



**Tepfer  
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November 11, 2009

Ms. Cindy Von Holten  
City of Sterling  
212 Third Avenue  
Sterling, IL 61081

RE: City of Sterling Firefighters' Pension Fund

Dear Cindy:

Enclosed are 2 copies of our actuarial valuation report for the **Sterling Firefighters' Pension Fund** for the fiscal year May 1, 2009 through April 30, 2010.

The results of our valuation indicate that the recommended minimum contribution from the City for the next tax year is **\$482,623** or **37.04%** of current payroll. This contribution coupled with the anticipated \$118,511 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. Under the State definition, the pension fund is 70.43% funded and is in a *very good* financial position.

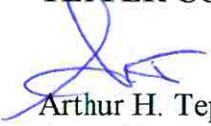
With the publication of Statement No. 25 of the Governmental Accounting Standards Board, we have revised our report to include the calculation of the unadjusted Annual Required Contribution. (ARC) We have chosen to calculate this contribution as a level dollar funded amortization of the unfunded liability over a closed 40 year period beginning with the date of adoption of GASB 25. This amount is \$467,826 or 35.91% of participating payroll.

We ask that you review the sections entitled "Actuarial experience since the last actuarial valuation" and "Factors Influencing the Choice of Actuarial Assumptions" beginning on page 3 for a complete explanation of what has occurred since the last actuarial valuation.

Current pending legislation under SB 2011 will extend the amortization period of any unfunded liabilities to July 1, 2049. It is our anticipation that this legislation will pass during the current fiscal year. Therefore, we have modified our calculations to conform with this new amortization schedule. The effect of this change in Statute is contained in Exhibit 3C of our report. Line 7 of that exhibit contains the required statutory minimum contribution prior to the anticipated change in the Statute.

Sincerely,

**TEPFER CONSULTING GROUP, LTD.**

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

AHT/lf

**CITY OF STERLING**  
**FIREFIGHTERS' PENSION FUND**

**ACTUARIAL VALUATION**  
**AS OF MAY 1, 2009 FOR THE**  
**FISCAL YEAR ENDING APRIL 30, 2010**

**November 11, 2009**

	<u>Page</u>
<b>SECTION I DISCUSSION</b>	
Valuation Objectives	1
Results of Valuation	9
<b>SECTION II SUPPORTING EXHIBITS</b>	
<b>Summary of Results</b>	
Exhibit 1    General Valuation Results	10
Exhibit 2    Summary of Specific Valuation Results	11
Exhibit 3-A  Development of Recommended Minimum City Contribution	14
Exhibit 3-B  Development of Statutorily required City Contribution	15
Exhibit 3-C  Reconciliation of the Change in the Statutorily Required Contribution	16
Exhibit 3-D  Derivation of Experience Gain or Loss	17
Exhibit 4-A  Summary Of Demographic Information	19
Exhibit 4-B  Age and Service Distribution	20
Exhibit 5-A  Asset Information	21
Exhibit 5-B  Development of Actuarial Value of Assets	23
Exhibit 5-C  Analysis of Investment Return	25
<b>APPENDIX 1    GASB NO. 25 DISCLOSURE INFORMATION</b>	<b>27</b>
<b>APPENDIX 2    STATEMENT OF ACTUARIAL ASSUMPTIONS</b>	<b>29</b>
<b>APPENDIX 3    SUMMARY OF PRINCIPAL PLAN PROVISIONS</b>	<b>32</b>
<b>APPENDIX 4    GLOSSARY</b>	<b>37</b>

**Tepfer Consulting Group, Ltd.** was retained by the **City of Sterling and City of Sterling 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 April 30, 2010 and indicates a **statutorily required contribution in accordance with 40 ILCS 5/4, Section 118 of \$461,771 or 35.44% of member payroll, a recommended minimum contribution of \$482,623 or 37.04% of payroll, and an Annual Required Contribution in accordance with paragraph 36f of Statement No. 25 of the Governmental Accounting Standards Board of \$467,826 or 35.91% of payroll.** These contributions are net of contributions made by active member firefighters during the fiscal year.

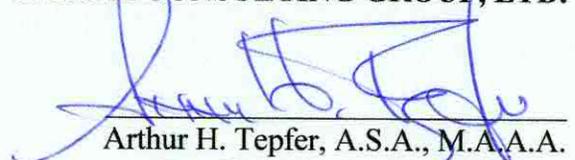
The results shown in this report have been calculated under the supervision of a qualified Actuary as defined in appropriate State statutes. All results are based upon demographic data submitted by the Firefighters' Pension Fund, financial data submitted by the Firefighters' Pension Fund, applications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

The undersigned certifies 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 #08-02352

November 11, 2009

## VALUATION OBJECTIVES

The **City of Sterling 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:

<b>ACTUAL COST EQUALS</b>	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)

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

In this method, the normal cost is determined by assuming each member 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 his assumed earnings each year. These normal costs accumulate to the present value of the employee's benefit at his retirement age.

Under the Entry Age Normal 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. Another feature of this method 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.

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

Comments on Recommended Minimum Contribution Level

Effective July 1, 1993, there were two changes to the State statute governing the determination of the required contribution to the Firefighters' Pension Fund. First, the *period* over which the amortization of any unfunded accrued liabilities is payable was extended 13 years from the year 2020 to the year 2033. Second, the method for determination of the *amount* of amortization payment was changed from a level dollar amount to an amount which will vary in dollars, but is expected to remain a level percentage of payroll. Effectively, these changes dramatically modify the funding pattern originally established and used since 1980 for plans covered under the statute. **On August 5, 1995, the Circuit Court of Cook County declared the changes in the State Statute to be unconstitutional.** On October 18, 1996, the Illinois Supreme Court reversed the Circuit Court decision and remanded the case back to the Court for a full hearing on the issues. The Circuit Court ultimately found the changes to be constitutionally acceptable.

VALUATION OBJECTIVES  
(Continued)

Despite the statutory language which may require an application of this liberalized approach, we feel that funding under the new method 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 any unfunded accrued liabilities as a level dollar amount over 40 years from July 1, 1993, the effective date of P.A. 87-1265. The calculation of the statutorily required contribution is based upon an amortization payment of any unfunded accrued liabilities as a level percentage of payroll over 40 years from July 1, 1993, the effective date of P.L. 87-1265.

Although, I sincerely do not agree with the method of determining the amortization of the unfunded accrued liability under the "new method" (I cannot and will not condone the calculation of the payment as a level percentage of payroll); nonetheless, I would be remiss if I did not advise my funds as to a "statutory" acceptable calculation under the State law. *I patently consider the calculation to be actuarially unsound for funding of 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.

Actuarial experience since the last actuarial valuation

As part of the actuarial valuation process, it is helpful to examine the actual experience of the fund as compared to the experience which is expected by the actuarial assumptions. The measurement of any deviations of actual to expected experience is commonly referred to as a "Gain and Loss Analysis". In performing this analysis, the actuary analyzes each actuarial assumption used in the valuation process. It is highly unlikely that actual experience will follow

**VALUATION OBJECTIVES  
(Continued)**

expected experience on a year-by-year basis. It is hoped that over the long term, if the actuarial assumptions are “reasonable”, the total gains and losses will offset each other.

A “gain and loss analysis’ is a useful tool to examine whether the actuarial assumptions used to determine the municipal tax levy are suitable. Care must be taken in placing too much credibility in a short-term analysis as the assumptions are more appropriately measured over the long term. Nonetheless, an annual evaluation of the actuarial assumptions will assist in identifying trends which, if unnoticed, can lead to inappropriate conclusions. When these trends are recognized, it is the actuary’s responsibility to modify one or more of the assumptions to better anticipate future experience.

Some assumptions are easier to measure than others. In small plans, credible analysis can generally be made regarding the economic (financial) assumptions. These primarily include investment and salary increase assumptions. Unfortunately, it is often impossible to establish credible long term analysis of demographic assumptions (rates of termination, disability, retirement and mortality). Therefore, in choosing demographic assumptions, the actuary generally relies upon standardized tabular assumptions modified only by fund-specific characteristics.

The actuarial gain and loss analysis for the current year is presented in Exhibit 3-C and 3-D of the report. Exhibit 3-C shows the impact of the actuarial gains or losses on the statutorily required contribution through a reconciliation of this contribution from the end of the prior valuation year to the end of the current valuation year. Exhibit 3-D derives the actuarial gain or loss in total as well as separating the individual financial and demographic components.

The overall experience gain (loss) for the year was \$(2,107,423) or (14.66%) of the accrued liability at the beginning of the plan year. The dollar amount for the plan’s current statutorily required contribution is 192.44% of the prior year’s contribution. When measured as a percentage of payroll, the contribution level has changed from 18.82% to 35.44%.

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 for the **City of Sterling 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 **City of Sterling Firefighters' Pension Plan** and a general understanding of the inter-relationships of the actuarial assumptions, the Board 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 "*Sterling-sensitive*", the analysis of the actual historical performance is carefully examined.

*Experience Analysis*

The results of our experience analysis indicate that most of the experience loss has been on the financial side (relating to investment return) but some has been on the demographic side.

*Demographic considerations*

For this valuation, it was noted that the force and the pension fund continues to remain stable as to its size and demographic composition. It was observed that the number of inactive participants as compared to active participants in the Fund is acceptable and similar to the State average (approximately 46% of the total participants are inactive as compared to 44% in the last valuation). Measured on a liability basis the Fund is also similar to the State averages. Approximately 55% of the Fund's total liability is attributed to inactive participants compared to a State average of about 51%. These measurements indicate a demographically stable fund which is at the average fund in the State. The average age and service of the active participating group however, is slightly above the State average

What is of concern however, is that there are currently 5 firefighters who are eligible to retire and another 5 firefighters who will become eligible in the next 5 years. This represents almost 45% of the current active group. Pension payments are now generally fixed and overall financial planning can be achieved. Absent a large growth in the active force, with proper funding, the fund's position should remain relatively stable for the foreseeable future.

As would be expected in this situation, a moderate portion of the assets available for investment (86%) has been committed to provide benefits for existing pensioners and beneficiaries. Essentially then, 86% of the assets in the plan are already dedicated to cover the liabilities for the currently

VALUATION OBJECTIVES  
(Continued)

retired participants. This is a very acceptable situation given the strong funding levels. As indicated earlier, the average age and service of the active participating group is less than the State average, but the pension rolls keep growing 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.

The demographic actuarial assumptions used for this valuation represent no change from those used in the prior valuation performed by our firm. These include, as a result of the publication of a recent independent study analyzing demographic experience among police and fire pension funds in the Downstate System, changes in the retirement, disability and withdrawal assumptions, as well as the use of a more modern mortality table from those used by the State Actuary.

Financial considerations

In these uncertain times, despite the drop in earnings, the fund continues to experience short-term investment growth as can be noted in the charts in Section 5B and 5C of this valuation. Furthermore, the fund continues to maintain strong funded ratios.

**However, during the 2009 fiscal year, investment income was less than the plan expenses. Essentially then, all of the investment income is being used to cover the expenses of the fund. Additionally, municipal contributions and contributions by active Firefighters are also being used to pay current expenses. These funds are generally the major source of new funds for investment purposes to accumulate reserves.** This is a warning sign that the fund is experiencing a change in growth patterns and will, therefore, not accumulate as rapidly as in prior years. Please refer to the chart in Exhibit 2 which illustrates the stability in growth. This remains a time for caution in overall investment philosophy.

The rate of return during the 2009 year was (13.85%) Despite this, the fund continues to generally earn acceptable 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 2000 is 3.90%. and the rate of return since 1988 is 6.60%. Comparative salary increases and the greater than average rates of investment return over the past years indicate that the general financial assumptions used by the State actuary continue to be inappropriate for this Fund.

**During the past fiscal year, there was a proper municipal contribution which has served the funding well.** The funding percentage decreased from 88.5% last year to 76.8% this year solely because of the poor investment return.

Like most other Police and Fire funds, the fund experienced an investment loss during the fiscal year ending April 30, 2009, but because of the use of the smoothing method for valuing plan assets, the effect on the contribution requirement was mitigated.

**VALUATION OBJECTIVES  
(Continued)**

Based upon the comparative rate of funding (approximately 77%) as well as a comparison of actual rates of investment return to salary increases, we have determined that a continuation of the assumed investment return rate of 8% was unacceptable as a long-term assumption to be used in determining the funding requirements for the year May 1, 2009 to April 30, 2010.

For this valuation, an interest rate of 7¾% was chosen to reflect the portfolio composition, investment philosophy and historical performance as compared to other funds in the State. This rate includes an inflation component of 2½%.

Furthermore, as a result of a recent study performed by our firm, we are continuing 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 assumption anticipated a constant annual increase in salaries and we believe that in our current environment and in analyzing the actual salary growth of the participants, this approach is inappropriate. Consistent with the investment assumption, these tabular rates include an inflation component of 2½%.

The financial assumptions, including the continued use of the actuarial value of assets instead of market value, and except for the investment return assumption noted above indicate no change from the prior year.

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>Sterling (2008)</u>	<u>State*</u>
Funded Ratio	<b>76.83%</b>	64.46%
Percentage of Liability for Inactives	<b>55.16%</b>	51.09%
Percentage of Total Assets for Inactives (market basis)	<b>86.15%</b>	79.26%

\*Based upon published reports for FYE 2006

Examination should be focused on the funding progress contained in Exhibit 2 of our report.

**VALUATION OBJECTIVES  
(Continued)**

Thirty-year Payout Projections

Exhibit 5D presents an illustration of 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 50 participants. The credibility of this type of projection is rarely realized beyond 10 years.

## RESULTS OF VALUATION

The following exhibits present the results of our actuarial valuation of the **City of Sterling Firefighters' Pension Plan** for the fiscal year May 1, 2009 through April 30, 2010.

Exhibit 1 indicates that the recommended minimum contribution from the City is \$482,623 or 37.04% of total participating payroll. Under the actuarial cost method selected, this percentage of payroll should remain reasonably level 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**  
**MAY 1, 2009 THROUGH APRIL 30, 2010**

1.	Entry Age Normal Cost:	\$291,714
2.	Unfunded Actuarial Accrued Liability (or Surplus):	3,331,038
3.	Actuarial Value of Assets:	11,047,973
4.	Annual Salaries of Active Firefighters:	1,253,422
5.	Recommended Minimum Contribution from the City:	482,623
	Contribution Percentage:	37.04%*

\* Projected for the fiscal year ending April 30, 2010.

SUMMARY OF SPECIFIC VALUATION RESULTS

	<u>Number</u>	<u>Actuarial Present Value of Projected Benefits</u>	<u>Entry Age Normal Cost</u>
1. Active Firefighters:	23		
Retirement Pension:		\$6,951,966	\$187,824
Survivors Pension:		261,195	15,453
Disability Pension:		1,479,654	83,150
Withdrawal Pension:		35,762	5,287
	<hr/>	<hr/>	<hr/>
TOTAL . . . . .	23	\$8,728,577	\$291,714
2. Inactive Firefighters and Survivors:			
Normal Retirees:	14	\$6,727,009	
Alternate Payees:	0	0	
Widows (Survivors):	3	253,952	
Children (Survivors):	0	0	
Disabled Retirees:	2	950,656	
Deferred Vested:	0	0	
Terminated/Separated:	<u>0</u>	<u>0</u>	
TOTAL . . . . .	19	\$7,931,617	

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

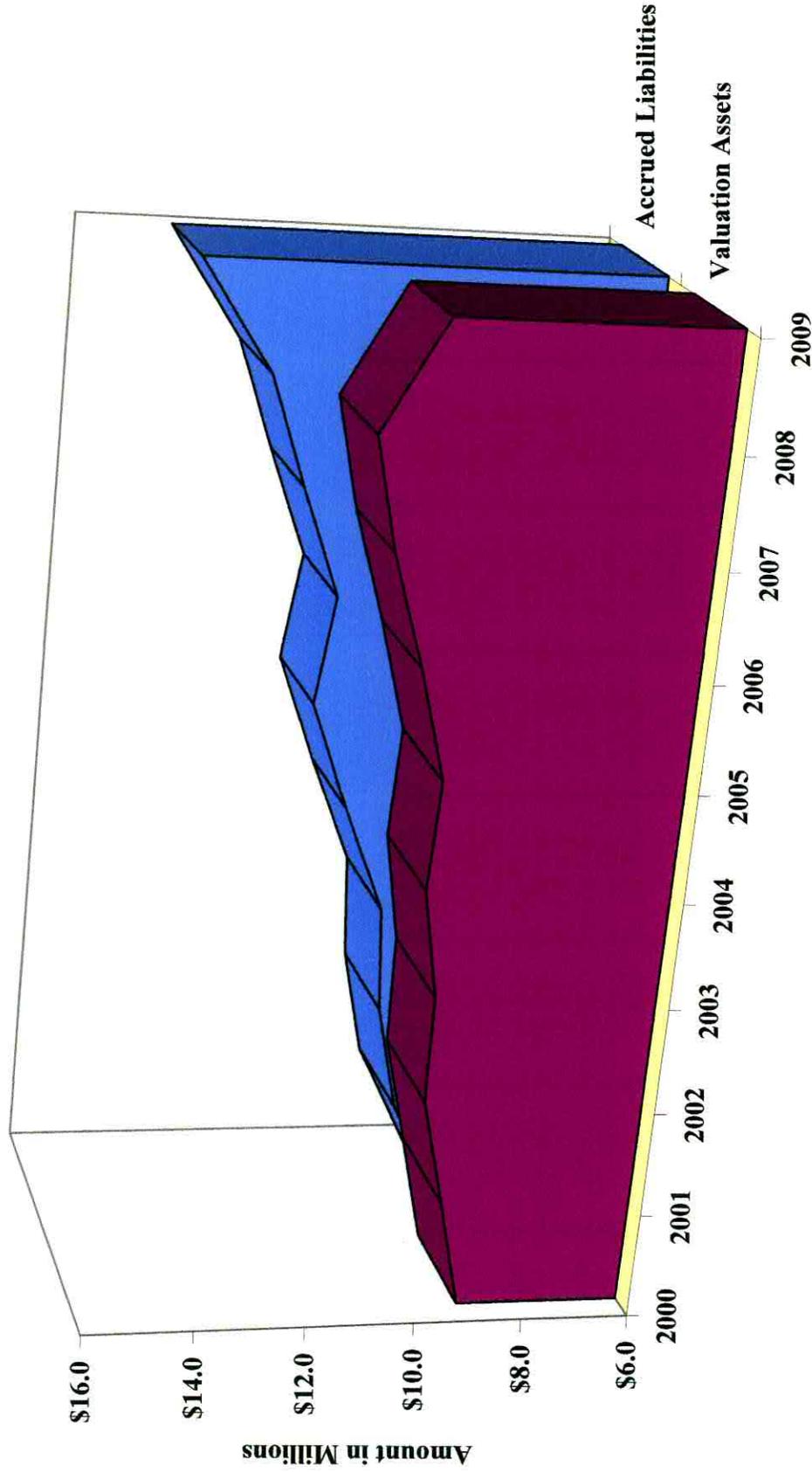
3.	Total Actuarial Present Value of Projected Benefits:	\$16,660,194
4.	Actuarial Present Value of Future Normal Costs:	2,281,183
5.	Entry Age Accrued Liability: [(3) - (4)]	14,379,011
6.	Actuarial Value of Assets:	11,047,973
7.	Unfunded Actuarial Accrued Liability (or Surplus): [(5) - (6)]	3,331,038
8.	Funded Ratio Percentage: [(6) ÷ (5)] x 100	76.83%

**HISTORY OF FUNDED PERCENTAGES**

<u>For the Year Beginning May 1</u>	<u>Valuation Assets</u>	<u>Accrued Liabilities</u>	<u>Funded Percentage</u>
2009	\$11,047,973	\$14,379,011	76.83%
2008	12,102,168	12,965,609	93.34%
2007	11,603,090	12,217,303	94.97%
2006	10,931,479	11,415,611	95.76%
2005	10,348,794	11,675,282	88.64%
2004	10,427,747	10,866,978	95.96%
2003	10,055,687	9,991,767	100.64%
2002	10,026,179	9,832,051	101.97%
2001	9,513,206	9,340,072	101.85%
2000	9,015,585	8,268,333	109.04%

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

### COMPARISON OF ASSETS AND LIABILITIES



**DEVELOPMENT OF RECOMMENDED MINIMUM CITY CONTRIBUTION**

	Fiscal Year May 1, 2009 through <u>April 30, 2010</u>
1. Entry Age Normal Cost:	\$291,714
Interest to April 30, 2010:	<u>22,608</u>
(a) Total	\$314,322
(b) 17½% of Projected Payroll	219,349
(c) Minimum Cost Payable, greater of (a) and (b):	\$314,322
2. Recommended Minimum Payment to Amortize Unfunded Accrued Liability <u>as a level dollar amount</u> over 24.16701 Years from May 1, 2009:	286,812
3. Credit for Surplus:	0
4. Total Recommended Minimum Contribution for Fiscal Year April 30, 2010: [(1) + (2) + (3)]	601,134
5. Active Member Contributions (9.455% of Salaries):	118,511
6. Net Recommended Minimum City Contribution: [(4) - (5)]	482,623

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

	Fiscal Year May 1, 2009 through <u>April 30, 2010</u>
1. Entry Age Normal Cost:	\$291,714
Interest to April 30, 2010:	<u>22,608</u>
(a) Total	\$314,322
(b) 17½% of Projected Payroll	219,349
(c) Minimum Cost Payable, greater of (a) and (b):	\$314,322
2. Minimum Payment to Amortize Unfunded Accrued Liability <u>as a level percentage of pay</u> over 24.16701 Years from May 1, 2009, with Interest to April 30, 2010:	265,960
3. Credit for Surplus:	0
4. Total Statutorily Required Contribution for Fiscal Year April 30, 2010: [(1) + (2) + (3)]	580,282
5. Active Member Contributions (9.455% of Salaries):	118,511
6. Statutorily Required City Contribution: [(4) - (5)]	461,771

**RECONCILIATION OF THE CHANGE  
IN THE STATUTORILY REQUIRED CITY CONTRIBUTION**

1.	Statutorily Required Contribution for Year ending April 30, 2009:	\$239,958
2.	Increase in Normal Cost and Amortization Payment due to anticipated pay changes:	9,567
3.	Increase/(Decrease) in Normal Cost resulting from actual pay changes:	( 2,674)
4.	Effect of Asset Smoothing:	136,285
5.	Increase/(Decrease) resulting from changes in assumptions:	29,867
6.	Increase/(Decrease) resulting from other demographic and financial sources (retirements, deaths, new entrants, salary changes, etc.):	48,768
7.	Statutorily required Contribution for Year ending April 30, 2010:	\$461,771

**DERIVATION OF EXPERIENCE GAIN(LOSS) AS OF MAY 1, 2009**

1.	Unfunded Actuarial Accrued Liability at May 1, 2008:	\$863,441
2.	Normal Cost Due at May 1, 2008:	267,153
3.	Interest on (1) and (2) to May 1, 2009 (at 8.00% per year):	90,448
4.	Contributions made for the prior year with interest to May 1, 2009:	371,497
5.	Expected Unfunded Actuarial Accrued Liability at May 1, 2009 Before Assumption Changes [(1) + (2) + (3) - (4)]:	849,545
6.	Change in Unfunded Actuarial Accrued Liability due to Assumptions Change at May 1, 2009:	374,070
7.	Expected Unfunded Actuarial Accrued Liability at May 1, 2009 [(5) + (6)]:	1,223,615
8.	Actual Unfunded Actuarial Accrued Liability at May 1, 2009:	4,251,702
9.	Gain (Loss) for the prior Plan Year [(7) - (8)]:	\$ (3,028,087)

**DERIVATION OF EXPERIENCE GAIN(LOSS) AS OF MAY 1, 2009**

The experience gain (loss) reported above is the net result of the following:

1. FINANCIAL SOURCES

a) Investment experience (based upon market value of assets):	\$ (2,296,851)
b) Contribution experience:	( 1,828)
c) Benefit Payments experience:	51,250
d) Salary increases (greater)/lower than expected:	<u>21,685</u>
Total from Financial Sources:	(2,225,744)

2. DEMOGRAPHIC SOURCES

Mortality, retirement, disability, termination, etc.:	(422,198)
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3. ACTUARIAL ADJUSTMENTS

Market value adjustment for asset smoothing, including expenses	(380,145)
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4. GAIN (LOSS) ALL SOURCES

Total Gain (Loss) for the prior Plan Year [(1) + (2) + (3)]	\$ (3,028,087)
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SUMMARY OF DEMOGRAPHIC INFORMATION AS OF MAY 1, 2009

	<u>Number</u>	<u>Projected Annual Salaries (Fiscal Year 2010)</u>
Active Firefighters:	23	\$1,253,422

	<u>Number</u>	<u>Total Monthly Benefits</u>
Normal Retirees:	14	\$ 45,963
Alternate Payees:	0	0
Survivors (Widows):	3	4,855
Survivors (Children):	0	0
Disabled Retirees:	2	5,529
Deferred Vested:	0	0
Terminated/Separated:	0	0 *

\* Return of Contributions

The actuarial valuation was performed as of May 1, 2009 to determine contribution requirements for fiscal year 2010.

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											0	-
30-34	1	2	2								5	43,361
35-39		1		1							2	47,144
40-44			2								2	52,251
45-49		1		2	3						6	53,930
50-54					2	3	1				6	59,287
55-59											0	-
60-64								1			1	71,849
65+										1	1	86,663
<b>TOTAL</b>	<b>1</b>	<b>4</b>	<b>4</b>	<b>3</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>23</b>	<b>54,497</b>

Age = 44.91 Years

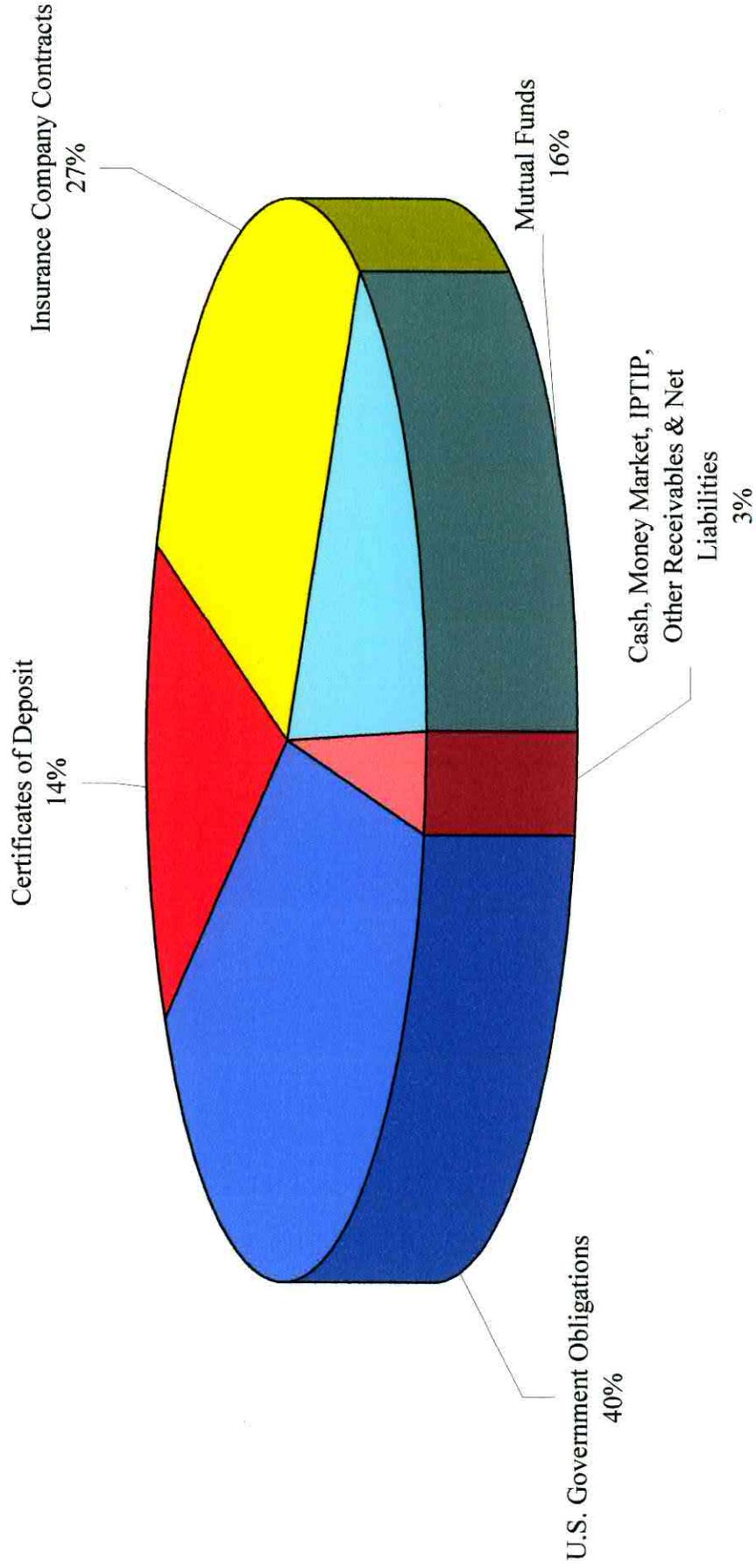
Service = 15.80 Years

**ASSET INFORMATION**

Cash, Money Market, IPTIP	\$240,368
Certificates of Deposit	1,322,177
State and Local Obligations	0
U.S. Government Obligations	3,562,315
Insurance Company Contracts	2,522,642
Pooled Investment Accounts	0
Mutual Funds	1,517,620
Common Stock	0
Preferred Stock	0
Taxes Receivable	0
Accrued Interest	0
Other Receivables	41,622
Net Liabilities	100
Net Present Assets at Market Value	<u>\$9,206,644</u>

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

ASSET INFORMATION



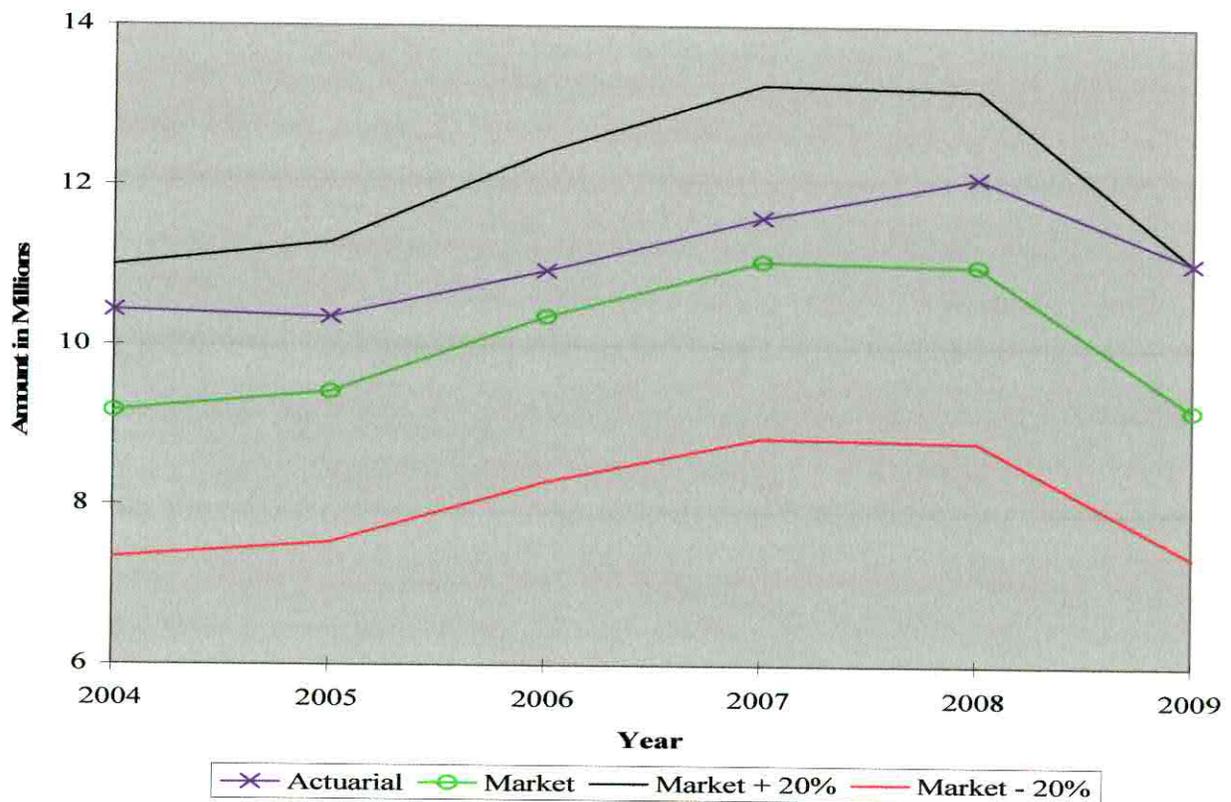
DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

1.	Actuarial Value of Assets, May 1, 2008	\$12,102,168
2.	Contributions Received During 2008-2009	358,754
3.	Benefit Payments and Expenses Made During 2008-2009	663,055
4.	Assumed Interest at 8.00% on (1), (2) and (3)	957,016
5.	Preliminary Actuarial Value of Assets: [(1) + (2) - (3) + (4)]	12,754,883
6.	Market Value, May 1, 2009	9,206,644
7.	Preliminary Adjustment Account:	
	a) Amount: [(5) - (6)]	3,548,239
	b) Percentage: [(7a) ÷ (6) x 100%]	38.54%
8.	Final Adjustment Amount	
	a) Amount	1,841,329
	b) Percentage	20.00%
9.	Final Actuarial Value of Assets, May 1, 2009: [(6) + (8a)]	11,047,973
10.	Three-Year Adjustment Amount (Effective May 1, 2008-Next Adjustment May 1, 2011)	0
11.	Final Actuarial Value of Assets, May 1, 2009	11,047,973

**ASSET HISTORY**

<u>For the Year beginning May 1</u>	<u>Actuarial Value of Assets</u>	<u>Market Value of Assets</u>
2009	\$11,047,973	\$9,206,644
2008	12,102,168	11,001,971
2007	11,603,090	11,053,316
2006	10,931,479	10,359,281
2005	10,348,794	9,407,995
2004	10,427,747	9,165,639

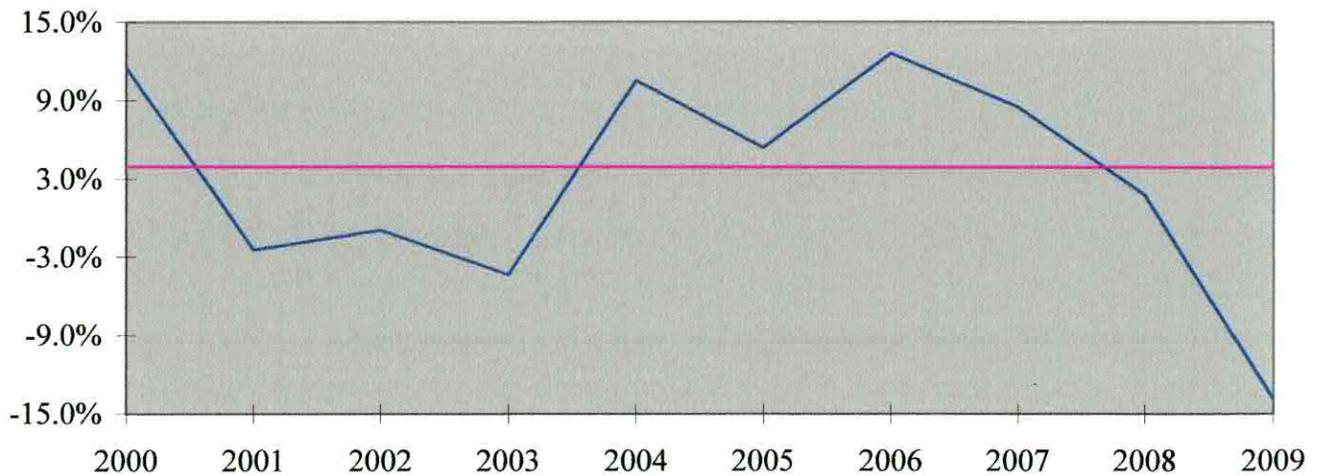
The chart below presents a comparison between the Actuarial Value of Assets and the Market Value of Assets for the current year and the five preceding years. The chart also illustrates the corridor 20% above and 20% below the Market Value of Assets.



ANALYSIS OF INVESTMENT RETURN

<u>Fiscal Year Ending April 30</u>	<u>Annual Rate of Return</u>
2009	-13.85%
2008	1.78
2007	8.51
2006	12.62
2005	5.37
2004	10.52
2003	-4.35
2002	-0.94
2001	-2.46
2000	11.49
<u>Composite</u>	
2000-2009	3.90%

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



THIRTY - YEAR PROJECTION OF PAYMENTS

Year	Termination		Payouts from Active Group Upon		Death	Retirement	Disability	Payouts from		Total
	Lump Sum	Deferred Pension	Retired Group	Deferred Pensioners						
2009	451	0	5,724	101,043	7,650	676,167	0	791,035		
2010	540	0	7,664	149,431	15,858	671,444	0	844,937		
2011	604	0	7,529	184,639	24,907	671,230	0	888,909		
2012	249	0	9,531	221,134	34,661	667,102	0	932,677		
2013	90	0	11,801	262,460	45,614	662,101	0	982,066		
2014	98	0	13,866	296,898	56,117	656,254	0	1,023,233		
2015	0	0	15,485	335,956	67,429	649,385	0	1,068,255		
2016	0	0	17,331	376,211	78,501	641,450	0	1,113,493		
2017	0	0	18,960	417,346	89,919	632,345	0	1,158,570		
2018	0	0	20,489	456,049	99,117	622,048	0	1,197,703		
2019	0	0	22,318	493,544	108,456	610,575	0	1,234,893		
2020	0	0	23,746	535,148	117,809	597,726	0	1,274,429		
2021	0	0	25,565	570,633	127,091	583,594	0	1,306,883		
2022	0	0	26,713	598,686	136,207	568,250	0	1,329,856		
2023	0	0	28,248	628,540	143,411	551,608	0	1,351,807		
2024	0	0	29,126	655,337	150,289	533,735	0	1,368,487		
2025	0	0	30,425	678,779	157,329	514,711	0	1,381,244		
2026	0	0	30,950	704,387	164,927	494,568	0	1,394,832		
2027	0	0	32,013	730,532	172,178	473,268	0	1,407,991		
2028	0	0	32,404	767,922	178,144	467,354	0	1,445,824		
2029	0	0	33,160	791,613	184,217	444,431	0	1,453,421		
2030	0	0	33,386	806,779	190,969	420,471	0	1,451,605		
2031	0	0	33,754	823,381	196,433	395,634	0	1,449,202		
2032	0	0	33,721	840,687	201,708	370,135	0	1,446,251		
2033	0	0	33,890	859,364	207,625	344,245	0	1,445,124		
2034	0	0	33,512	873,927	211,415	318,249	0	1,437,103		
2035	0	0	33,545	885,223	215,330	292,295	0	1,426,393		
2036	0	0	32,595	891,697	218,023	266,685	0	1,409,000		
2037	0	0	32,416	892,745	219,314	241,733	0	1,386,208		
2038	0	0	31,365	888,253	221,011	217,664	0	1,358,293		

**GASB STATEMENT NO. 25 DISCLOSURE INFORMATION**

**DEVELOPMENT OF THE ANNUAL REQUIRED CONTRIBUTION OF THE  
MUNICIPALITY**

	Fiscal Year May 1, 2009 through <u>April 30, 2010</u>
1. Entry Age Normal Cost	\$291,714
2. Actuarial Accrued Liability	14,379,011
3. Actuarial Value of Assets	11,047,973
4. Unfunded Actuarial Accrued Liability	3,331,038
5. Minimum Payment to Amortize Unfunded Actuarial Accrued Liability Over 40 Years from Effective Date of Application of GASB 25 (28 years remaining):	294,623
6. Total Annual Required Contribution for Fiscal Year April 30, 2010: [(1) + (5)]	586,337
7. Active Member Contributions (9.455% of Salaries):	118,511
8. <b>Annual Required Contribution (ARC) payable at the beginning of the current fiscal year: [(6) - (7)]</b>	<b>467,826</b>

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

NOTES:

- The Annual Required Contribution as of May 1, 2009 has been determined under the Governmental Accounting Standards Board Statement No. 25 and is required disclosure for the fiscal year ending April 30, 2010. The Entry Age Normal Cost and the Actuarial Accrued Liability were determined using the Entry Age Normal 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 dollar amount over the closed Maximum Amortization Period as defined 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**

***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 police officers 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.

***Investment Return***

7.75% per annum, compounded annually (net of expenses).

***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.

***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.

**ACTUARIAL ASSUMPTIONS  
(Continued)**

***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.

***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

**ACTUARIAL ASSUMPTIONS  
(Continued)**

***Expenses***

None assumed.

***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 Asset Basis***

A preliminary actuarial value of assets is calculated by accumulating the prior year's actuarial value with adjustments for contributions and benefit payments at the valuation interest rate. The market value is subtracted from the preliminary actuarial value. The difference, the preliminary adjustment account, is divided by the market value. Then using the following table, the final actuarial value of assets is calculated by adding the final adjustment account to the market value.

<b><u>Percentage of Market Value (Plus or Minus)</u></b>	
<b><u>Preliminary Adjustment Account</u></b>	<b><u>Final Adjustment Account</u></b>
0% to 10%	Same as preliminary adjustment account
10% to 20%	10% plus 2/3 of the excess over 10%
20% to 30%	16 2/3% plus 1/3 of the excess over 20%
Over 30%	20%

Effective May 1, 2011, a 3-year cumulative analysis of the actuarial value of assets will be made. If the final actuarial value differentiates by more than 10% (plus or minus) from the market value of assets, the final actuarial value of assets will be further adjusted to equal 90% or 110% of the market value of assets.

***Actuarial Cost Method***

Entry Age Normal Cost

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**SUMMARY OF PRINCIPAL PLAN PROVISIONS**

**Definitions**

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***

Age 50 with 20 or more years of creditable service.

***Normal Pension Amount***

50% of annual salary attached to the rank held at the date of retirement, plus

2½% of such annual salary for service from 20 to 30 years (maximum 25%)

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.

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

***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**

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.

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.

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

**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***

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.

***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*

***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*.

***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.

***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*.