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The Police Pension Trust Fund of the City of Stamford

Actuarial Valuation

July 1, 2012

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April 16, 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 actuarial assumptions.

The purpose of the valuation is to report the 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, 2010 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 increased the City's Annual Recommended Contribution (ARC) by $364,000.

Assumption Changes

Beginning with this valuation, we have updated the salary scale, investment return and mortality assumptions. In addition, we made an allowance for holiday pay 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 $1,138,000. Of the $1,138,000, $389,000 is attributable to assumption changes and $749,000 is attributable to the holiday pay change.

I. Introduction
continued

B. Certification

This report presents the results of the July 1, 2012 Actuarial Valuation for The Police 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.

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

April 16, 2013

II. Results of the Valuation

A. Assets

	07/01/2011 - 06/30/2012
1. Beginning value, 07/01/2011	
a. Trust assets	$153,004,438
b. Accrued contributions – Employee	0
c. Benefits payable	0
d. Administrative expenses payable	0
e. Net: (a) + (b) – (c) – (d)	153,004,438
2. Contributions	
a. Contributions during year - Employer	4,341,000
b. Contributions during year - Employee	1,190,495
c. Total for Plan Year	5,531,495
3. Disbursements	
a. Benefit payments during year	10,522,795
b. Administrative expenses during year	0
c. Change in benefits payable	0
d. Change in administrative expenses payable	0
e. Total for plan year	10,522,795
4. Net Investment Return	
a. Interest and dividends	2,921,535
b. Other Income	0
c. Realized/unrealized gain (loss)	4,008,231
d. Investment – related expenses	(224,918)
e. Total	6,704,848
5. Ending Value, 06/30/2012`	
a. Trust assets: (1e) + (2c) - (3e) + (4e)	154,717,986
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)	$154,717,986
6. Approximate Rate of Return	4.5%

II. Results of the Valuation
continued

	07/01/2011 06/30/2012
1. Actuarial Asset Value on 07/01/2011	171,079,371
2. Expected Return	13,667,520
3. Contributions	5,531,495
4. Disbursements	10,522,795
5. Expected Actuarial Asset Value at 06/30/2012 (1) + (2) + (3) – (4)	179,755,591
6. Market Value of Assets at 06/30/2012	154,717,986
7. Appreciation (Depreciation) Capitalized .20 x [(6) – (5)]	(5,007,521)
8. Preliminary Actuarial Asset Value at 06/30 (5) + (7)	174,748,070
9. 70% of Market Value .7 x (6)	122,323,649
10. 130% of Market Value 1.3 x (6)	227,172,491
11. Actuarial Asset Value at 06/30/2012, not less than (9); and not greater than (10)	174,748,070
12. Round to nearest thousand	174,748,000
13. Actuarial Asset Return	5.1%

II. Results of the Valuation
continued

	Target Portfolio Percent	Expected* Return	Weighted Return
Equities			
U.S. Domestic	29%	9.00%	2.61%
Non-U.S.	18%	10.00%	1.80%
Fixed Income			
U.S. Domestic	10%	2.50%	0.25%
Non-U.S.	5%	2.50%	0.13%
High Yield	4%	7.50%	0.30%
Real Estate	10%	6.75%	0.68%
Alternatives			
Alternative Investments	17%	8.00%	1.36%
Hedge Funds	5%	8.00%	0.40%
Cash	2%	0.25%	0.01%
Totals	100%		7.53%

* *Expected return assumptions were provided by Clearbrook Advisors.*

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. Total Accrued Liability	$204,563,000	$192,260,000
2. Assets (Actuarial Value)	174,748,000	171,079,000
3. Unfunded Accrued Liability: (1) - (2)	29,815,000	21,181,000
4. Funded Ratio: (2) ÷ (1)	85.4%	89.0%

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
1. Ongoing Annual Cost	$4,235,000	$3,743,000
2. Estimated Actuarial Employee Contributions	1,189,000	1,149,000
3. City's Ongoing Annual Cost: (1) - (2)	3,046,000	2,594,000
4. Amortization of Unfunded Accrued Liability (15 years)	3,184,000	2,291,000
5. City's Annual Contribution payable at the beginning of the year: [(3) + (4)]	6,230,000	4,885,000

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 7/1/2012	
a. Unfunded actuarial accrued liability 7/1/2011	$ 21,181,000
b. City normal cost 7/1/2011	2,594,000
c. Interest at 8% to 7/1/2012 on (a) and (b)	1,902,000
d. City Contributions for 2011/2012	4,341,000
e. Interest for full year on (d)	347,000
f. Expected unfunded actuarial accrued liability 7/1/2012: (a)+(b)+(c)–(d)-(e)	20,989,000
2. Actual unfunded actuarial accrued liability 7/1/2012 for gain (loss) determination	
a. Unfunded actuarial accrued liability 7/1/2012	29,815,000
b. Adjustments 7/1/2012	
i. Part B change	3,061,000
ii. Change in assumptions	6,606,000
iii. Asset method change	0
iv. Total	9,667,000
c. Actual unfunded actuarial accrued liability for gain (loss) determination: (a)–(b)	20,148,000
3. Actuarial gain (loss): (1f)–(2c)	841,000
4. Sources of gain (loss)	
a. Gain (Loss) due to salaries	$ 4,649,000
b. Gain (Loss) due to return on assets	(5,008,000)
c. Gain (Loss) due to retirement, turnover and mortality	1,200,000
d. Total Gain (Loss): (a)+(b)+(c)	$ 841,000

II. Results of the Valuation
(continued)

E. ASC Information for Plan Auditors

Statement of Accumulated Plan Benefits	July 1, 2010	July 1, 2011
1. Significant actuarial assumptions		
a. Rate of return	8.00%	8.00%
b. Retirement age	See attached	See attached
c. Mortality	1983 GAM	1983GAM
2. Actuarial present value of vested benefits		
a. Participants currently receiving payments	$ 92,982,000	$ 96,590,000
b. Other vested members	76,762,000	79,741,000
c. Total	169,744,000	176,331,000
3. Actuarial present value of non-vested benefits	2,949,000	3,185,000
4. Actuarial present value of accumulated plan benefits: (2) + (3)	$172,693,000	$179,516,000

Statement of Changes in Accumulated Plan Benefits	
1. Actuarial present value of accumulated plan benefits 07/01/2010	$ 172,693,000
2. Increase (decrease) during year attributable to:	
a. Increase for interest due to the decrease in the discount period	$ 13,420,000
b. Benefits paid	(9,892,000)
c. Changes in actuarial assumptions	0
d. Plan amendment	0
e. Benefits accumulated	3,295,000
f. Net increase (decrease)	6,823,000
3. Actuarial present value of accumulated plan benefits 07/01/2011	$ 179,516,000

Each of these actuarial assumptions reflects the best estimate of the Plan's future experience, solely with respect to that individual assumption, on an ongoing plan basis. Were the Plan to terminate, different actuarial assumptions and other factors might be applicable in determining the Actuarial Present Value of Accumulated Plan Benefits.

II. Results of the Valuation
(continued)

E. ASC Information for Plan Auditors

Statement of Accumulated Plan Benefits

	July 1, 2011	July 1, 2012
5. Significant actuarial assumptions		
a. Rate of return	8.00%	7.75%
b. Retirement age	See attached	See attached
c. Mortality	1983GAM	RP-2000 Blue Collar
6. Actuarial present value of vested benefits		
a. Participants currently receiving payments	$ 96,590,000	$ 105,563,000
b. Other vested members	79,741,000	86,092,000
c. Total	176,331,000	191,655,000
7. Actuarial present value of non-vested benefits	3,185,000	2,824,000
8. Actuarial present value of accumulated plan benefits: (2) + (3)	$179,516,000	$194,479,000

Statement of Changes in Accumulated Plan Benefits

1. Actuarial present value of accumulated plan benefits 07/01/2011	$ 179,516,000
2. Increase (decrease) during year attributable to:	
a. Increase for interest due to the decrease in the discount period	$ 13,940,000
b. Benefits paid	(10,523,000)
c. Changes in actuarial assumptions	11,370,000
d. Plan amendment	0
e. Benefits accumulated	176,000
f. Net increase (decrease)	14,963,000
3. Actuarial present value of accumulated plan benefits 07/01/2012	$ 194,479,000

Each of these actuarial assumptions reflects the best estimate of the Plan's future experience, solely with respect to that individual assumption, on an ongoing plan basis. Were the Plan to terminate, different actuarial assumptions and other factors might be applicable in determining the Actuarial Present Value of Accumulated Plan Benefits.

F. 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 Stanford is below.

Valuation Date	Entry Age Normal Accrued Liability	Market Value Of Assets	Net Pension Liability
July 1, 2010	186,693,000	139,905,000	46,788,000
July 1, 2012	207,596,000	154,718,000	52,878,000

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 (Town/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)

G. 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 7/1/2012.

Participant Data				
	Active	Terminated Vested	Retired	Total
Total Participants 7/1/2010	279	1	285	565
Adjustments	0	0	0	0
Retirements	-16	0	16	0
Terminations				
Vested	0	0	N/A	0
Non-vested	0	N/A	N/A	0
Deaths				
Without death benefit	0	0	-15	-15
With death benefit	-1	0	-15	-16
New beneficiaries	N/A	0	16	16
Lump sum /cash outs	0	0	0	0
Rehires	0	0	0	0
New entrants	11	N/A	N/A	11
Total Participants 7/1/2012	273	1	287	561
Average age				
7/1/2010	45.2	42.0	68.0	
7/1/2012	45.9	44.0	68.1	
Average service				
7/1/2010	17.3			
7/1/2012	18.0			
Total annual plan salaries				
7/1/2010	$21,378,237			
7/1/2012	21,353,457			
Total annual benefits				
7/1/2010		$ 24,367	$9,390,820	
7/1/2012		24,367	10,437,173	

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

B. Actuarial Assumptions

Mortality: RP-2000 Blue Collar Combined - Generational Mortality Table (1983 Group Annuity Mortality Table in last valuation).

Mortality Improvement: Pre and Post-retirement: Projected to date of decrement using Scale AA (none in last valuation).

Investment Return: 7.75% per year (8.00% per year in last valuation).

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% used to project normal cost only (0% in last valuation).

Medicare Part B Reimbursements: 3% increase assumption each year (not valued last valuation).

Retirement Age: Sample rates of assumed annual rates of retirement after completion of 25 years are as follows:

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

An additional 50% is added upon attainment of 20 years of service and 100% of members remaining beyond the earlier of age 60 with 25 years of service or age 65 are assumed to retire.

III. Actuarial Cost Methods and Assumptions

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	.05%
25	.05%
30	.05%
35	.06%
40	.09%
45	.18%
50	.40%
55	.85%
60	1.74%

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

Expenses: None, administrative expenses are assumed to be paid directly by City.

Sick Bank and Vacation Bank: 50% of retirees are assumed to elect an annuity from the fund.

Post-Retirement Life Insurance: 100% of active and retired employees are assumed to have a $4,000 life insurance policy beginning at retirement.

IV. Summary of Current Principal Pension Plan Provisions

Pension Earnings:	Base Salary in Final Year of Employment plus 14 paid holidays.
Normal Retirement:	
Eligibility:	20 years of service
Benefit:	

Years of Service	% of Pension Earnings
20	50.00%
21	53.00%
22	56.00%
23	59.00%
24	62.00%
25	65.00%
26	67.33%
27	69.66%
28	71.99%
29	74.32%
30	76.65%

Limits on Annual Benefit:	
Maximum:	76.65% of pension earnings.
Minimum:	None.
Early Retirement:	
Eligibility:	None.
Benefit:	See Termination Benefit.
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).

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

Pre-Retirement Death Benefit – Non Service Connected:

Service Requirement:	10 years of service.
Benefit:	50% of salary.

Pre-Retirement Death Benefit – Service Connected:

Service Requirement:	None.
Benefit:	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.

Vesting in Accrued Benefit:

Eligibility:	10 years of service.
Benefit:	50% off final salary times the ratio of service at termination to 20 years. Benefit is payable when the officer 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:	7% of salary; no contributions for those with 30 or more years of service.
Additional Retirement Benefits:	Employees can trade in 50% of sick leave for additional pension credit. If an officer's sick bank has less than 200 days, unused vacation time may be added, subject to a maximum of 200 sick and unused vacation days combined. Each 20 days grants an additional 1.5% of salary up to a maximum of 7.5%.

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