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The Firefighters' Pension Trust Fund of the City of Stamford

Actuarial Valuation

July 1, 2012

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May 9, 2013

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I. Introduction

A. Purpose of the Valuation

Liabilities were valued as of July 1, 2012 using data, cost information and assumptions.

The purpose of the valuation is to report the estimated funded status of the plan as of July 1, 2012 as well as an annual required contribution for the fiscal year ending June 30, 2014.

It is important to note that the ultimate cost of a pension plan is based primarily on the level of benefits promised by the plan. The pension fund's investment earnings serve to reduce the cost of plan benefits and expenses. Thus,

City's Ultimate Cost	=	*Benefits Paid*	+	*Expenses Incurred*	−	*Employee Contributions*	−	*Investment Return*

Assets reported are actual (including accruals) through June 30, 2012 and reflect the asset smoothing method.

Plan Changes

We have changed the plan funding to include the cost of paying the Medicare Part B supplemental benefit from the pension fund. This change and the addition of the $4,000 Post Retirement Life Insurance for Actives and Retirees, increased the City's Annual Recommended Contribution (ARC) by $430,000.

Assumption Changes

Beginning with this valuation, we have updated the salary scale, investment return and mortality assumptions. In addition, we made an allowance for vacation days as a component of final pay. Lastly, we updated the plan's normal cost to include a 3% payroll growth assumption since we are projecting for fiscal 2014. These changes increased the City's ARC by $58,000.

I. Introduction
(continued)

B. Certification

This report presents the results of the July 1, 2012 Actuarial Valuation for The Firefighters' Pension Trust Fund of the City of Stamford (the Plan) for the purpose of estimating the funded status of the Plan and determining the Annual Required Contribution (ARC) for the fiscal year ending June 30, 2014. This report is intended to satisfy the requirements of Connecticut General Statute 7-450a. This report may not be appropriate for any other purpose.

The valuation has been performed in accordance with generally accepted actuarial principles and practices. It is intended to comply with all applicable Actuarial Standards of Practice.

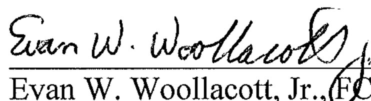
I certify that the actuarial assumptions and methods that were selected by me and represent my best estimate of anticipated actuarial experience under the Plan.

In preparing this valuation, I have relied on employee data provided by the Plan Sponsor, and on asset and contribution information provided by the Trustee. I have audited neither the employee data nor the financial information, although I have reviewed them for reasonableness.

The results in this valuation report are based on the Plan as summarized in the *Plan Provisions* section of this report and the actuarial assumptions and methods detailed in the *Description of Actuarial Methods and Assumptions* section of this report.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed.

I am a member of the American Academy of Actuaries and meet its Qualification Standards to render the actuarial opinion contained herein.



Evan W. Woollacott, Jr., FCA, MAAA, EA
11-04513

May 9, 2013

II. Results of the Valuation

A. Assets

Development of Market Value

1. Beginning value, July 1, 2011	
a. Trust assets	$129,733,608
b. Accrued contributions - Employee	0
c. Benefits payable	0
d. Administrative expenses payable	0
e. Net: (a) + (b) - (c) - (d)	129,733,608
2. Contributions	
a. Contributions during year - Employer	2,080,000
b. Contributions during year - Employee	1,205,707
c. Total for Plan Year	3,285,707
3. Disbursements	
a. Benefit payments during year	7,736,766
b. Administrative expenses during year	0
c. Change in benefits payable	0
d. Change in administrative expenses payable	0
e. Total for plan year	7,736,766
4. Net Investment Return	
a. Interest and dividends	3,423,775
b. Other Income	0
c. Realized/unrealized gain (loss)	(10,203,819)
d. Investment - related expenses	(943,975)
e. Total	(7,724,019)
5. Ending Value, July 1, 2012	
a. Trust assets: (1e) + (2c) - (3e) + (4e)	117,558,530
b. Accrued contribution - Employer	0
c. Accrued contribution - Employee	0
d. Benefit payable	0
e. Administrative expenses payable	0
f. Net: (a) + (b) + (c) - (d) - (e) or (1) + (2) - (3) + (4)	117,558,530
6. Approximate rate of return 2011-2012	(6.06)%

II. Results of the Valuation
(continued)

A. Assets (continued)

Development of Actuarial Asset Value

1.	Actuarial Asset Value at July 1, 2011	$135,656,323
2.	Expected Return	10,757,664
3.	Contributions	3,285,707
4.	Disbursements (includes Inv. Management Fees)	7,736,766
5.	Expected Actuarial Asset Value at June 30, 2012 (1) + (2) + (3) - (4)	141,962,928
6.	Market Value of Assets	117,558,530
7.	Appreciation (Depreciation) Capitalized .20 x [(6) - (5)]	(4,880,880)
8.	Preliminary Actuarial Asset Value at June 30, 2012 (5) + (7)	137,082,048
9.	70% of Market Value .7 x (6)	82,290,971
10.	130% of Market Value 1.3 x (6)	152,826,089
11.	Actuarial Asset Value at June 30, 2012, less than (9); and not greater than (10)	137,082,048
12.	Round to nearest thousand	137,082,000
13.	Actuarial Asset Return	4.37%

II. Results of the Valuation
(continued)

A. Assets (continued)

Expected Asset Return Assumption

	Target Portfolio Percent	Expected Return*	Weighted Return
Cash	0.00%	3.00%	0.00%
Equities			
Large Cap	35.00%	8.50%	2.98%
International	20.00%	9.25%	1.85%
Small Cap	15.00%	9.75%	1.46%
Fixed Income			
High Quality Bonds	14.00%	5.50%	0.77%
International	2.00%	6.50%	0.13%
High Yield	2.00%	7.50%	0.15%
Emerging Markets	2.00%	6.50%	0.13%
Alternative Investments	10.00%	8.25%	0.83%
Totals	100.00%		8.29%

** Expected return assumptions were provided by Hooker & Holcombe Investment Advisors. The returns are based on their most recently published Capital Market Assumptions.*

II. Results of the Valuation
(continued)

B. Development of Unfunded Accrued Liability and Funded Ratio

	July 1, 2012 Valuation	July 1, 2011 Interim Valuation
1. Projected Accrued Liability	$147,783,000	$139,939,000
2. Assets (Actuarial Value)	137,082,000	135,656,000
3. Unfunded Accrued Liability: (1) - (2)	10,701,000	4,283,000
4. Funded Ratio: (2) ÷ (1)	92.8%	96.9%

II. Results of the Valuation
(continued)

C. Annual Recommended Contribution

	July 1, 2012 for Fiscal Year Ending June 30, 2014	July 1, 2011 for Fiscal Year Ending June 30, 2013	July 1, 2010 for Fiscal Year Ending June 30, 2012
1. Ongoing Annual Cost	$3,076,000	$3,009,000	$2,879,000
2. Estimated Actuarial Employee Contributions	1,100,000	1,132,000	1,083,000
3. City's Ongoing Annual Cost: (1) - (2)	1,976,000	1,877,000	1,796,000
4. Amortization of Unfunded Accrued Liability (15 years)	1,143,000	463,000	284,000
5. City's Annual Contribution: (3) + (4)	3,119,000	2,340,000	2,080,000

II. Results of the Valuation
(continued)

D. Determination of Actuarial Gain/(Loss)

The Actuarial Gain/(Loss) for a year is the difference between the Expected Unfunded Actuarial Accrued Liability and the Actual Unfunded Actuarial Accrued Liability, without regard to any plan changes or changes in methods or actuarial assumptions. Such a gain/(loss) is also referred to as an Experience Gain/(Loss), since it reflects the difference between what was expected and what was actually experienced.

Actuarial Gain/(Loss)	
1. Expected unfunded actuarial accrued liability July 1, 2012	
a. Expected unfunded actuarial accrued liability July 1, 2011	
i. Unfunded actuarial accrued liability July 1, 2010	$2,625,113
ii. Normal cost July 1, 2010	2,986,323
iii. Interest at 8.0% to July 1, 2011	448,915
iv. City contributions for 2010/2011	2,948,719
v. Interest for ½ year on (iv)	117,949
vi. Expected unfunded actuarial accrued liability July 1, 2011: (i) + (ii) + (iii) - (iv) - (v)	2,993,683
b. Expected unfunded actuarial accrued liability July 1, 2012	
i. Expected unfunded actuarial accrued liability July 1, 2011	2,993,683
ii. Estimated normal cost July 1, 2011	3,120,708
iii. Interest at 8.0% to July 1, 2012	489,151
iv. City contributions for 2011/2012	3,285,707
v. Interest for ½ year on (iv)	131,428
vi. Expected unfunded actuarial accrued liability July 1, 2012: (i) + (ii) + (iii) - (iv) - (v)	3,186,407
2. Actual unfunded liability July 1, 2012 for gain/(loss) determination	6,561,617
3. Actuarial gain/(loss): (1b)(vi) - (2)	(3,375,210)
4. Sources of gain/(loss)	
a. Gain/(Loss) due to salaries	$3,192,000
b. Gain/(Loss) due to return on assets	(6,362,000)
c. Gain/(Loss) due to retirement, turnover and mortality	(205,210)
d. Total Gain/(Loss): (a) + (b) + (c)	$(3,375,210)

II. Results of the Valuation

(continued)

E. New Accounting Standards

In June of 2012, The Government Accounting Standards Board (GASB) issued statements 67 and 68. GASB 67 is a new standard that pertains to financial reporting for pension plans. In general, it replaces GASB 25 and it is effective for fiscal years beginning after June 15, 2013. GASB 68 is a new standard that pertains to accounting and financial reporting for pensions. In general, it replaces GASB 27 and it is effective for fiscal years beginning after June 15, 2014. Both statements replace the relevant provisions of GASB 50.

Currently, your annual financial report tracks the Net Pension Obligation (NPO) and the NPO is displayed in the footnote section of the annual financial report. With GASB 68, the NPO will no longer be tracked. A new item called Net Pension Liability (NPL) will be displayed not as a footnote but directly on your balance sheet. For both standards, liabilities are calculated using the Entry Age Normal Cost Method. In general, the NPL is EAN Accrued Liability less the Market Value of Assets. A table that displays the NPL for the Police Pension Trust Fund of the City of Stamford is below.

Valuation Date	Entry Age Normal Accrued Liability	Market Value Of Assets	Net Pension Liability
July 1, 2010	138,621,000	113,818,000	24,803,000
July 1, 2012	153,483,000	117,559,000	35,924,000

In addition to replacing the NPO with NPL, the Annual Required Contribution (ARC) will also be eliminated. Even though the ARC will be eliminated, we will work with you to develop a contribution policy. The new term for this is called the Actuarially Determined Contribution (ADC). One possible ADC is to use the same concepts that were used to develop the ARC which would mean no change in the present funding policy.

Under the prior standards the ARC served as both the contribution policy and the accounting expense. As noted above the ARC is eliminated and replaced with the ADC with regard to the funding policy. The new pension expense will be quite different from the ARC and it has several components (including normal cost, interest cost, amortization components, actual return and plan changes). The new pension expense will help reconcile the change in the Net Pension Liability each year. In addition, it will be more volatile than the ARC and so not suitable for use as a contribution policy.

If the City wants to see how the pension expense works, please let us know and we will prepare a sample exhibit. Like the Net Pension Liability, the calculation of the pension expense is based upon the Entry Age Normal Cost Method and will no longer be a footnote but reported directly in the annual financial report.

II. Results of the Valuation
(continued)

F. Participant Data

The data reported by the City for this valuation includes all active employees who met the Plan's minimum age and service requirements as of July 1, 2012.

Participant Data				
	Active	Terminated Vested	Retired	Total
Total Participants July 1, 2010	268	0	209	477
Adjustments	0	0	0	0
Retirements	-16	0	+16	0
Terminations				
Vested	0	0	N/A	0
Non-vested	-1	N/A	N/A	-1
Deaths				
Without death benefit	0	0	-20	-20
With death benefit	-1	0	-2	-3
New beneficiaries	N/A	0	+11	+11
Lump sum /cash outs	0	0	0	0
Rehires	0	0	0	0
New entrants	0	N/A	N/A	0
Total Participants July 1, 2012	250	0	214	464
Average age				
July 1, 2010	45.3	-	72.7	
July 1, 2012	46.4	-	72.3	
Average service				
July 1, 2010	16.8			
July 1, 2012	17.9			
Total annual plan salaries				
July 1, 2010	$21,662,924			
July 1, 2012	20,850,430			
Total annual benefits				
July 1, 2010		$0	$6,851,574	
July 1, 2012		0	8,043,910	

In addition, there are two participants who terminated with less than 15 years of service who are each due a return of contribution.

III. Actuarial Cost Methods and Assumptions

A. Actuarial Cost Methods

Funding Method

The actuarial method used to develop the Annual Recommended Contribution is the Projected Unit Credit Cost Method.

The Ongoing Annual Cost equals the total present value for all participants of the benefit accruing during the coming year, increased to reflect salaries projected to the assumed retirement date.

The Accrued Liability equals the present value of all benefits accrued to date, increased to reflect salaries for all active participants. The total Accrued Liability is reduced by plan assets to develop the Unfunded Accrued Liability.

The cost of amortizing the Unfunded Accrued Liability constitutes a portion of the Annual Recommended Contribution.

The total Annual Recommended Contribution equals the Ongoing Annual Cost, further increased by any positive amortization of the Unfunded Accrued Liability. The amortization period is 15 years.

Asset Valuation Method

The Actuarial Value of Assets used in the development of the Annual Recommended Contribution is designed to smooth out fluctuations in the market value. An Expected Actuarial Value of Assets is determined based on the prior year's Actuarial Value of Assets and the assumed interest rate equal to the valuation interest rate. The Actuarial Value of Assets is equal to the Expected Actuarial Asset Value plus 20% of the difference between the Market Value and the Expected Value. The Actuarial Value of Assets is limited to a minimum of 70% or a maximum of 130% of the Market Value.

III. Actuarial Cost Methods and Assumptions

(continued)

B. Actuarial Assumptions

Changes in Actuarial Assumptions as of July 1, 2012:

The valuation reflects changes in the actuarial assumptions listed below. (The assumptions used before and after these changes are more fully described in the subsequent pages.)

- Mortality
- Mortality Improvement
- Interest
- Salary Scale
- Payroll Growth
- Medicare Part B Reimbursements
- Post-Retirement Life Insurance

Mortality:	RP-2000 Mortality Table with separate male and female rates, with blue collar adjustment, combined table for non-annuitants and annuitants, projected to the valuation date with Scale AA. Prior Valuation: 1983 Group Annuity Mortality Table with separate male and female rates, with no collar adjustment, combined table for non-annuitants and annuitants.
Mortality Improvement:	Projected to date of decrement using Scale AA (generational mortality). Prior Valuation: None.
Investment Return:	7.75% per year Prior Valuation: 8.00% per year

III. Actuarial Cost Methods and Assumptions
(continued)

B. Actuarial Assumptions (continued)

Salary Scale:

Yearly Rates of Increases

Age	Rate
20	6.50%
25	6.50%
30	5.85%
35	5.20%
40	4.55%
45	3.90%
50	3.25%
55+	3.00%

Prior Valuation: Average of 4.5% per year over the long term (includes cost of living and promotional increases).

Payroll Growth Assumption:

3% annually to project normal cost only

Prior Valuation: 0%

Medicare Part B Reimbursements:

3% increase assumption each year

Prior Valuation: Not valued.

Retirement Age:

Sample rates of assumed annual rates of retirement after completion of 30 years are as follows:

Age	Retirement Rate
55	50%
56	50%
57	50%
58	50%
59	50%

An additional 40% is added upon attainment of age 48 and 20 years of service if hired after January 1, 1981 and 20 years of service if hired before January 1, 1981 and 100% of members remaining beyond the earlier of age 60 with 30 years of service or age 65 are assumed to retire.

III. Actuarial Cost Methods and Assumptions

(continued)

B. Actuarial Assumptions (continued)

Turnover: The following annual rates of turnover are assumed:

Age	Probability
20	5.44%
25	4.89%
30	3.70%
35	2.35%
40	0.00%
45	0.00%
50	0.00%
55	0.00%
60	0.00%

Disability: The following annual rates of disability are assumed:

Age	Probability
20	0.05%
25	0.05%
30	0.05%
35	0.06%
40	0.09%
45	0.18%
50	0.40%
55	0.85%
60	1.74%

Survivorship: 80% of employees assumed to be married, with wives 4 years younger than husbands.

Expenses: The return is assumed to be net of both administrative expenses and investment expenses. Therefore, a direct expense assumption has not been made.

Vacation Bank: 50% of retirees are assumed to elect additional pension credit as an annuity from the fund.

III. Actuarial Cost Methods and Assumptions
(continued)

B. Actuarial Assumptions (continued)

Post-Retirement Life Insurance:	100% of active and retired employees are assumed to have a $4,000 life insurance policy beginning at retirement. Prior Valuation: Not valued.

IV. Summary of Current Principal Pension Plan Provisions

Pension Earnings: Base Salary in Final Year of Employment excluding bonuses and overtime including differential amounts.

Normal Retirement:

Eligibility: 20 years of service if hired before January 1, 1981; 20 years of service and age 48 if hired after January 1, 1981.

Benefit:

Years of Service	% of Pension Earnings
20	50.00%
21	52.00%
22	54.00%
23	56.00%
24	58.00%
25	60.00%
26	62.00%
27	64.00%
28	66.00%
29	68.00%
30	70.00%
31	72.00%
32	74.00%

Limits on Annual Benefit:

Maximum: 74.00% of pension earnings.

Minimum: None.

Early Retirement:

Eligibility: None.

Benefit: See Termination Benefit.

IV. Summary of Current Principal Pension Plan Provisions
(continued)

Disability - Non-Service Connected:

Service Requirement:	20 years of service.
Benefit:	50% of salary, not less than accrued benefit.

Disability - Service Connected:

Service Requirement:	None.
Benefit:	100% of pay (or 75% of pay depending on extent of disability).

Pre-Retirement Death Benefit - Non Service Connected and less than 10 years of service:

Service Requirement:	None.
Benefit:	Return of employee contributions with interest.

Pre-Retirement Death Benefit - Service Connected or more than 10 years of service:

Service Requirement:	None, if service connected; 10 years if non service connected.
Benefit:	Greater of 100% of retirement benefit and 50% of salary.

Post-Retirement Spouse's Benefit:	100% of pension retiree was receiving.
Post-Retirement Death Benefit:	Lump sum, excess of accumulated contributions over benefits paid to member or survivors (if not eligible for spouse's benefit).
Post-Retirement Life Insurance:	Lump Sum equal to $4,000.00.

IV. Summary of Current Principal Pension Plan Provisions
(continued)

Medicare Part B:	The City pays the cost of the Medicare Part B supplemental benefit from the pension trust for each retiree receiving Medicare coverage. The 2012 Medicare Part B monthly premium is $99.90.
Vesting in Accrued Benefit:	
Eligibility:	15 years of service.
Benefit:	2.5% of final salary times service. Benefit is payable when the employee would have had 20 years of service but not earlier than age 48.
Termination Benefit:	Accumulated contributions as lump sum, if not vested.
Employee Contributions:	6.25% of salary; no contributions for those with 32 or more years of service.
Additional Retirement Benefits:	Employees can trade in vacation leave for additional pension credit. Each 20 days grants an additional 1.5% of salary up to a maximum of 7.5%.

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