HOOKER & HOLCOMBE, INC.
Benefit Consultants and Actuaries

65 LaSalle Road
West Hartford, CT 06107-2397

860-521-8400 tel
860-521-3742 fax
www.hhconsultants.com

The Firefighters' Pension Trust Fund of the City of Stamford

Actuarial Valuation

July 1, 2014

Evan W. Woollacott, Jr.,
Vice President and
Consulting Actuary

Yelena Pelletier
Actuary

Jonathan Plumb
Actuarial Analyst

March 11, 2015

Table of Contents

I. Introduction

A. Purpose of the Valuation

Liabilities were valued as of July 1, 2014 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, 2014 as well as an Actuarially Determined Contribution for the fiscal year ending June 30, 2016.

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, 2013 and reflect the asset smoothing method.

Plan Changes

We have assumed that no changes have been made to the plan since the July 1, 2013 actuarial valuation.

Assumption and Other Changes

Based on an experience study dated November 4, 2014, the following assumption changes were made:

1. Retirement rates were based on years of service instead of the prior table based on age.
2. Salary increase rates were based on year of service instead of the prior table based on age.
3. The vacation bank assumption was increased to 60% from the prior 50% assumption.
4. The interest rate assumption was decreased to 7.25% from the prior 7.75%.
5. The actuarial cost method was modified to amortize the current unfunded liability over a closed 15 year period with future changes amortized over a new closed 15 year period.

The impact of the assumption changes was an increase in the Accrued Liability of approximately $3.1 million and an increase in the Recommended Contribution of $550,000.

I. Introduction
(continued)

B. Certification

This report presents the results of the July 1, 2014 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 Actuarially Determined Contribution (ADC) for the fiscal year ending June 30, 2016. 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

Evan W. Woollacott, Jr., FCA, MAAA, EA
14-04513

March 11, 2015

II. Results of the Valuation

A. Assets

Development of Market Value

1.	**Beginning value, 7/01/2013**	
	a. Trust assets	$119,550,988
	b. Accrued contributions - Employee	$0
	c. Benefits payable	$0
	d. Administrative expenses payable	$0
	e. Net: (a) + (b) – (c) – (d)	$119,550,988
2.	**Contributions**	
	a. Contributions during year - Employer	3,119,000
	b. Contributions during year - Employee	1,189,553
	c. Total for Plan Year	4,308,553
3.	**Disbursements**	
	a. Benefit payments during year	8,956,725
	b. Administrative expenses during year	247,774
	c. Change in benefits payable	0
	d. Change in administrative expenses payable	0
	e. Total for plan year	9,204,499
4.	**Net Investment Return**	
	a. Interest and dividends	1,860,838
	b. Other Income	0
	c. Realized/unrealized gain (loss)	13,850,144
	d. Investment – related expenses	(651,210)
	e. Total	15,059,772
5.	**Ending Value, 7/01/2014**	
	a. Trust assets: (1e) + (2c) - (3e) + (4e)	129,714,814
	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)	129,714,814
6.	**Approximate rate of return 2013-2014**	12.86%

II. Results of the Valuation
(continued)

A. Assets (continued)

Development of Actuarial Asset Value

1.	Actuarial Asset Value at July 1, 2013	$138,438,777
2.	Expected Return	10,669,750
3.	Contributions	4,308,553
4.	Disbursements (includes Administrative Fees)	9,204,499
5.	Expected Actuarial Asset Value at June 30, 2014 (1) + (2) + (3) - (4)	144,212,581
6.	Market Value of Assets	129,714,814
7.	Appreciation (Depreciation) Capitalized .20 x [(6) - (5)]	-2,899,553
8.	Preliminary Actuarial Asset Value at June 30, 2014 (5) + (7)	141,313,028
9.	70% of Market Value .7 x (6)	90,800,370
10.	130% of Market Value 1.3 x (6)	168,629,258
11.	Actuarial Asset Value at June 30, 2014, less than (9); and not greater than (10)	141,313,028
12.	Round to nearest thousand	141,313,000
13.	Actuarial Asset Return	5.64%

II. Results of the Valuation
(continued)

A. Assets (continued)

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*	Weighting
Large Cap Equities	35.00%	4.75%	1.66%
International Equities	20.00%	5.25%	1.05%
Small Cap Equities	15.00%	5.50%	0.83%
High Quality Bonds	14.00%	2.00%	0.28%
International Income	2.00%	2.00%	0.04%
High Yield	2.00%	3.25%	0.07%
Emerging Markets	2.00%	3.50%	0.07%
Alternative Investments	10.00%	5.25%	0.53%
	100.00%		4.53%
Long-Term Inflation Expectation			3.00%
Long-Term Expected Nominal Return			7.53%

**Long-Term Returns are provided by HHIA. The returns are geometric means.*

The long-term expected rate of return on pension plan investments was determined using a building block method in which best-estimate ranges of expected future real rates of return are developed. Best estimates of the real rates of return for each major asset class are included in the pension plan's target asset allocation.

The information above is based on geometric means and does not reflect additional returns through investment selection, asset allocation and rebalancing. The results support a rate between 7% and 8.0%. An expected rate of return of 7.25% was used.

II. Results of the Valuation

(continued)

B. Development of Unfunded Accrued Liability and Funded Ratio

		July 1, 2014 Valuation	July 1, 2013 Valuation
1.	Projected Accrued Liability	$159,884,000	$152,247,000
2.	Assets (Actuarial Value)	$141,313,000	$138,439,000
3.	Unfunded Accrued Liability: (1) - (2)	$18,571,000	$13,808,000
4.	Funded Ratio: (2) ÷ (1)	88.4%	90.9%

II. Results of the Valuation
(continued)

C. Actuarially Determined Contribution

		July 1, 2014 for Fiscal Year Ending June 30, 2016	July 1, 2013 for Fiscal Year Ending June 30, 2015	July 1, 2012 for Fiscal Year Ending June 30, 2014
1.	Ongoing Annual Cost	$3,547,000	$3,245,000	$3,076,000
2.	Estimated Employee Contributions	1,136,000	1,144,000	1,100,000
3.	City’s Ongoing Annual Cost: (1) - (2)	2,411,000	2,101,000	1,976,000
4.	Amortization of Unfunded Accrued	1,931,000	1,474,000	1,143,000
5.	City’s Annual Contribution: (3) + (4)	4,342,000	3,575,000	3,119,000

II. Results of the Valuation
(continued)

D. Change in Contribution

1. July 1, 2013 valuation contribution	3,575,000
2. Increase due to assets	310,000
3. Decrease due to liabilities	(145,000)
4. Expected Increase	63,000
5. Increase due to assumption changes	550,000
6. Decrease due to plan changes	-
7. Contribution timing	49,000
8. Miscellaneous decrease*	(60,000)
9. July 1, 2014 valuation contribution	4,342,000

* *Includes more employee contributions than expected and 15 year open amortization.*

II. Results of the Valuation

(continued)

E. 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.

1. Expected unfunded actuarial accrued liability July 1, 2014	
a. Expected unfunded actuarial accrued liability July 1, 2013	
i. Unfunded actuarial accrued liability July 1, 2013	$13,808,245
ii. Normal cost July 1, 2013	3,150,733
iii. Interest at 7.75% to July 1, 2014	1,314,321
iv. Contributions for 2013/2014	4,308,553
v. Interest for ½ year on (iv)	166,956
vi. Expected unfunded actuarial accrued liability July 1, 2014: (i) + (ii) + (iii) - (iv) - (v)	$13,797,790
2. Unfunded liability July 1, 2014 for gain/(loss) determination *	$15,499,503
3. Actuarial gain/(loss): (1a)(vi) - (2)	($1,701,713)
4. Sources of gain/(loss)	
a. Gain/(Loss) due to salaries	$1,891,000
b. Gain/(Loss) due to return on assets	(2,900,000)
c. Gain/(Loss) due to retirement, turnover and mortality	(692,713)
d. Total Gain/(Loss): (a) + (b) + (c)	($1,701,713)

** Unfunded Liability before Assumption changes.*

II. Results of the Valuation
(continued)

E. 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, 2014.

Participant Data				
	Active	**Terminated Vested**	**Retired**	**Total**
Total Participants July 1, 2013	268	0	217	485
Adjustments	0	0	0	0
Retirements	-10	0	+10	0
Terminations				
Vested	0	0	N/A	0
Non-vested	0	N/A	N/A	0
Deaths				
Without death benefit	0	0	-5	-5
With death benefit	-1	0	-2	-3
New beneficiaries	N/A	0	+3	+3
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, 2014	257	0	223	480
Average age				
July 1, 2013	45.7	-	73.0	
July 1, 2014	46.1	-	73.2	
Average service				
July 1, 2013	16.9			
July 1, 2014	17.3			
Total annual plan salaries				
July 1, 2013	$21,702,858			
July 1, 2014	20,981,143			
Total annual benefits				
July 1, 2013		$0	$8,374,757	
July 1, 2014		0	9,036,302	

III. Actuarial Cost Methods and Assumptions

A. Actuarial Cost Methods

Funding Method

The actuarial method used to develop the Actuarially Determined 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 Actuarially Determined Contribution.

The total Actuarial Determined Contribution equals the Ongoing Annual Cost, further increased by any positive amortization of the Unfunded Accrued Liability. The current amortization period is a closed period of 15 years (was previously an open period). Each future valuation will amortize any changes in the unfunded accrued liability due to actuarial experience, plan changes or assumption changes over 15 years.

Asset Valuation Method

The Actuarial Value of Assets used in the development of the Actuarially Determined 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

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.

Mortality Improvement: Projected to date of decrement using Scale AA (generational mortality).

Investment Return: 7.25% per year (was 7.75%).

Salary Scale: Current:

Service	Rate
0	15.0%
1-2	10.0%
3	9.0%
4	8.0%
5	7.0%
6	6.0%
7	6.0%
8	5.0%
9	4.0%
10+	3.5%

Prior: 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%

Payroll Growth Assumption: 3% annually to project normal cost only.

Medicare Part B Reimbursements: 3% increase assumption each year.

III. Actuarial Cost Methods and Assumptions
(continued)

B. Actuarial Assumptions (continued)

Retirement Age: Current:

Ret Rates by Years of Service*	
Years	**Rate**
25	0.040
26	0.000
27	0.040
28	0.040
29	0.040
30	0.040
31	0.040
32	0.180
33	0.110
34	0.380
35	0.100
36	0.220
37	0.000
38	0.290
39	0.200
40	1.000
** Retirement rate at age 65 is 1.00*	

Prior:

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.

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%

III. Actuarial Cost Methods and Assumptions
(continued)

B. Actuarial Assumptions (continued)

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: 60% of retirees are assumed to elect additional pension credit as an annuity from the fund (was 50%).

IV. Summary of Current Principal Pension Plan Provisions

Pension Earnings: Base Salary in Final Year or 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).
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 2014 Medicare Part B monthly premium is $104.90.

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

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%.

G:\Clients\497 Stamford\2014 pyb 0701 fye 0630\Valuation\Pension Fire\2014 Fire Valuation.docx