year (maximum 25%).

Tier 2 - 2½% of Final Average salary for each year of service. Final Average Salary is the highest salary based on the highest consecutive 96 months of the final 120 months of service

Early Retirement at age 50 with 10 or more years of service but with a penalty of ½% for each month prior to age 55.

Annual Salary capped at \$106,800 increased yearly by the lesser of ½ of the Consumer Price Index- Urban (CPI-U) or 3%.

Minimum Monthly Benefit: \$1,000

**SUMMARY OF PRINCIPAL PLAN PROVISIONS
(Continued)**

Maximum Benefit Percentage: 75% of salary

Minimum Monthly Benefit: Annual step rate increases from \$1,030.00 to \$1,159.27.

Maximum Benefit Percentage: 75% of salary except line of duty.

Termination Pension Amount

Any firefighter who retires or is separated from service with at least 10, but less than 20 years of credited service, shall be entitled to a monthly pension commencing at age 60 equal to the monthly rate of compensation based on rank at separation multiplied by the applicable percentage below:

<u>Years of Credited Service</u>	<u>Applicable Percentage</u>
10	15.0 %
11	17.6
12	20.4
13	23.4
14	26.6
15	30.0
16	33.6
17	37.4
18	41.4
19	45.6

Pension Increase

Non-Disabled

Tier 1 - 3% increase of the original pension amount after attainment of age 55 for each year elapsed since retirement, followed by an additional 3% of the original pension amount on each January thereafter. Effective July 1, 1993, 3% of the amount of pension payable at the time of the increase including increases previously granted, rather than 3% of the originally granted pension amount.

Tier 2 - The lesser of ½ of the Consumer Price Index- Urban (CPI-U) or 3% increase of the original pension amount after attainment of age 60, followed by an additional 3% of the original pension amount on each January 1 thereafter.

For firefighters who retire after January 1, 1986, 3% increase of the original pension amount after attainment of age 55 for each year elapsed since retirement, followed by an additional 3% in each January thereafter.

**SUMMARY OF PRINCIPAL PLAN PROVISIONS
(Continued)**

For firefighters who retire prior to January 1, 1986, but after July 1, 1971, the 3% increase commences at age 60, and for firefighters who retire before July 1, 1971, the 3% increase commences at age 65.

Disabled

3% increase of the original pension amount after attainment of age 60, followed by an additional 3% of the original pension amount in each January thereafter.

Pension to Survivors (4-114)

Eligibility

Death of a firefighter:

- (1) on active duty as a result of any illness or accident;
- (2) on disability retirement;
- (3) on retirement with 20 years of service;
- (4) as a terminated member who has rights to a benefit at age 60; and
- (5) as a deferred pensioner.

Death Benefit

Tier 1 - 54% of annual salary based on attained rank at date of separation of service to surviving spouse, plus 12% of such salary to dependent children under 18.

100% of annual salary if death occurs in the line of duty.

Depending upon the survival of the spouse, dependent children benefits may increase to a level of 20% of firefighter's salary.

Greater of 100% of monthly retirement benefit or 54% of annual salary if completed 20 years of service or on disability retirement.

Tier 2 – 66 2/3% of pension amount to surviving spouse (or dependent children), subject to the following increase: the lesser of ½ of the Consumer Price Index- Urban (CPI-U) or 3% increase of the original pension amount after attainment of age 60, followed by an additional 3% of the original pension amount on each January 1 thereafter.

Minimum Monthly Survivor Pension

Annual step rate increases from \$1,030.00 to \$1,159.27.

Maximum Survivor Pension

75% of such firefighter's salary.

SUMMARY OF PRINCIPAL PLAN PROVISIONS
(Continued)

Disability Pension - Line of Duty (4-110)

Eligibility

Suspension or retirement from fire service due to sickness, accident or injury while on duty.

Pension

Greater of 65% of salary attached to rank at date of suspension or retirement and the retirement pension available.

Minimum Monthly Benefit: Annual step rate increases from \$1,030.00 to \$1,159.27.

For each dependent child under 18, an additional \$20 per month increased annually is granted each disabled member. Maximum total benefit is 75% of salary.

Disability Pension - Not on Duty (4-111)

Eligibility

Suspension or retirement from fire service for any cause other than while on duty. Member must have at least 7 years of credited service.

Pension

50% of salary attached to rank at date of suspension or retirement.

Disability Pension - Occupational Disease (4-110.1)

Eligibility

Suspension or retirement from service after 5 years of service from causes of heart disease, cancer, tuberculosis or other lung disease.

Pension

Same pension as in line of duty.

SUMMARY OF PRINCIPAL PLAN PROVISIONS
(Continued)

Disability Pension Option A (4-113(a))

Eligibility

Member receiving a disabled pension who attains age 50 and whose years of creditable service and years of disablement total 20 years.

Pension Option

Eligible for pension increase upon conversion to retirement. Pension amount remains the same at date of conversion but subject to annual pension increases.

Disability Pension Option B (4-113(b))

Eligibility

Member receiving disability pension who attains age 50 and who had 20 years of creditable service at date of disablement.

Pension Option

Convert to normal pension based upon years of service at disablement and salary attached to rank on date of election.

Other Provisions

Refund (4-116)

At death with no survivors, contributions are returned to estate.

At termination with less than 20 years of service, contributions are refunded upon request.

Contributions by Firefighters (4.118.1)

9.455% of salary, including longevity, but excluding overtime pay, holiday pay, bonus pay, merit pay or other cash benefit. Additional 1% of salary if combined service credit option is selected.

GLOSSARY

Actuarial Accrued Liability

See *Entry Age Normal Cost Method* and *Projected Unit Credit Cost Method*.

Actuarial Assumptions

The economic and demographic predictions used to estimate the present value of the plan's future obligations. They include estimates of investment earnings, salary increases, mortality, withdrawal and other related items. The *Actuarial Assumptions* are used in connection with the *Actuarial Cost Method* to allocate plan costs over the working lifetimes of plan participants.

Actuarial Cost Method

The method used to allocate the projected obligations of the plan over the working lifetimes of the plan participants. Also referred to as an *Actuarial Funding Method*.

Actuarial Funding Method

See *Actuarial Cost Method*

Actuarial Gain (Loss)

The excess of the actual *Unfunded Actuarial Accrued Liability* over the expected *Unfunded Actuarial Accrued Liability* represents an *Actuarial Loss*. If the expected *Unfunded Actuarial Accrued Liability* is greater, an *Actuarial Gain* has occurred.

Actuarial Present Value

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of *Actuarial Assumptions*.

Actuarial Value of Assets

The asset value derived by using the plan's *Asset Valuation Method*.

Asset Valuation Method

A valuation method designed to smooth random fluctuations in asset values. The objective underlying the use of an asset valuation method is to provide for the long-term stability of employer contributions.

Employee Retirement Income Security Act of 1974 (ERISA)

The primary federal legislative act establishing funding, participation, vesting, benefit accrual, reporting, and disclosure standards for pension and welfare plans.

**GLOSSARY
(Continued)**

Entry Age Normal Cost Method

One of the standard actuarial funding methods in which the *Present Value of Projected Plan Benefits* of each individual included in the *Actuarial Valuation* is allocated on a level basis over the earnings of the individual between entry age and assumed exit age(s). 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 for at a valuation date by the *Actuarial Present Value* of future *Normal Costs* is called the *Actuarial Accrued Liability*.

Normal Cost

The portion of the *Present Value of Projected Plan Benefits* that is allocated to a particular plan year by the *Actuarial Cost Method*. See *Entry Age Normal Cost Method* for a description of the *Normal Cost* under the *Entry Age Normal Cost Method*. See *Projected Unit Credit Cost Method* for a description of the *Normal Cost* under the *Projected Unit Credit Cost Method*.

Present Value of Future Normal Costs

The present value of future normal costs determined based on the *Actuarial Cost Method* for the plan. Under the *Entry Age Normal Cost Method*, this amount is equal to the excess of the *Present Value of Projected Plan Benefits* over the sum of the *Actuarial Value of Assets* and *Unfunded Actuarial Accrued Liability*.

Present Value of Projected Plan Benefits

The present value of future plan benefits reflecting projected credited service and salaries. The present value is determined based on the plan's actuarial assumptions.

Projected Unit Credit Cost Method

One of the standard actuarial funding methods in which the *Present Value of Projected Plan Benefits* of each individual included in the *Actuarial Valuation* is allocated by a consistent formula to valuation years. The *Actuarial Present Value* allocated to a valuation year is called the *Normal Cost*. The *Actuarial Present Value* of benefits allocated to all periods prior to a valuation year is called the *Actuarial Accrued Liability*.

Statement No. 25 of the Governmental Accounting Standards Board (GASB No. 25)

The accounting statement that established the standards of financial accounting and reporting for the financial statements of defined benefit pension plans.

Unfunded Actuarial Accrued Liability

The excess of the *Actuarial Accrued Liability* over the *Actuarial Value of Assets*.

