

Town of East Hartford Pension Plan

Actuarial Valuation and Review as of July 1, 2014



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March 27, 2015

Mr. Joseph Carlson, Pension Board Chairman Town of East Hartford Pension Plan 740 Main Street East Hartford, CT 06108

Dear Mr. Carlson:

We are pleased to submit this Actuarial Valuation and Review as of July 1, 2014. It summarizes the actuarial data used in the valuation, analyzes the plan's experience from July 1, 2013 to June 30, 2014, and establishes the funding requirements for fiscal year ending June 30, 2016.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Pension Plan. The census information and financial information on which our calculations were based was prepared by the Town of East Hartford. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: 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); and changes in plan provisions or applicable law.

The actuarial calculations were directed under our supervision. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Pension Board are reasonably related to the experience of and the expectations for the Plan. We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By:

Ann D. Gineo, FSA, MAAA, EA Senior Vice President and Consulting Actuary

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Purpose

This report has been prepared by Segal Consulting to present a valuation of the Town of East Hartford Pension Plan as of July 1, 2014. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- > The benefit provisions of the Pension Plan, as administered by the Pension Board;
- > The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of July 1, 2014, provided by the Town;
- > The assets of the Plan as of June 30, 2014, provided by the Town;
- > Economic assumptions regarding future salary increases and investment earnings; and
- > Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- 1. This July 1, 2014 valuation is used to determine the annual recommended contribution for the fiscal year beginning July 1, 2015. As a dollar amount, the recommended contribution has increased over the 2014-2015 fiscal year calculation, from \$11,045,908 to \$11,879,286. As a percentage of pay, it has increased from 26.38% to 28.03%. The development of the recommended contribution is shown in this valuation report on page 10, and a detailed reconciliation of the change in the recommended contribution is on page 11. The allocation of the contribution by group is shown on page 18.
- 2. The actuarial valuation report as of July 1, 2014 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Unfavorable asset experience will increase the actuarial cost of the Plan, while favorable experience will decrease the actuarial cost of the Plan. For example, a 10% change in the current year's actuarial value of assets would produce a \$1,265,399 change in the recommended contribution level. Because the actuarial value of assets involves a smoothing method, a 10% change in market value would not be fully reflected immediately in the actuarial value of assets. Rather, that effect would be spread over a period of years. We have shown the full impact immediately so as to indicate the sensitivity of costs to market fluctuations.

Summary of Key Valuation Results

	2015	2014	2013
Funding elements for plan year beginning July 1:			
Normal cost, including administrative expenses		\$6,011,880	\$5,744,235
Actuarially determined contribution (ADC)*	\$11,879,286	\$11,045,908	\$10,186,709
Market value of assets**		214,455,200	190,161,061
Actuarial value of assets**		208,021,544	192,202,331
Actuarial accrued liability		354,218,887	330,793,117
Unfunded actuarial accrued liability		146,197,343	138,590,786
Demographic data for plan year beginning July 1:			
Number of retired participants, disabled participants and beneficiaries		650	623
Number of vested former participants		23	23
Number of active participants		620	643
Total pay		\$40,940,891	\$40,450,971
Average pay		66,034	62,910

* The 2015 ADC is determined in the current valuation. Prior to 2014, the ADC was known as the annual required contribution (ARC).

**Does not include DROP assets. This amount was also excluded from plan liabilities. As of July 1, 2014, the DROP account assets are \$4,955,972. As of July 1, 2013, the DROP assets were \$5,375,764.

A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, vested terminated participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups. More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

The Plan was closed to new entrants from the Town and Board of Education groups in 2006. Therefore, the active participant count has been declining over time, and as a result the ratio of non-actives to actives is increasing.

A historical perspective of how the participant population has changed over the past ten valuations can be seen in this chart.

CHART 1

Participant Population: 2005 – 2014

Active Participants	Vested Terminated Participants*	Retired Participants and Beneficiaries**	Ratio of Non-Actives to Actives
843	17	554	0.68
815	18	567	0.72
787	23	571	0.75
770	17	582	0.78
741	17	587	0.82
727	18	592	0.84
705	14	599	0.87
672	20	608	0.93
643	23	623	1.00
620	23	650	1.09
	Participants 843 815 787 770 741 727 705 672 643	ParticipantsParticipants*843178151878723770177411772718705146722064323	Participantsand Beneficiaries**843175548151856778723571770175827411758772718592705145996722060864323623

*Excludes terminated participants due a refund of employee contributions (88 in fiscal year ended June 30, 2014)

**Includes disabled participants (38 in fiscal year ended June 30, 2014)

Active Participants

Plan costs are affected by the age, years of benefit service and pay of active participants. In this year's valuation, there were 620 active participants with an average age of 49.1, average years of benefit service of 14.4 years and average pay of \$66,034. The 643 active participants in the prior valuation had an average age of 49.2, average benefit service of 14.2 years and average pay of \$62,910.

Inactive Participants

In this year's valuation, there were 23 participants with a vested right to a deferred or immediate vested benefit. In addition, there were 88 participants entitled to a return of their employee contributions.

These graphs show a distribution of active participants by age and by years of benefit service.

CHART 2

Distribution of Active Participants by Age as of June 30, 2014

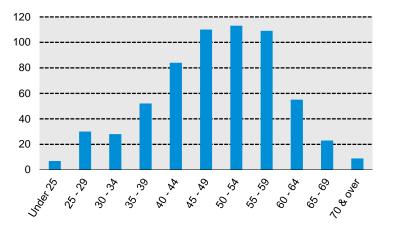
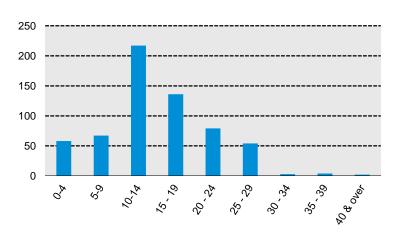


CHART 3

Distribution of Active Participants by Years of Benefit Service as of June 30, 2014



Retired Participants and Beneficiaries

As of June 30, 2014, 575 retired participants (including 38 disabled) and 75 beneficiaries were receiving total monthly benefits of \$1,629,758. For comparison, in the previous valuation, there were 550 retired participants and 73 beneficiaries receiving monthly benefits of \$1,513,684.

CHART 4

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distribution of the current retired participants based on their monthly amount and age, by type of pension.

These graphs show a

Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2014

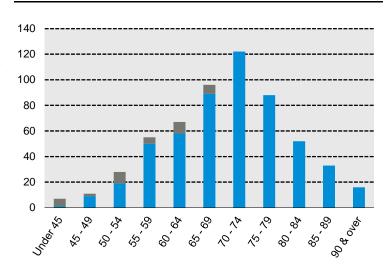


Regular



CHART 5

Distribution of Retired Participants by Type and by Age as of June 30, 2014



It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Pension Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable. The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value. For the plan year beginning July 1, 2014, there was an additional write-up to 97% of the market value of assets. As shown below, the actuarial value of assets was adjusted by \$4,129,863.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 6

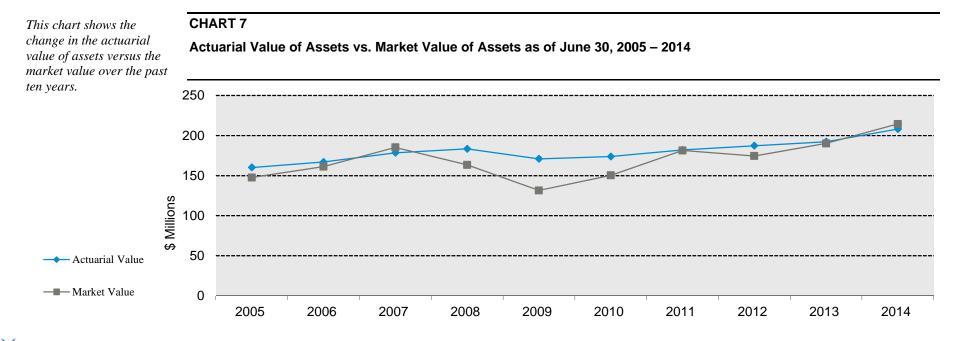
Determination of Actuarial Value of Assets for Year Ended June 30, 2014

1. Market value of assets, June 30, 2014			\$214,455,200
	Original	Unrecognized	
2. Calculation of unrecognized return	<u>Amount</u> *	Return**	
(a) Year ended June 30, 2014	\$14,164,859	\$11,331,887	
(b) Year ended June 30, 2013	8,887,183	5,332,310	
(c) Year ended June 30, 2012	-15,251,694	<u>-6,100,678</u>	
(d) Total unrecognized return			10,563,519
3. Preliminary actuarial value: (1) - (2d)			203,891,681
4. Additional one-time write-up of assets to 97% of market			4,129,863
5. Final actuarial value of assets as of June 30, 2014: (3) + (4)			\$208,021,544
6. Actuarial value as a percentage of market value: $(5) \div (1)$			97.0%
7. Amount deferred for future recognition: (1) - (5)			\$6,433,656

*Total return minus expected return on a market value

**Recognition at 20% per year over 5 years

Both the actuarial value and market value of assets are representations of the Plan's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Plan's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.



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B. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss is \$8,469,181, \$1,396,768 from investment gains and \$9,865,949 in losses from all other sources. The net experience variation from individual sources other than investments was 2.8% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past

CHART 8

Actuarial Experience for Year Ended June 30, 2014

1.	Net gain/(loss) from investments*	\$1,396,768
2.	Net gain/(loss) from administrative expenses	-42,949
3.	Net gain/(loss) from other experience	-9,823,000
4.	Net experience gain/(loss): $(1) + (2) + (3)$	-\$8,469,181

* Details in Chart 9

year.

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Plan's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.00%. The actual rate of return on an actuarial basis for the 2013/2014 plan year was 8.74%, while the market rate of return was 15.55%.

Since the actual return for the year was greater than the assumed return, the Plan experienced an actuarial gain during the year ended June 30, 2014 with regard to its investments.

This chart shows the gain/(loss) due to investment experience.

CHART 9

Actuarial Value Investment Experience for Year Ended June 30, 2014

1.	Actual return (AVA basis)	\$16,577,431
2.	Average value of assets	189,758,291
3.	Actual rate of return: $(1) \div (2)$	8.74%
4.	Assumed rate of return	8.00%
5.	Expected return: (2) x (4)	\$15,180,663
6.	Actuarial gain/(loss): $(1) - (5)$	<u>\$1,396,768</u>

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last ten years, including five-year and ten-year averages.

This chart shows a history of actuarial value and market value investment returns.

CHART 10

	Actuarial Value Inve	stment Return	Market Value Inv	estment Return	
Year Ended June 30	Amount	Percent	Amount	Percent	
2005	\$9,882,976	6.47%	\$15,299,193	11.33%	
2006	11,952,154	7.59	18,615,869	12.83	
2007	15,696,700	9.52	28,189,382	17.72	
2008	9,975,120	5.67	-16,658,929	-9.12	
2009	-7,244,535	-4.01*	-26,780,198	-16.65	
2010	8,035,980	4.77	24,076,138	18.68	
2011	13,936,901	8.16	36,693,049	24.88	
2012	11,562,844	6.47	-551,766	-0.31	
2013	11,850,003	6.45**	22,570,696	13.20	
2014	<u>20,707,294</u>	10.91**	29,182,221	15.55	
Total	\$94,001,900		\$117,702,444		
	Five-year geometric average	7.33%		14.08%	
	Ten-year average return	6.13%		8.03%	

Investment Return – Actuarial Value vs. Market Value: 2005 – 2014

Note: Each year's yield is weighted by the average asset value in that year.

*Includes effect of widening the corridor around the market value in the actuarial asset method from 20% to 30%.

**Includes effect of a change in asset method.



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Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- > the extent of turnover among the participants,
- > retirement experience (earlier or later than expected),
- > mortality (more or fewer deaths than expected),
- > the number of disability retirements, and
- > salary increases different than assumed.

The net loss from this other experience for the year ended June 30, 2014 amounted to \$9,823,000, which is 2.8% of the actuarial accrued liability. This is mainly due to higher than expected salary increases and fewer deaths than expected.

C. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded/(overfunded) actuarial accrued liability. This total amount is then divided by the projected pay for active members to determine the funding rate of 28.03% of pay.

The unfunded actuarial accrued liability is amortized on a level percent basis, with 3.5% annual increases in the payments anticipated. This methodology is generally tied to payroll with the contribution expected to remain constant as a percentage of pay. Payroll is decreasing, since the Plan is partially closed to new entrants. Thus the

recommended contribution will increase as a percentage of pay over time, if all assumptions are met.

The recommended contribution is based on an amortization schedule adopted by the Town. As of July 1, 2013, the amortization period was reset to 30 years. There are 29 years remaining as of July 1, 2014.

The valuation results are used to determine the contributions for the subsequent fiscal year, and thus the recommended contribution is projected for a full year in the chart below.

The chart compares this valuation's recommended contribution with the prior valuation.

CHART 11

Recommended Contribution

		Year Beginn	ing July 1	
	2014	4	2013	3
	Amount	% of Pay	Amount	% of Pay
1. Total normal cost	\$5,819,430	14.21%	\$5,580,652	13.80%
2. Administrative expenses	192,450	0.47%	163,583	0.40%
3. Expected employee contributions	-3,126,783	<u>-7.64%</u>	-3,080,277	<u>-7.61%</u>
4. Employer normal cost: $(1) + (2) + (3)$	\$2,885,097	7.04%	\$2,663,958	6.59%
5. Actuarial accrued liability	354,218,887		330,793,117	
6. Actuarial value of assets	208,021,544		<u>192,202,331</u>	
7. Unfunded actuarial accrued liability: (5) - (6)	\$146,197,343		\$138,590,786	
8. Payment on unfunded actuarial accrued liability	8,592,474		8,008,417	
9. Total Town cost	11,477,571	28.03%	10,672,375	26.38%
10. Total pay	40,940,891		40,450,971	
 Recommended contribution* for plan years ending June 30, 2016 and June 30, 2015 	<u>\$11,879,286</u>		<u>\$11,045,908</u>	

The contribution requirements as of July 1, 2014 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Contribution

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 12

Reconciliation of Recommended Contribution from July 1, 2014 to July 1, 2015

Recommended Contribution as of July 1, 2014	\$11,045,908
Effect of asset write-up	-251,220
Effect of expected change in amortization payment (3.5% increase)	290,105
Effect of change in administrative expense assumption	29,878
Effect of change in other actuarial assumptions	0
Effect of investment gain	-84,966
Effect of other gains and losses on accrued liability	580,000
Net effect of other changes	<u>269,581</u>
Total change	<u>\$833,378</u>
Recommended Contribution as of July 1, 2015	\$11,879,286

EXHIBIT A

Table of Plan Coverage

	Year End	ed June 30	_ Change From Prior Year	
Category	2014	2013		
Active participants in valuation:				
Number	620	643	-3.6%	
Average age	49.1	49.2	N/A	
Average years of benefit service	14.4	14.2	N/A	
Projected total pay	\$40,940,891	\$40,450,971	1.2%	
Projected average pay	66,034	62,910	5.0%	
Account balances	43,468,162	42,488,167	2.3%	
Total active vested participants	472	464	1.7%	
Vested terminated participants	23	23	0.0%	
Retired participants:				
Number in pay status	537	514	4.5%	
Average age	71.2	71.3	N/A	
Average monthly benefit	\$2,623	\$2,540	3.3%	
Disabled participants:				
Number in pay status	38	36	5.6%	
Average age	56.6	56.6	N/A	
Average monthly benefit	\$2,676	\$2,720	-1.6%	
Beneficiaries in pay status:				
Number in pay status	75	73	2.7%	
Average age	77.6	76.5	N/A	
Average monthly benefit	\$1,590	\$1,512	5.2%	
Inactive non-vested participants	88	90	-2.2%	

EXHIBIT B

Participants in Active Service as of June 30, 2014 By Age, Years of Benefit Service, and Average Pay

					Years of Be	enefit Servi	се			
Age	Total	0-4	5-9	10-14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over
Under 25	7	7								
	\$55,853	\$55,853								
25 - 29	30	26	4							
	61,568	65,166	38,183							
30 - 34	28	8	8	11	1					
	68,966	53,201	74,063	73,785	101,309					
35 - 39	52	5	14	25	7	1				
	68,372	54,333	69,444	68,347	77,587	59,669				
40 - 44	84	3	6	25	38	12				
	83,572	40,001	40,083	79,435	88,896	107,972				
45 - 49	110	4	8	27	29	30	12			
	79,446	47,768	29,962	55,689	89,949	101,192	96,706			
50 - 54	113	4	11	37	22	17	20	1	1	
	64,158	18,607	42,356	45,175	68,412	85,496	92,341	160,456	72,252	
55 - 59	109		6	52	24	10	13	2	2	
	55,495		39,335	43,238	57,940	67,153	81,225	76,649	146,628	
60 - 64	55	1	6	21	13	6	6		1	1
	51,704	28,152	24,449	39,642	59,674	68,905	71,581		95,998	121,715
65 - 69	23		3	13	2	2	2			1
	42,334		32,517	33,037	68,025	58,734	44,948			103,228
70 & over	9		1	6		1	1			
	37,897		60,468	23,825		49,334	88,320			
Total	620	58	67	217	136	79	54	3	4	2
	\$66,034	\$55,107	\$47,825	\$52,233	\$76,753	\$89,826	\$86,499	\$104,584	\$115,377	\$112,472

EXHIBIT C

Reconciliation of Participant Data

	Active Participants	Vested Former Participants	Inactive Non- Vested Participants	Disabled	Retired Participants	Beneficiaries	Total
Number as of July 1, 2013	643	23	90	36	514	73	1,379
New participants	22	N/A	0	N/A	0	N/A	22
Terminations – with vested rights	-4	4	0	0	0	0	0
Terminations – without vested rights	-5	N/A	5	N/A	N/A	N/A	0
Retirements	-29	-4	0	N/A	33	N/A	0
New disabilities	-3	0	0	3	0	N/A	0
Deceased	-1	0	0	-1	-11	-2	-15
New Beneficiaries	0	0	0	0	0	5	5
Lump sum payoffs	-3	0	-7	0	0	0	-10
Certain period expired	0	0	0	0	0	-1	-1
Data adjustments	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>1</u>
Number as of July 1, 2014	620	23	88	38	537	75	1,381

EXHIBIT D

Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended J	une 30, 2014	Year Ended J	une 30, 2013
Net assets at market value at the beginning of the year		\$190,161,061		\$174,497,468
Contribution income:				
Employer contributions	\$10,251,091		\$9,371,591	
Employee contributions	3,233,330		3,201,993	
Less administrative expenses	-203,350		<u>-169,296</u>	
Net contribution income		\$13,281,071		\$12,404,288
Investment income:		\$29,182,221		\$22,570,696
Total income available for benefits		\$42,463,292		\$34,974,984
Less benefit payments:		-\$18,169,153		-\$19,311,391
Change in reserve for future benefits		\$24,294,139		\$15,663,593
Net assets at market value at the end of the year		\$214,455,200		\$190,161,061

Note: Above figures do not include the DROP

EXHIBIT E

Development of the Fund Through June 30, 2014

Year Ended June 30	Employer Contributions	Employee Contributions	Other Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
2005	\$5,219,000	\$2,626,000	\$0	\$9,882,976	\$158,000	\$12,910,000	\$160,101,612
2006	5,321,000	2,803,000	1,277	11,952,154	139,000	13,041,000	166,999,043
2007	6,759,000	3,073,000	0	15,696,700	136,000	13,925,000	178,466,743
2008	7,175,658	3,391,062	0	9,975,120	430,790	15,254,845	183,322,948
2009	7,407,017	3,243,280	0	-7,244,535	197,387	15,608,801	170,922,521
2010	8,180,360	3,069,803	0	8,035,980	121,327	16,322,847	173,764,491
2011	8,450,588	3,202,897	0	13,936,902	168,672	17,226,184	181,960,021
2012	9,206,982	3,166,597	0	11,562,844	173,328	18,463,685	187,259,431
2013	9,371,591	3,201,993	0	11,850,003	169,296	19,311,391	192,202,331
2014	10,251,091	3,233,330	0	20,707,294	203,350	18,169,153	208,021,544

* Net of investment fees

Note: Above figures do not include the DROP.

EXHIBIT F

Development of Unfunded/(Overfunded) Actuarial Accrued Liability for Year Ended June 30, 2014

1.	Unfunded actuarial accrued liability at beginning of year	\$138,590,786	
2.	2. Normal cost at beginning of year, including expense load 5		
3.	Employer contributions	-10,251,091	
4.	Employee contributions	-3,233,330	
5.	Interest at 8.00%		
	(a) For whole year on $(1) + (2)$ \$11,546,80	2	
	(b) For half year on $(3) + (4)$ <u>-539.37</u>	<u>7</u>	
	(c) Total interest	<u>11,007,425</u>	
5.	Expected unfunded/(overfunded) actuarial accrued liability	\$11,858,025	
6.	Changes due to:		
	(a) Net experience loss \$8,469,18	1	
	(b) Assumption changes	0	
	(c) Method changes (AVA write-up) -4,129,86	3	
	(d) Total changes	4,339,318	
7.	Unfunded/(overfunded) actuarial accrued liability at end of year	<u>\$146,197,343</u>	



EXHIBIT G

Allocation of Contributions for Fiscal Year Ending June 30, 2016

	Town and Board of Education	Police	Fire	Para- professionals	Dispatchers	Total
1. a.) Total normal cost	\$1,553,621	\$1,668,741	\$2,208,244	\$272,757	\$116,067	\$5,819,430
b.) Administrative expenses*	87,103	33,744	37,036	30,589	3,978	192,450
c.) Projected employee contributions	1,107,591	720,625	988,272	205,417	104,877	3,126,782
d.) Employer normal cost: $(a) + (b) - (c)$	\$533,133	\$981,860	\$1,257,008	\$97,929	\$15,168	\$2,885,098
2. Actuarial accrued liability						
a.) Active	\$48,115,137	\$37,957,996	\$56,964,108	\$4,636,393	\$2,673,460	\$150,347,094
b.) Inactive vested	1,538,234	238,576	83,179	466,308	126,415	2,452,712
c.) Retirees, beneficiaries and disabled	70,150,207	69,849,868	60,378,810	679,479	360,717	201,419,081
d.) Total AAL: $(a) + (b) + (c)$	\$119,803,578	\$108,046,440	\$117,426,097	\$5,782,180	\$3,160,592	\$354,249,999
3. Assets at smoothed value	70,356,851	63,452,255	68,960,631	3,395,691	1,856,116	208,021,544
4. Unfunded accrued liability: (2d) – (3)	49,446,727	44,594,185	48,465,466	2,386,489	1,304,476	146,197,343
5. Payment on unfunded accrued liability (29-year amortization, effective interest rate 4.35%)						
a.) Payment	\$2,906,139	\$2,620,939	\$2,848,467	\$140,261	\$76,668	\$8,592,474
b.) Amortization Years	29	29	29	29	29	29
c.) Interest Rate	4.35%	4.35%	4.35%	4.35%	4.35%	4.35%
6. Annual Cost as of July 1, 2014: (1d) + (5)	\$3,439,272	\$3,602,799	\$4,105,475	\$238,190	\$91,836	\$11,477,572
7. Payroll	14,291,762	9,007,809	12,906,740	3,423,613	1,310,967	40,940,891
8. Cost as % of Payroll	24.06%	28.90%	31.80%	6.95%	7.05%	28.03%
9. Recommended Contribution for Fiscal Year ending June 30, 2016						
a.) Normal cost and expenses	\$551,793	\$1,016,224	\$1,301,002	\$101,357	\$15,699	\$2,986,075
b.) Amortization payment	3,007,853	2,712,673	2,948,164	145,170	79,351	8,893,211
c.) Recommended Contribution payable July 1, 2015	<u>\$3,559,646</u>	<u>\$3,728,897</u>	<u>\$4,249,166</u>	<u>\$246,527</u>	<u>\$95,050</u>	<u>\$11,879,286</u>



*Allocated based on number of participants

of time.

EXHIBIT H

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader: **Assumptions or Actuarial Assumptions:** The estimates on which the cost of the Plan is calculated including: Investment return — the rate of investment yield that the Plan will earn over (a) the long-term future; Mortality rates — the death rates of employees and pensioners; life (b) expectancy is based on these rates; <u>Retirement rates</u> — the rate or probability of retirement at a given age; (c) (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement. Normal Cost: The amount of contributions required to fund the benefit allocated to the current year of service. **Actuarial Accrued Liability** For Actives: The value of all projected benefit payments for current members less the portion that will be paid by future normal costs. Actuarial Accrued Liability The single-sum value of lifetime benefits to existing pensioners. This sum takes For Pensioners: account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits. **Unfunded Actuarial Accrued** Liability: The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period

SECTION 3: Supplemental Information for the Town of East Hartford Pension Plan

Amortization of the Unfunded Actuarial Accrued Liability:	Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.
Investment Return:	The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

EXHIBIT I

Summary of Actuarial Valuation Results

Tł	e valuation was made with respect to the following data supplied to us:		
1.	Retired participants as of the valuation date (including 75 beneficiaries in pay status)		
2.	Participants inactive during year ended June 30, 2014 with vested rights		23
3.	Participants active during the year ended June 30, 2014		620
	Fully vested	472	
	Not vested	148	
4.	Inactive non-vested participants as of June 30, 2014		88
Tł 1.	e actuarial factors as of the valuation date are as follows: Gross normal cost, including administrative expenses		\$6,011,880
2.	Actuarial accrued liability		354,218,887
	Retired participants and beneficiaries	\$201,419,081	
	Inactive participants with vested rights	1,981,681	
	A stive participants	150,347,094	
	Active participants	150,547,074	
	Inactive non-vested participants	471,031	
3.		, ,	208,021,544

EXHIBIT II

History of Employer Contributions

Plan Year Ended June 30	Actuarially Determined Employer Contributions (ADEC)*	Actual Contributions	Percentage Contributed
2006	\$5,321,154	\$5,321,154	100.0%
2007	6,496,087	6,759,087	104.0%
2008	7,147,444	7,175,658	100.4%
2009	7,407,015	7,407,017	100.0%
2010	8,188,649	8,180,360	99.9%
2011	8,434,252	8,450,588	100.2%
2012	9,206,982	9,206,982	100.0%
2013	9,330,687	9,371,591	100.4%
2014	10,186,709	10,251,091	100.6%
2015	11,045,908		
2016	11,879,286		

*Prior to 2014, this amount was the Annual Required Contribution (ARC)

EXHIBIT III

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
07/01/2005	\$160,101,612	\$205,159,143	\$45,057,531	78.04%	\$42,313,564	106.48%
07/01/2006	166,999,043	217,546,261	50,547,218	76.76%	41,608,662	121.48%
07/01/2007	178,466,743	227,288,386	48,821,643	78.52%	41,758,749	116.91%
07/01/2008	183,322,948	238,447,108	55,124,160	76.88%	41,999,715	131.25%
07/01/2009	170,922,522	250,681,901	79,759,379	68.18%	41,055,544	194.27%
07/01/2010	173,764,491	261,203,500	87,439,009	66.52%	41,404,040	211.18%
07/01/2011	181,960,021	269,046,695	87,086,674	67.63%	42,373,777	205.52%
07/01/2012	187,259,431	293,268,287	106,008,856	63.85%	41,163,691	257.53%
07/01/2013	192,202,331	330,793,117	138,590,786	58.10%	40,450,971	342.61%
07/01/2014	208,021,544	354,218,887	146,197,343	58.73%	40,940,891	357.09%

EXHIBIT IV

Actuarial Assumptions and Actuarial Cost Method

Mortality Rates:

Males:	RP-2000 Combined Healthy Mortality Table with Blue Collar Adjustment, projected 14 years with Scale BB
Females:	RP-2000 Combined Healthy Mortality Table, projected 14 years with Scale BB
	The above mortality tables were determined to contain a margin of about 10% to reasonably reflect future mortality improvement, based on a five-year review of mortality experience ended June 30, 2013.

Termination rates before retirement (unisex unless otherwise noted):

	Rate (%)						
	Mortality		Disability	y	Witho	drawal	
Age	Male	Female	General Employees and Dispatchers	Police and Fire	General Employees and Dispatchers	Paraprofessionals	
20	0.03	0.02	0.02	0.06	10.41	36.38	
25	0.04	0.02	0.03	0.09	6.31	21.02	
30	0.07	0.03	0.03	0.11	4.54	14.41	
35	0.10	0.05	0.04	0.15	3.50	10.54	
40	0.13	0.07	0.07	0.22	2.77	7.80	
45	0.17	0.11	0.11	0.36	2.20	5.67	
50	0.23	0.16	0.18	0.61	1.74	3.93	
55	0.40	0.25	0.30	1.01	1.34	2.46	
60	0.75	0.44	0.49	1.63	1.00	1.19	

Note: Paraprofessionals are not eligible for disability benefits, and therefore have no disability assumption separate from the withdrawal rates.

Withdrawal rates for Police and Fire:	2.50% per year for the first 10 years of service; none thereafter
Service-related benefits:	75% of Police and Fire deaths and disabilities are assumed to be service-related. For the other groups, no service-related decrements are assumed.

Retirement rates:	General E	mployees	Paraprofe	essionals
	Age	Rate*	Age	Rate
	Under 55	0%	Under 65	0%
	55 – 59	2%	65-69	40%
	60 - 61	5%	70	100%
	62 - 63	10%		
	64	25%		
	65 - 69	30%		
	70	100%		

*If age is less than 65, rates are increased to 25% upon eligibility for the Rule of 85.

Police Employees		Fire Employees	
Years of Service	Rate*	Years of Service	Rate*
Less than 25	0%	Less than 25	0%
25	90%	25	25%
26-29	2%	26-29	2%
30+	35%	30+	35%

*Rate increases to 100% upon attainment of age 65.

Retirement rates for Dispatchers:	100% upon first becoming eligible for Normal Retirement, but not prior to age 62	
Retirement Age for Inactive		
Vested Participants:	Age 62; Age 65 for Paraprofessionals	
Percent married:	75% of male participants and 65% of female participants are assumed to be married.	
Age of spouse:	Females three years younger than males	

Net investment return 8.00%

Salary Increases:

General, Dis Paraprofession		Police and F	ire Employees
Age	Rate*	Age	Rate*
20	6.50%	20	22.00%
25	5.75%	25	14.50%
30	5.00%	30	7.00%
35	4.25%	35	4.00%
40	3.50%	40	4.00%
45	3.50%	45	4.00%
50	3.50%	50	4.00%
55	3.50%	55	4.00%
60	3.50%	60	4.00%
00	5.50%	00	4.00%

*Includes allowance for inflation of 3.50% per year

Liability load for unused sick and vacation pay:

To approximate the effect of including unused sick and vacation pay in the final average salary, plan liabilities are increased by the percentages listed below:

	Retirement <u>Liability</u>	Death <u>Liability</u>	Disability <u>Liability</u>	Withdrawal <u>Liability</u>
General Employees and Dispatchers hired before 12/01/1996	14.0%	6.0%	6.0%	2.0%
General Employees and Dispatchers hired on or after 12/01/1996	3.0%	2.0%	2.0%	2.0%
Fire hired before 01/01/1995	15.0%	12.0%	12.0%	2.0%
Fire hired on or after 01/01/1995	0.0%	0.0%	0.0%	0.0%
Police	13.5%	10.0%	10.0%	2.0%
Paraprofessionals	0.0%	0.0%	0.0%	0.0%



Administrative expenses:	\$200,000 per year, added to normal cost, equivalent to \$192,450 at the beginning of the year.	
Actuarial Value of Assets:	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value. On July 1, 2014, there was a one-time write-up to 97% of the market value of assets.	
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.	
Changes in assumptions and methods:	 The following is a summary of the assumption and method changes reflected in this report: The administrative expense assumption was increased from \$170,000 to \$200,000 per year. The actuarial value of assets reflects a one-time write-up to 97% of the market 	

EXHIBIT V

Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Status:	Closed to new entrants		
Plan Year:	July 1 through June 30		
Normal retirement:			
Eligibility requirement	For employees hired prior to March 1, 1983, the later of age 62 and 8 years of service. For employees hired on or after March 1, 1983, the later of age 65 and the completion of 10 years of service, or age 62 and the completion of 25 years of service if earlier.		
Amount	2.333% of final average salary per year of service to a maximum of 70% of final average salary. Final average salary is defined as the average of salary earned during the highest 36 consecutive months of employment based upon the Plan Year prior to termination. Final average salary includes a lump sum amount for unused vacation (40 days maximum) and sick leave (90 days maximum) at retirement for those hired prior to December 1, 1996. For employees hired on or after December 1, 1996, final average salary includes a lump sum amount for unused vacation pay (40 days maximum) only. Minimum monthly benefit is \$125 after 20 years of service.		
Early retirement:			
Age requirement	For employees hired prior to March 1, 1983: age 52. For employees hired on or after March 1, 1983: age 55.		
Service requirement	For employees hired prior to March 1, 1983: 8 years. For employees hired on or after March 1, 1983: 10 years.		
Amount	Normal accrued pension reduced by 0.4167% for each month of age less than normal retirement age.		
	In addition, unreduced benefits are available upon meeting the Rule of 85.		

General Employees (Town & Board of Education)

SECTION 4:	Reporting Information for the Town of East Hartford Pension Plan
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Ger	neral Employees (Town & Board of Education) continued
Non-service connected disabili	ty:
Age requirement	None
Service requirement	10 years
Amount	2.333% of final average salary multiplied by years and full months of credited service, payable immediately.
Service connected disability:	
Age requirement	None
Service requirement	None
Amount	50% of final average salary or annual pay (whichever is greater) plus 2.333% of such salary for each year of service in excess of 25 years, subject to a maximum pension of 70% of final average salary, payable immediately. Payments from this benefit plus Workers' Compensation and Social Security may not exceed 100% of final average salary at disability.
Vesting:	
Age requirement	None
Service requirement	For employees hired prior to March 1, 1983: 8 years. For employees hired on or after March 1, 1983: 10 years.
Amount	For employees hired prior to March 1, 1983: normal pension accrued payable at age 62, or a reduced early retirement benefit accrued payable as early as age 52. For employees hired on or after March 1, 1983: normal pension accrued payable at age 65 or a reduced early retirement benefit payable as early as age 55.
Termination benefit	Return of contributions with interest if not vested, or if vested, employee does not elect to receive a retirement benefit.

Gener	al Employees (Town & Board of Education) continued	
Spouse's Pre-retirement death benefit:		
Age requirement	None	
Service requirement	10 years and active participant	
Amount	80% of the benefit employee would have received upon retirement with a life annuity the day before the employee died. The benefit is payable immediately.	
Pre-retirement death benefit:		
Eligibility	Not eligible for Spouse's pre-retirement death benefit	
Amount	Return of employee contributions	
Post-retirement death benefit:		
Amount	100% of employee contributions, with interest, less benefits paid.	
Employee contributions:	8% of regular compensation. No contributions are required after 30 years of plan participation. Interest on employee contributions is credited at 4.00% per year.	
Cost-of-Living:	Retirees and beneficiaries who retired prior to January 1, 1991 receive a 2% annual cost of living increase each year.	
	Retirees and beneficiaries who retired on or after January 1, 1991 but prior to January 1, 2002 receive a 1% annual cost-of-living increase each year.	
	Retirees and beneficiaries who retired on a Disability Pension after December 1, 1996 and prior to December 31, 2005 receive a 1% annual cost-of-living increase each year.	
	Participants retiring after July 1, 2005 receive a 2% annual cost-of-living increase; the first increase is paid with the January payment that is five full years after retirement.	

General Employees (Town & Board of Education) continued

Participation:	The plan was closed to new entrants on July 1, 2006.
Plan Changes:	There were no plan changes made for this valuation.



SECTION 4:	Reporting Information for the Town of East Hartford Pension Plan
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Paraprofessional Employees	
Plan Status:	Ongoing
Plan Year:	July 1 through June 30
Normal retirement:	
Eligibility requirement	The earliest of the following conditions:
	(1) attainment of age 65 and completion of 10 Years of Credited Service;
	(2) attainment of age 62 and completion of 25 Years of Credited Service; or
	(3) the Rule of 85.
Amount	2.2% of the employee's final average salary multiplied by the number of years and full months of his or her Credited Service, not to exceed 70% of the employee's final average salary. Final average salary is defined as the average of salary earned during the highest 36 consecutive months of employment based upon the Plan Year prior to termination. Lump sum payouts of sick and vacation pay are <u>not</u> included in the calculation of final average salary.
Vesting:	
Age requirement	None
Service requirement	10 years
Amount	Monthly benefit payable at Normal Retirement. An employee is also 100% vested upon attainment of age 65 with five or more years of plan participation.
Termination benefit	Return of contributions with interest if not vested, or if vested employee does not elect to receive a retirement benefit.
Pre-retirement death benefit:	Return of employee contributions with interest

	Paraprofessional Employees continued
Post-retirement death benefit:	Return of employee contributions, with interest, less benefits paid.
Employee contributions:	6% of regular compensation. Contributions are no longer required after 31 years and 10 months of plan participation. Interest on employee contributions is credited at 4.00% per year.
Participation:	Paraprofessionals become participants in the plan upon date of hire. Participation is a condition of employment and participants are required to make contributions to the plan.
Plan changes:	There were no plan changes made for this valuation.

Dispatchers	
Plan Status:	Ongoing
Plan Year:	July 1 through June 30
Normal Retirement:	
Eligibility requirement	The earliest of the following conditions:
	(1) attainment of age 65 and completion of 5 Years of Credited Service;
	(2) 25 years of Credited Service; or
	(3) Rule of 75.
Amount	2.2% of final average salary multiplied by years and full months of Credited Service, not to exceed 70% of final average salary. Final average salary is the average of salary during the highest 36 consecutive months of employment based upon the Plan Year prior to termination. Final average salary includes a lump sum amount for unused vacation (40 days maximum) and sick leave (90 days maximum) at retirement for those hired prior to December 1, 1996. For employees hired on or after December 1, 1996, final average salary includes only a lump sum amount for unused vacation pay (40 days maximum).
Early retirement:	
Age requirement	55
Service requirement	5 years
Amount	Normal accrued pension, reduced by 0.4167% for each month of age less than normal retirement age.

Dispatchers <i>continued</i>	
Vesting:	
Age requirement	None
Service requirement	5 years
Amount	Monthly benefit payable at Normal Retirement.
Termination benefit	Return of contributions with interest if not vested, or if vested employee does not elect to receive a retirement benefit.
Non-service connected disability	y:
Age Requirement	None
Service Requirement	5 years
Amount	2.2% of final average salary multiplied by years and full months of credited service, payable immediately.
Service connected disability:	
Age Requirement	None
Service Requirement	None
Amount	50% of final average salary or annual rate of pay, whichever is greater, plus 2.2% of such salary for each year of service in excess of 25 years, subject to a maximum pension of 70% of final average salary, payable immediately. Payments from this benefit plus Workers' Compensation and Social Security may not exceed 100% of final average salary at disability.

Dispatchers continued		
Spouse's pre-retirement death benefit:		
Age Requirement	55	
Service Requirement	5 years, die while in active service	
Amount	100% of the benefit employee would have received upon retirement with a 100% Joint and Survivor the day before death.	
Pre-retirement death for unmarried or non-vested participants:	Return of employee contributions with interest	
Post-retirement death benefit:		
Amount	100% of employee contributions, with interest, less benefits paid.	
Employee contributions:	8% of regular compensation. Contributions are no longer required after 31 years and 10 months of plan participation. Interest on employee contributions is credited at 4.00% per year.	
Participation:	New employees under age 45 are required to participate in the plan within three months of employment. New employees over age 45 are not required to participate, but must elect to do so within two years of their date of hire.	
Plan Changes	There were no plan changes for this valuation.	

★ Segal Consulting

Police and Fire Employees	
Plan Status:	Ongoing
Plan Year:	July 1 through June 30
Normal retirement:	
Eligibility requirement	25 years of service regardless of age, or mandatory retirement at age 65 with the completion of 10 years of service for Fire and 15 years of service for Police.
Amount	
Police Plan:	2.5% of final average salary per year of service, to a maximum of 75% of final average salary. Final average salary is defined as the average of salary earned during the highest 36 consecutive months of employment based upon the Plan Year prior to termination. Final average salary includes a lump sum amount for unused vacation and sick leave at retirement. The minimum monthly benefit is \$125.
Fire Plan:	Same as Police except that a lump sum amount for unused vacation and sick leave is <u>not</u> included in the calculation of final average salary if the employee was hired on or after January 1, 1995.
Non-service connected disability:	
Age requirement	None
Service requirement	5 years
Amount	Normal pension based on service accrued and final average salary at disability, payable immediately. The minimum benefit is 20% of final average salary.

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	Police and Fire Employees <i>continued</i>
Service connected disability:	
Age requirement	None
Service requirement	None
Amount	For employees with fewer than 20 years of credited service, 50% of the greater of the employee's final average salary or regular compensation. For employees with 20 or more years of credited service, this benefit is calculated in the same manner as the normal retirement benefit. Payments from this benefit plus Workers' Compensation may not exceed 100% of final average salary at disability. For <i>Police</i> only, regular compensation includes any lump sum of sick or unused vacation time.
Vesting:	
Age requirement	None
Service requirement	Police: 15 years
	Fire: 10 years
Amount	Normal pension accrued, payable when employee would have met normal retirement criteria if he/she had continued working.
Termination benefit	Return of contributions with interest if not vested.
Dependent's benefit – Non-servi	ce connected:
Age Requirement	None
Service Requirement	5 years, die while in active service

benefit is 20% of final average salary.

with interest

Normal pension based on service accrued and final average salary at death. Minimum

If a participant passes away before becoming vested, return of employee contributions

Police and Fire Employees continued

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Amount

Dependent's benefit – Service connected:

Age Requirement	None
Service Requirement	None, die while in active service
Amount	Same as above, except 50% minimum benefit.
Post-retirement death benefit:	
Lump - sum benefit	100% of employee contributions, with interest, less benefits paid (if dependent's benefit is not paid).
Dependent's benefit	75% of the pension the employee was receiving with a minimum guarantee of the employee contributions with interest.
Employee contributions:	8% of regular compensation. No contributions are required after 30 years of plan participation. Interest on employee contributions is credited at 4.00% per year.
Cost-of-Living:	
Police Plan only:	2% per year for participants retiring after January 1, 2000. The first increase is paid in the fifth year of retirement.
Fire Plan only:	1% annual increase beginning in the fifth year of retirement, increasing to 2% annually beginning in the 9 th year of retirement for participants retiring after July 1, 2005.
Both Fire and Police:	Retirees and beneficiaries who retired prior to January 1, 1991 receive a 2% annual cost-of-living increase each year. Retirees and beneficiaries who retired on or after January 1, 1991 but prior to January 1, 2002 receive a 1% annual cost-of-living increase each year. (The 2% Police COLA supersedes the 1% for retirees and beneficiaries who retired in 2000 or 2001.)
Participation:	New employees under age 45 are required to participate in the Plan within three months of employment. New employees over age 45 are not required to participate, but must elect to do so within two years of their date of hire.

Police and Fire Employees continued

Plan Changes:

There were no plan changes for this valuation.

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