



CITY OF MERIDEN EMPLOYEES' RETIREMENT SYSTEM

ACTUARIAL VALUATION REPORT

JULY 1, 2016



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## Executive Summary

	July 1, 2016	July 1, 2014
<b>Number of members</b>		
Active employees	531	598
Terminated vested members	34	29
Vested in employee contributions only	73	64
Retired, disabled and beneficiaries	486	459
Total	1,124	1,150
<b>Covered employee payroll</b>	34,465,270	37,477,862
<b>Average plan salary</b>	64,906	62,672
<b>Actuarial present value of future benefits</b>	220,158,069	208,422,538
<b>Actuarial accrued liability</b>	183,814,979	165,531,186
<b>Plan assets</b>		
Market value of assets	131,835,469	142,902,773
Actuarial value of assets	158,672,766	154,906,580
<b>Unfunded accrued liability</b>	25,142,213	10,624,606
<b>Funded ratio</b>	86.3%	93.6%
<b>Actuarially determined employer contribution (ADEC)</b>		
Fiscal year ending	2018	2016
ADEC	4,044,454	3,218,884
Fiscal year ending	2019	2017
ADEC	4,044,454	3,284,920



## Valuation Results and Highlights

### Purpose of the Valuation

The purpose of the valuation is to develop the Actuarially Determined Employer Contribution (ADEC).

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,

$$\text{Ultimate cost} = \text{Benefits Paid} + \text{Expenses Incurred} - \text{Investment Return} - \text{Employee Contributions}$$

The actuarial cost method distributes this ultimate cost over the working lifetime of current plan participants. By means of this budgeting process, costs are allocated to both past and future years, and a cost is assigned to the current year. The current year's allocated cost, or normal cost, is the building block upon which the actuarially determined employer contribution is developed. The July 1, 2016 valuation produces the contributions for the fiscal years ending 2018 and 2019.

### Information Available in the Valuation Report

The Executive Summary is intended to emphasize the notable results of the valuation from the perspective of the Plan Sponsor. Supporting technical detail is documented in Results of the Valuation, Supporting Exhibits and Description of Actuarial Methods and Assumptions. A concise summary of the principal provisions of the Plan is outlined in Summary of Plan Provisions.

### Changes Reflected in the Valuation

The proposed assumption changes in the Experience Study published on November 23, 2016 were adopted and reflected in this report. In addition, the investment rate of return assumption decreased from 8.00% to 7.75%.

### Cash Contribution for Fiscal Years Ending 2018 and 2019

The City cost is:	2018 Fiscal Year	2019 Fiscal Year
City	\$2,813,954	\$2,813,954
Fire	501,518	501,518
Police	728,982	728,982
Total	\$4,044,454	\$4,044,454

### Liability Experience During Period Under Review

The plan experienced a net actuarial loss on liabilities of \$2,769,957 since the prior valuation.



### Asset Experience During Period Under Review

The plan's assets provided the following rates of return during the past two fiscal years:

	2015 Fiscal Year	2016 Fiscal Year
Market Value Basis	0.8%	-2.4%
Actuarial Value Basis	5.0%	3.7%

The Actuarial Value of assets, rather than the Market Value, is used to determine plan contributions. The Actuarial Value spreads the asset volatility by recognizing 20% of the difference each year, thereby smoothing out fluctuations that are inherent in the Market Value.



## Certification

This report presents the results of the July 1, 2016 Actuarial Valuation for City of Meriden Employees' Retirement System (the Plan) for the purpose of estimating the funded status of the Plan and determining the Actuarially Determined Employer Contribution (ADEC) for the fiscal years ending June 30, 2018 and June 30, 2019. 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 *Summary of 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 factors such as, but not limited to, 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 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 have no relationship with the employer or the Plan that would impair, or appear to impair, my objectivity in performing the work presented in this report. I am a member of the American Academy of Actuaries and meet its Qualification Standards to render the actuarial opinion contained herein.



Timothy A. Ryor, FSPA, FCA, MAAA  
Enrolled Actuary 17-05126

June 27, 2017

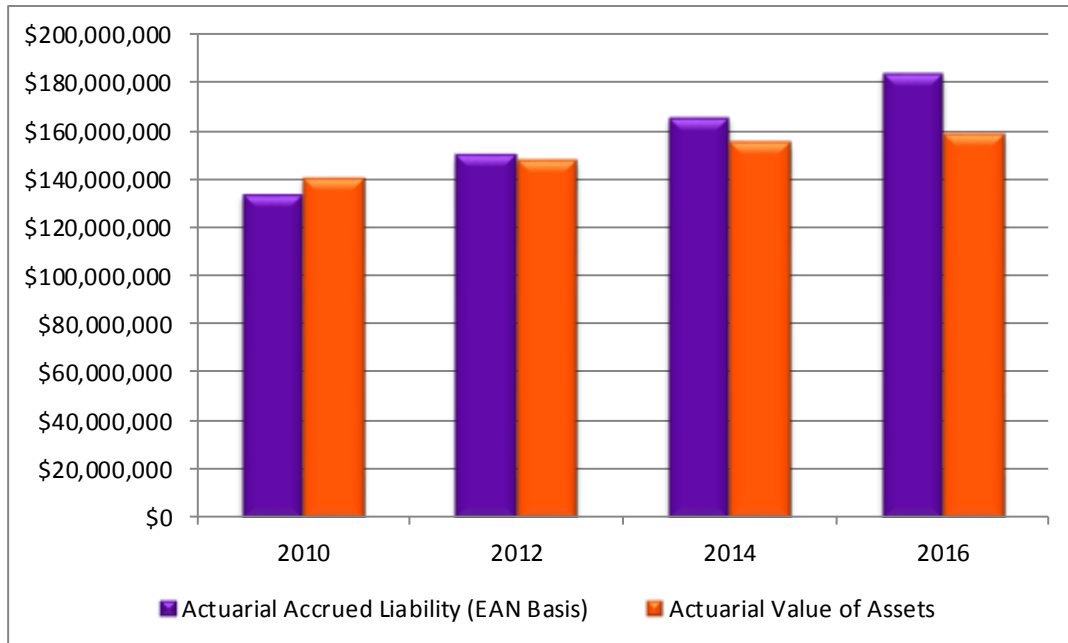


## Development of Unfunded Accrued Liability and Funded Ratio

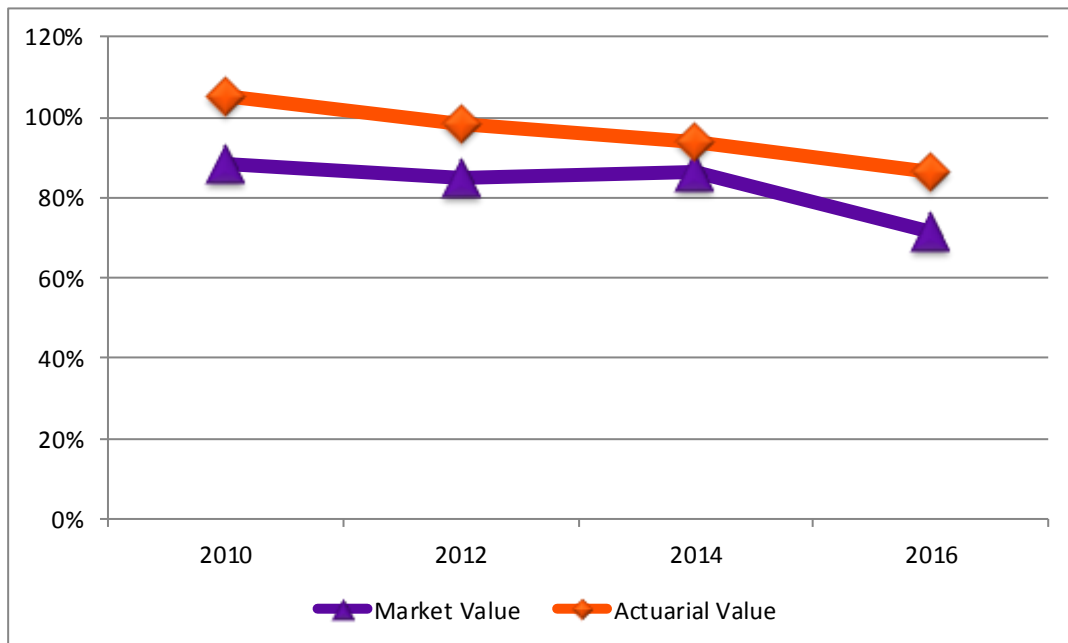
	July 1, 2016	July 1, 2014
Actuarial accrued liability for inactive members		
Retired, disabled and beneficiaries	\$99,837,962	\$79,546,188
Terminated vested members	2,342,762	1,589,534
Due refund of employee contributions only	602,762	301,636
Total	102,783,486	81,437,358
Actuarial accrued liability for active employees	81,031,493	84,093,828
Total actuarial accrued liability	183,814,979	165,531,186
Actuarial value of assets	158,672,766	154,906,580
Unfunded accrued liability	25,142,213	10,624,606
Funded ratio	86.3%	93.6%



### Actuarial Accrued Liability vs. Actuarial Value of Assets



### Funded Ratio





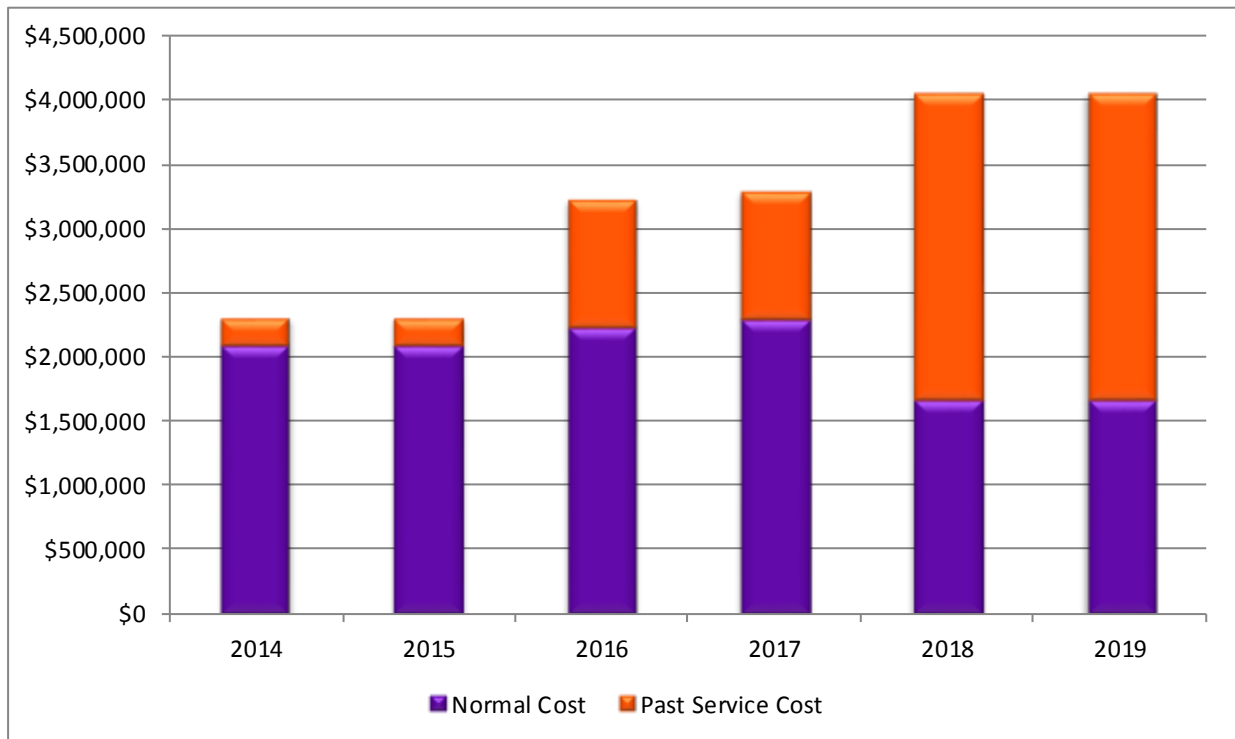


## Determination of Normal Cost and Actuarially Determined Employer Contribution

	July 1, 2016		July 1, 2014	
	Cost	Percent of payroll	Cost	Percent of payroll
Gross normal cost	\$3,625,638	10.1%	\$4,197,147	11.3%
Estimated employee contributions	(2,046,771)	-5.7%	(2,142,275)	-5.8%
Estimated administrative expenses	32,500	0.1%	30,000	0.1%
City's normal cost	1,611,367	4.5%	2,084,872	5.6%
Amortization of unfunded accrued liability	2,284,923	6.4%	948,563	2.6%
Contribution before adjustment as of the valuation date	3,896,290	10.9%	3,033,435	8.2%
Estimated valuation year payroll	35,780,810		37,194,923	
Fiscal year ending	2018		2016	
Adjustment for interest and inflation	148,164		185,449	
Actuarially determined employer contribution	4,044,454		3,218,884	
Fiscal year ending	2019		2017	
Adjustment for interest and inflation	0		66,036	
Actuarially determined employer contribution	4,044,454		3,284,920	



### Actuarially Determined Employer Contribution





### Actuarially Determined Employer Contribution per Group

	City	Fire	Police	Total
Gross normal cost	\$2,011,124	\$614,772	\$999,742	\$3,625,638
Estimated employee contributions	(1,448,848)	(181,871)	(416,052)	(2,046,771)
Estimated administrative expenses	18,027	5,511	8,962	32,500
City's normal cost	580,303	438,412	592,652	1,611,367
Actuarial accrued liability	171,397,422	3,598,602	8,818,955	183,814,979
Actuarial value of assets	147,953,683	3,106,385	7,612,698	158,672,766
Unfunded accrued liability	23,443,739	492,217	1,206,257	25,142,213
Amortization of unfunded accrued liability	2,130,565	44,733	109,625	2,284,923
Contribution before adjustment as of the valuation date	2,710,868	483,145	702,277	3,896,290
Fiscal year ending June 30, 2018				
Adjustment for interest and inflation	103,086	18,373	26,705	148,164
Actuarially determined employer contribution	2,813,954	501,518	728,982	4,044,454
Fiscal year ending June 30, 2019				
Adjustment for interest and inflation	0	0	0	0
Actuarially determined employer contribution	2,813,954	501,518	728,982	4,044,454



## Determination of Actuarial Gain/Loss

The Actuarial Gain/Loss is the difference between the expected unfunded accrued liability and the actual unfunded accrued liability, without regard to any changes in actuarial methods, actuarial assumptions or plan provisions. This can also be referred to an Experience Gain/Loss, since it reflects the difference between what was expected and what was actually experienced.

Actuarial Gain / Loss	
<b>Expected unfunded accrued liability July 1, 2016</b>	
Expected unfunded accrued liability July 1, 2015	
Unfunded accrued liability July 1, 2014	\$10,624,606
Gross normal cost July 1, 2014	4,227,147
City and employee contributions for 2014-2015	(4,407,699)
Interest at 8.00% to July 1, 2015	1,015,909
Expected unfunded accrued liability July 1, 2015	11,459,963
Expected unfunded accrued liability July 1, 2016	
Expected unfunded accrued liability July 1, 2015	11,459,963
Expected gross normal cost July 1, 2015	4,353,061
City and employee contributions for 2015-2016	(5,350,780)
Interest at 8.00% to July 1, 2016	1,055,392
Expected unfunded accrued liability July 1, 2016	11,517,636
<b>Actuarial (gain) / loss July 1, 2016</b>	<b>14,056,795</b>
<b>Actual unfunded accrued liability July 1, 2016, prior to plan provision, assumption and method changes</b>	<b>25,574,431</b>
<b>Sources of (gain) / loss</b>	
Assets	11,286,838
Liabilities	2,769,957
Total (gain) / loss	14,056,795
<b>Assumption and method changes since prior valuation</b>	<b>(432,218)</b>
<b>Actual unfunded accrued liability July 1, 2016, after plan provision, assumption and method changes</b>	<b>25,142,213</b>



## Development of Asset Values

Summary of Fund Activity		
	July 1, 2014 - June 30, 2015	July 1, 2015 - June 30, 2016
<b>1. Beginning market value of assets</b>		
Trust assets	\$142,902,773	\$139,395,471
<b>2. Contributions</b>		
City contributions during year	2,307,742	3,264,731
Employee contributions during year	2,099,957	2,086,049
Total for plan year	4,407,699	5,350,780
<b>3. Disbursements</b>		
Benefit payments during year	8,960,559	9,553,855
Administrative expenses during year	29,710	30,816
Other disbursements	231,874	510,786
Total for plan year	9,222,143	10,095,457
<b>4. Net investment return</b>		
Interest and dividends	2,643,239	2,008,758
Net appreciation (depreciation)	(521,206)	(4,061,479)
Investment-related expenses	(814,891)	(762,604)
Total for plan year	1,307,142	(2,815,325)
<b>5. Ending market value of assets</b>		
Trust assets: (1) + (2) - (3) + (4)	139,395,471	131,835,469
<b>6. Approximate rate of return</b>	0.8%	-2.4%



### Determination of the Actuarial Value of Assets

1. Actuarial value of assets July 1, 2014	\$ 154,906,580
2. City contributions during 2014-2015	2,307,742
3. Employee contributions during 2014-2015	2,099,957
4. Benefit payments, administrative expenses and other disbursements during 2014-2015	(9,222,143)
5. Expected return during 2014-2015	<u>12,188,206</u>
6. Expected actuarial value of assets July 1, 2015	162,280,342
7. Market value of assets July 1, 2015	139,395,471
8. Appreciation (depreciation) recognized: 20% x [(7) - (6)]	(4,576,974)
9. Actuarial value of assets July 1, 2015: (6) + (8)	157,703,368
10. City contributions during 2015-2016	3,264,731
11. Employee contributions during 2015-2016	2,086,049
12. Benefit payments, administrative expenses and other disbursements during 2015-2016	(10,095,457)
13. Expected return during 2015-2016	<u>12,423,399</u>
14. Expected actuarial value of assets July 1, 2016	165,382,090
15. Market value of assets July 1, 2016	131,835,469
16. Appreciation (depreciation) recognized: 20% x [(15) - (14)]	(6,709,324)
17. Preliminary actuarial value of assets July 1, 2016: (14) + (16)	158,672,766
18. Preliminary actuarial value of assets as a percentage of market value of assets	120.4%
19. Actuarial value of assets July 1, 2016	158,672,766
2014-2015 return on actuarial value of assets	5.0%
2015-2016 return on actuarial value of assets	3.7%

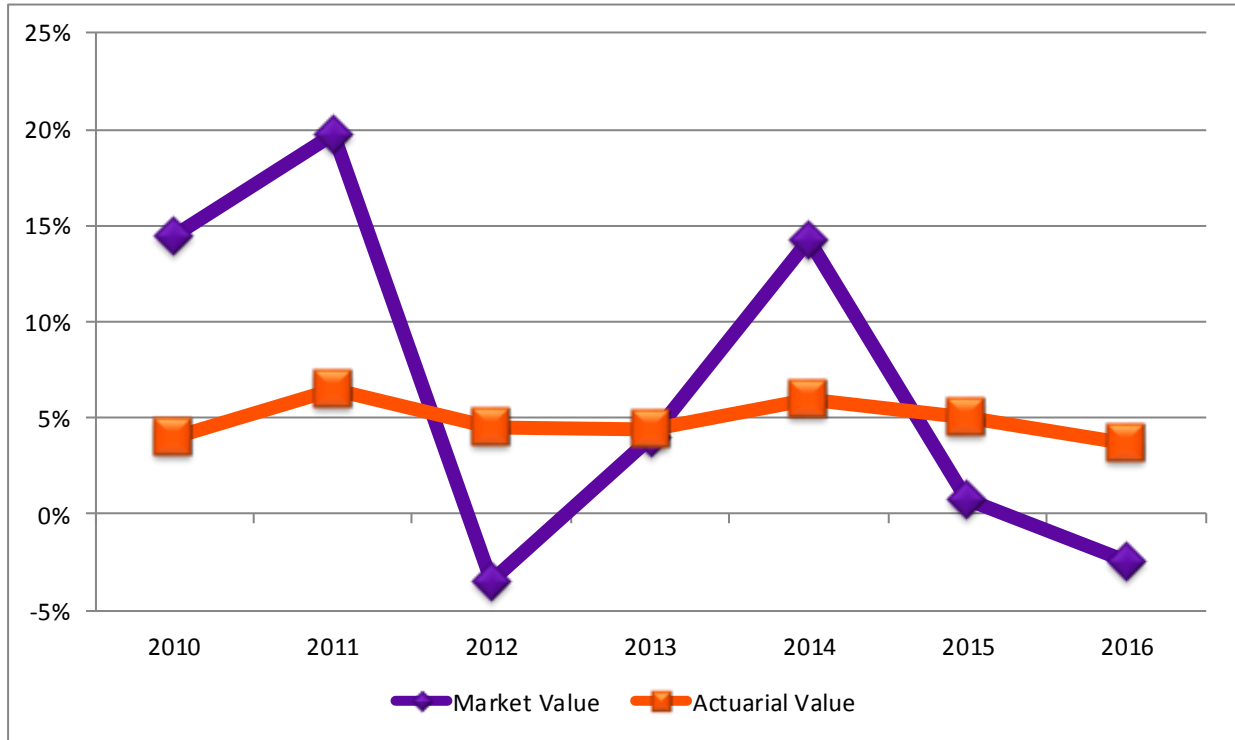


<b>Rate of Return on Market Value of Assets</b>				
<b>Period Ending June 30</b>	<b>Average Annual Effective Rate of Return</b>			
	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
2007	16.9%	N/A	N/A	N/A
2008	6.0%	N/A	N/A	N/A
2009	-20.0%	-0.3%	N/A	N/A
2010	14.5%	-1.0%	N/A	N/A
2011	19.7%	3.1%	6.3%	N/A
2012	-3.5%	9.8%	2.3%	N/A
2013	4.0%	6.3%	1.9%	N/A
2014	14.2%	4.7%	9.5%	N/A
2015	0.8%	6.2%	6.7%	N/A
2016	-2.4%	3.9%	2.4%	4.4%

<b>Rate of Return on Actuarial Value of Assets</b>				
<b>Period Ending June 30</b>	<b>Average Annual Effective Rate of Return</b>			
	<b>1 Year</b>	<b>3 Years</b>	<b>5 Years</b>	<b>10 Years</b>
2007	8.7%	N/A	N/A	N/A
2008	8.1%	N/A	N/A	N/A
2009	2.3%	6.3%	N/A	N/A
2010	4.0%	4.8%	N/A	N/A
2011	6.5%	4.3%	5.9%	N/A
2012	4.5%	5.0%	5.1%	N/A
2013	4.4%	5.1%	4.3%	N/A
2014	6.0%	5.0%	5.1%	N/A
2015	5.0%	5.1%	5.3%	N/A
2016	3.7%	4.9%	4.7%	5.3%



### Actual Rate of Return on Assets







## Target Allocation and Expected Rate of Return July 1, 2016

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*	Weighting
Equity - Domestic	45.00%	5.75%	2.59%
Equity - International	12.00%	6.00%	0.72%
Fixed Income	18.00%	2.50%	0.45%
Real Estate	3.00%	4.25%	0.13%
Hedge Funds	4.00%	4.90%	0.20%
Managed Futures	10.00%	4.50%	0.45%
Private Equity	6.00%	10.70%	0.64%
Commodities	0.00%	2.30%	0.00%
Cash	2.00%	0.50%	0.01%
	100.00%		5.19%
Long-Term Inflation Expectation			2.75%
Long-Term Expected Nominal Return			7.94%

*\*Long-Term Returns are provided by Stifel Nicolaus. 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. An expected rate of return of 7.75% was used.



## Amortization of Unfunded Liability

Schedule of Amortization Bases					
	Date established	Original amount	Amortization installment	Years remaining	Present value of remaining installments as of July 1, 2016
2016 base	July 1, 2016	25,142,213	2,284,923	21	25,142,213



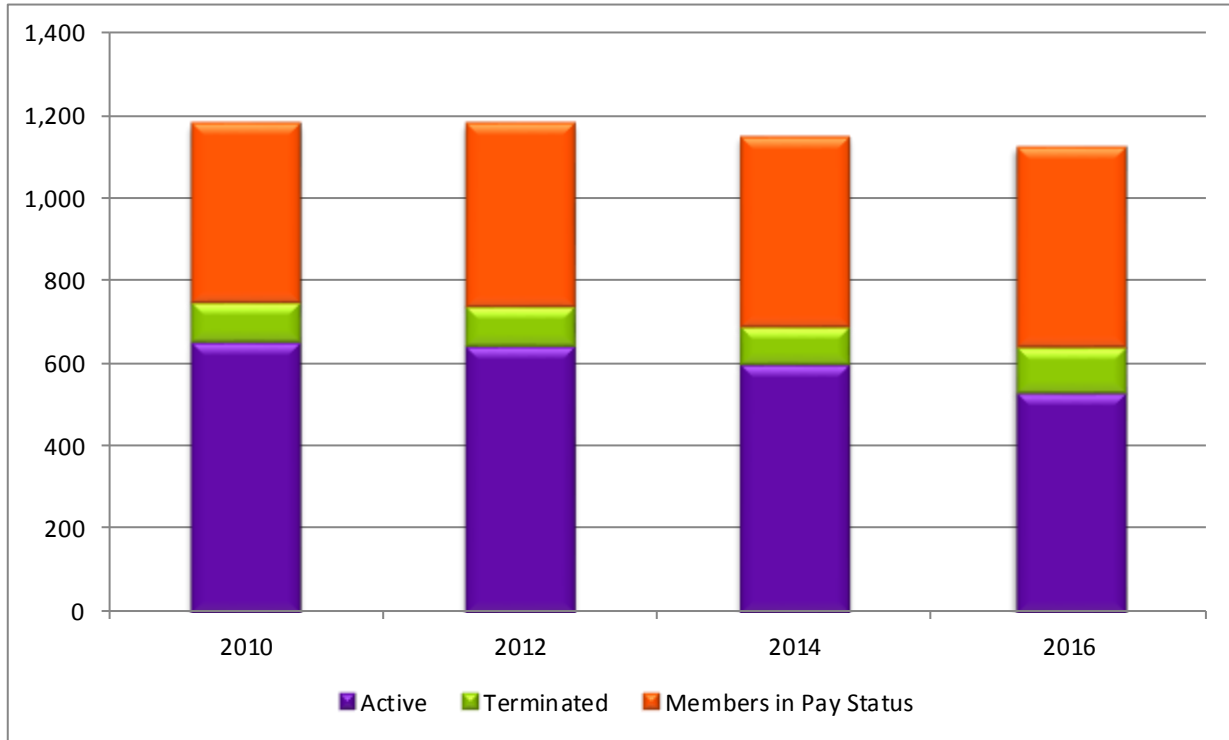
## Member Data

The data reported by the Plan Sponsor for this valuation includes 531 active employees who met the Plan's minimum age and service requirements as of July 1, 2016.

Member Data					
	Active	Terminated vested	Due refund of contributions	Members in pay status	Total
<b>Total members July 1, 2014</b>	598	29	64	459	1,150
Adjustments	0	0	0	0	0
Retirements	-54	0	N/A	+54	0
Disabilities	-1	N/A	N/A	+1	0
Terminations					
Vested	-5	+5	N/A	N/A	0
Lump sum payments	-12	0	-3	N/A	-15
Due contributions only	-10	N/A	+10	N/A	0
Deaths					
With death benefit	-1	0	0	-3	-4
Without death benefit	-3	0	0	-29	-32
Transfers	0	0	0	N/A	0
Rehires	0	0	0	N/A	0
New beneficiaries	N/A	N/A	N/A	+4	+4
New entrants	+19	N/A	+2	N/A	+21
<b>Total members July 1, 2016</b>	531	34	73	486	1,124



### Member Counts by Status





<b>Member Data</b>				
	<b>Active</b>	<b>Terminated vested</b>	<b>Due refund of contributions</b>	<b>Members in pay status</b>
<b>Average age</b>				
July 1, 2014	49.6	58.5	46.6	74.6
July 1, 2016	49.5	58.9	49.0	74.4
<b>Average service</b>				
July 1, 2014	14.7	N/A	N/A	N/A
July 1, 2016	15.5	N/A	N/A	N/A
<b>Covered employee payroll</b>				
July 1, 2014	\$37,477,862	N/A	N/A	N/A
July 1, 2016	34,465,270	N/A	N/A	N/A
<b>Total annual benefits</b>				
July 1, 2014	N/A	\$296,659	N/A	\$8,453,730
July 1, 2016	N/A	378,605	N/A	10,002,416



<b>Member Data - City</b>					
	<b>Active</b>	<b>Terminated vested</b>	<b>Due refund of contributions</b>	<b>Members in pay status</b>	<b>Total</b>
<b>Total members July 1, 2014</b>	487	29	59	456	1,031
Adjustments	0	0	0	0	0
Retirements	-54	0	N/A	+54	0
Disabilities	-1	N/A	N/A	+1	0
Terminations					
Vested	-5	+5	N/A	N/A	0
Lump sum payments	-8	0	-2	N/A	-10
Due contributions only	-10	N/A	+10	N/A	0
Deaths					
With death benefit	-1	0	0	-3	-4
Without death benefit	-3	0	0	-29	-32
Transfers	0	0	0	N/A	0
Rehires	0	0	0	N/A	0
New beneficiaries	N/A	N/A	N/A	+4	+4
New entrants	+19	N/A	+2	N/A	+21
<b>Total members July 1, 2016</b>	424	34	69	483	1,010



<b>Member Data - Fire</b>					
	<b>Active</b>	<b>Terminated vested</b>	<b>Due refund of contributions</b>	<b>Members in pay status</b>	<b>Total</b>
<b>Total members July 1, 2014</b>	44	0	0	0	44
Adjustments	0	0	0	0	0
Retirements	0	0	N/A	0	0
Disabilities	0	N/A	N/A	0	0
Terminations					
Vested	0	0	N/A	N/A	0
Lump sum payments	-1	0	0	N/A	-1
Due contributions only	0	N/A	0	N/A	0
Deaths					
With death benefit	0	0	0	0	0
Without death benefit	0	0	0	0	0
Transfers	0	0	0	N/A	0
Rehires	0	0	0	N/A	0
New beneficiaries	N/A	N/A	N/A	0	0
New entrants	0	N/A	0	N/A	0
<b>Total members July 1, 2016</b>	43	0	0	0	43



<b>Member Data - Police</b>					
	<b>Active</b>	<b>Terminated vested</b>	<b>Due refund of contributions</b>	<b>Members in pay status</b>	<b>Total</b>
<b>Total members July 1, 2014</b>	67	0	5	3	75
Adjustments	0	0	0	0	0
Retirements	0	0	N/A	0	0
Disabilities	0	N/A	N/A	0	0
Terminations					
Vested	0	0	N/A	N/A	0
Lump sum payments	-3	0	-1	N/A	-4
Due contributions only	0	N/A	0	N/A	0
Deaths					
With death benefit	0	0	0	0	0
Without death benefit	0	0	0	0	0
Transfers	0	0	0	N/A	0
Rehires	0	0	0	N/A	0
New beneficiaries	N/A	N/A	N/A	0	0
New entrants	0	N/A	0	N/A	0
<b>Total members July 1, 2016</b>	64	0	4	3	71





## Description of Actuarial Methods

### Asset Valuation Method

The Actuarial Value of assets used in the development of plan contributions phases in differences between the Market Value and Expected Actuarial Value by recognizing 20% of the difference each year.

### Actuarial Cost Method

- A. Changes in Actuarial Cost Method: None.
- B. Description of Current Actuarial Cost Method:

Basic cost method: Entry Age Normal (level percentage of salary)

Normal Cost: Under this method, the total normal cost is the sum of amounts necessary to fund each active member's normal retirement benefit if paid annually from entry age to assumed retirement age. Entry age is the age at which the employee would have been first eligible for the plan, if it had always been in effect. The normal cost for each participant is expected to remain a level percentage of the employee's salary. The normal cost for the plan is the difference between the total normal cost for the year and the anticipated member contributions for that year.

Past Service Liability: The present value of future benefits that relates to service before the valuation date is the total past service liability. The unfunded past service liability is the difference between the total past service liability and any assets (including accumulated member contributions). This amount is amortized over 21 years on a closed basis.

Experience Gains and Losses: All experience gains and losses (the financial effect of the difference between the actual experience during the prior period and the result expected by the actuarial assumptions for that prior period) appear directly in the past service liability and are amortized at the same rate the plan is amortizing the remaining unfunded past service liability.



## Description of Actuarial Assumptions

### Changes in Actuarial Assumptions as of July 1, 2016

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

- Mortality
- Retirement
- Turnover
- Investment rate of return
- Disability
- Salary Scale
- Inflation

The assumptions indicated were changed to represent the Enrolled Actuary's current best estimate of anticipated experience of the plan.

### Investment rate of return (net of investment-related and administrative expenses)

7.75%. (Prior: 8.00%)

### Salary Scale

Merit tables shown below, plus an annual inflation assumption of 2.75% for all groups.

City		Fire		Police	
Completed Years of Service	Rate	Completed Years of Service	Rate	Completed Years of Service	Rate
0	8.00%	0	8.00%	0	8.00%
1	5.00	1	6.00	1	6.50
2	4.00	2	4.00	2	5.00
3	3.00	3	1.50	3	4.00
4	3.00	4	1.50	4	2.00
5	2.50	5	1.50	5	1.00
6	2.00	6	1.50	6	0.50
7	1.75	7	1.25	7	0.50
8	1.50	8	1.25	8	0.50
9	1.25	9	1.25	9	0.50
10	1.00	10	1.25	10	0.50
11	0.75	11	1.25	11	0.50
12	0.75	12	1.25	12	0.50
13	0.75	13	1.00	13	0.50
14	0.50	14	1.00	14+	0.25
15	0.25	15+	0.50		
16	0.00				

Prior: City: It is assumed that salaries will increase by 3% per annum (compounded) plus a graded scale of 7% at age 20 down to 0% at age 60 and beyond.

Prior: Firefighters and Police: It is assumed that salaries will increase by 3% per annum (compounded) plus a graded scale of 7% at age 20 down to 0% at age 50 and beyond.

The actuarial assumption in regards to salary scale shown above is based on the results of an actuarial experience study for the period July 1, 2008 through July 1, 2014.



## **Inflation**

2.75%. (Prior: 3.00%)

This assumption is based on long term historical inflation numbers. While near term averages have been lower, we do not believe this trend will continue indefinitely and expect that there will be a reversion to the long-term average.

The assumption was changed to better reflect expected experience.

## **Mortality**

City Retirements: RP-2014 Adjusted to 2006 Total Dataset Mortality Table, projected to the valuation date with Scale MP-2016.

Fire and Police Retirements: RP-2014 Adjusted to 2006 Blue Collar Mortality Table, projected to the valuation date with Scale MP-2016.

Disabilities: RP-2014 Adjusted to 2006 Disabled Mortality Table, projected to the valuation date with Scale MP-2016.

Survivors: RP-2014 Adjusted to 2006 Total Dataset Mortality Table, projected to the valuation date with Scale MP-2016.

Prior: City: RP-2000 Mortality Table with separate male and female rates, with no collar adjustment, separate tables for non-annuitants and annuitants, projected to the valuation date with Scale AA.

Fire and Police: RP-2000 Mortality Table with separate male and female rates, with blue collar adjustment, separate tables for non-annuitants and annuitants, projected to the valuation date with Scale AA.

Survivors: RP-2000 Mortality Table with separate male and female rates, with no collar adjustment, rates for annuitants, projected to the valuation date with Scale AA.

Disabilities: RP-2000 Mortality Table with separate male and female rates, with no collar adjustment, combined table for non-annuitants and annuitants.

## **Mortality Improvement**

All: Projected to date of decrement using Scale MP-2016 (generational).

Prior: Retirement: Projected to date of decrement using Scale AA (generational mortality).

Disabilities: None.

We have selected this mortality assumption because it is based on the latest published pension mortality study released by the Society of Actuaries. The group composition of the Plan is consistent with the collar adjustment selected.



**Retirement age**

City – Sample Rates:

Age	Completed Years of Service				
	10	15	20	25	30
50	0%	0%	0%	10%	15%
55	2.5%	2.5%	3.5%	10%	7%
60	2.5%	2.5%	10%	7%	10%
65	15%	15%	15%	35%	35%
70	20%	20%	20%	25%	25%
75	20%	20%	20%	50%	50%
80	100%	100%	100%	100%	100%

Fire – Sample Rates:

Age	Completed Years of Service			
	<25	25	30	35
50	0%	5%	5%	5%
55	0%	20%	20%	20%
60	0%	20%	20%	30%
65	0%	100%	100%	100%

Police – Sample Rates:

Age	Completed Years of Service					
	10	15	20	25	30	33
40	0%	0%	0%	50%	10%	25%
45	0%	0%	0%	50%	10%	25%
50	0%	0%	0%	50%	10%	25%
55	0%	0%	0%	50%	5%	25%
60	0%	0%	5%	50%	25%	25%
65	100%	100%	100%	100%	100%	100%

Prior:

City: Age and service based table developed from experience from prior years. Sample rates are as follows:

Age	Completed Years of Service				
	10	15	20	25	30+
50	6.25%	6.25%	6.25%	6.25%	12.50%
55	6.25	6.25	6.25	6.25	12.50
60	15.00	15.00	15.00	15.00	30.00
65	25.00	25.00	25.00	25.00	25.00
70	20.00	20.00	20.00	20.00	20.00
75	100.00	100.00	100.00	100.00	100.00

Fire and City:

Sample Rates	
Completed Years of Service	Retirement
<25	0%
25	25%
26-29	15%
30	50%
31-34	20%
35+	100%



**Termination prior to retirement**

70% of the Vaughn Select & Ultimate Withdrawal Table for City employees

City – Sample Rates:

Age	Completed Years of Service			
	0	1	2	3
20	20.86%	17.50%	14.70%	13.02%
25	19.46%	15.75%	12.95%	9.52%
30	18.06%	14.00%	11.20%	7.07%
35	16.66%	12.46%	9.66%	5.53%
40	15.26%	11.06%	8.26%	4.55%
45	13.86%	9.87%	7.07%	3.85%
50	12.46%	8.82%	6.02%	3.15%
55	0.00%	0.00%	0.00%	0.00%

Prior: City

Sample Rates	
Age	Rate
20	5.44%
25	5.29%
30	5.07%
35	4.07%
40	4.19%
45	3.54%
50	2.48%
55	0.00%

Fire and Police: None

**Disability**

City: None.

Fire and Police: 1985 Pension Disability Study Class 4 Unisex Table. This assumption is more appropriate based on 2008-2014 experience.

Prior: City:

Sample Rates	
Age	Rate
20	0.03%
25	0.03%
30	0.03%
35	0.03%
40	0.05%
45	0.09%
50	0.20%
55	0.43%
60	0.87%

*\*25% of disabilities are considered service connected.*



### Disability (cont.)

Fire:

Sample Rates	
Age	Rate
20	0.06%
25	0.09%
30	0.11%
35	0.15%
40	0.22%
45	0.36%
50	0.61%
55	1.01%
60	1.63%

*\*100% of deaths prior to retirement and 100% of disabilities are considered service connected.*

Police:

Sample Rates	
Age	Rate
20	0.12%
25	0.17%
30	0.22%
35	0.29%
40	0.44%
45	0.72%
50	1.21%
55	2.02%
60	3.25%

*\*100% of disabilities with less than 10 years of service are considered service connected.*

The actuarial assumptions in regards to rates of decrement shown above are based on the results of an actuarial experience study for the period July 1, 2008 through July 1, 2014.

### Administrative expenses

We have included estimated administrative expenses in the development of the normal cost.

The estimate is based on actual expenses paid from the trust in the prior year.

### Payroll growth

0%.

### Percent of active employees married

75% of male participants and 65% of female participants.

### Spouse's age

Husbands are assumed to be 3 years older than wives.

The assumption changes decreased liabilities by about 0.2%.



## Summary of Plan Provisions

*This summary outlines the major features of the Plan. It does not give full details or cover all aspects of the Plan. The actual terms and conditions of the Plan are stated in documents with the City.*

### Plan identification

Single-employer pension plan

### Eligibility for Participation

Regular full-time employees (other than Members of the State Teachers' Retirement System), including elected and appointed officials, are eligible at hire. City Employees hired on or after July 1, 2011 are not eligible.

### Years of Service

Year and months (rounded) of employment during which employee has made required contributions.

### Base Rate of Pay

Salary or wages including elective deferrals under 401(k) or Sec. 125, limited by IRC 401(a)(17).

### Average Annual Pay

Police hired on or after July 1, 2012: Highest paid calendar year out of the last ten years.

All Others: Average of three highest paid calendar years out of the last ten years.

### Accrued Benefit

Firefighters and BOE: 2% of Average Final Pay times Years of Service with a maximum of 30 years.

Police hired prior to July 1, 2012 and non-BOE City: 2% of Average Final Pay times Years of Service for the first 20 years, plus 2.5% of Average Final Pay times Years of Service for years 21 through 32.

Police hired on or after July 1, 2012: 2% of Average Final Pay times Years of Service with a maximum of 25 years.

### Normal Retirement

Age & Service Requirements:

City: Earlier of

- Later of 10 Years of Service and age 65
- Any combination of Years of Service and age equaling 80, with a minimum of 10 Years of Service

Police Officers hired prior to July 1, 2012: Earlier of

- Completion of 25 Years of Service
- Any combination of Years of Service and age equaling 80, with a minimum of 10 Years of Service
- Age 65

Police Officers hired on or after July 1, 2012: Earlier of

- Completion of 25 Years of Service
- Later of 10 Years of Service and age 65

Firefighters: Earlier of

- Completion of 25 Years of Service
- Age 65

Benefit: Accrued Benefit



## Early Retirement

### Eligibility:

Police hired prior to July 1, 2012 and City: completion of 10 Years of Service and age 55

Police hired on or after July 1, 2012 and Firefighters: None

### Benefit: Accrued Benefit reduced by the following percentages:

- City: 6.67% per year for each year between 65 and 60, plus 3.33% for each year between 60 and 55.
- Police hired prior to July 1, 2012: 5% per year for years between early retirement date and date Member would have completed 25 Years of Service.

## Termination

Prior to completion of 10 Years of Service: Return of employee contributions plus regular interest.

After completion of 10 Years of Service: Member may elect to receive either

- Return of employee contributions plus regular interest, or
- Accrued Benefit.

## Disability

### Eligibility:

Police hired on or after July 1, 2012: Completion of 10 Years of Service.

All Others: None if service-related; otherwise completion of 10 Years of Service.

### Benefit:

#### City and Firefighters:

- Service-related: greater of Accrued Benefit, or 50% of annual rate of Pay at time of disability.
- Non-Service related: Accrued Benefit.

#### Police:

- Service-related: if disabled from employment as police officer hired prior to July 1, 2012: 50% of annual rate of Pay at time of disability. Hired on or after July 1, 2012: 40% of annual rate of Pay at time of disability.
- Service-related: if disabled from any gainful employment hired prior to July 1, 2012: Accrued Benefit as if Officer had no less than 25 Years of Service. Hired on or after July 1, 2012: Accrued Benefit as if Officer had no less than 20 Years of Service.
- Non-Service related: Accrued Benefit as if Officer had no less than 20 Years of Service.

## Death Prior to Retirement

Prior to completion of 10 Years of Service: Return of employee contributions plus regular interest.

City Employees after eligibility for Early or Normal Retirement: Surviving spouse may elect to receive either

- Return of employee contributions plus regular interest, or
- 50% of benefit Member would have received if retired day before death and elected 50% Joint and Survivor option.

Police Officer and Firefighter Service-related death: Surviving spouse receives 100% of Accrued Benefit as if Officer had at least 25 Years of Service. Upon attainment of date Officer or Firefighter would have attained 25 Years, spouse's benefit decreases to 50% of the pension amount. Payable until death or remarriage.





### **Death After Retirement and after age 65**

Firefighters and BOE: \$1,000 lump sum payable to beneficiary in addition to any other benefits under plan.

Police and non-BOE City: \$5,000 lump sum payable to beneficiary in addition to any other benefits under plan.

### **Normal Form of Retirement Benefit**

Single life annuity.

### **Optional Forms of Benefits**

Actuarial equivalent of Normal Form paid as

- Ten year certain and continuous annuity
- Joint and Survivor annuity with 100%, 66-2/3% or 50% of pension continued to designated beneficiary

### **Employee Contributions**

Firefighters: 6% of Pay, split between Pension and OPEB at the City's discretion.

BOE: 8% of Pay, split between Pension and OPEB at the City's discretion.

Non-BOE City: 11% of Pay, split between Pension and OPEB at the City's discretion.

Police: 10% of Pay for employees hired before July 1, 2012, split between Pension and OPEB at the City's discretion. 7% of Pay for employees hired on or after July 1, 2012, for Pension only.

### **COLA**

Police hired on or after July 1, 2012: None.

Retirement prior to July 1, 1989: None.

Retirement after July 1, 1989 and prior to July 1, 2000: 3% every other year, beginning after the later of 3 years from retirement date or age 65.

Retirement after July 1, 2000: 2% every year, beginning after the later of 2 years from retirement date or age 62. For Police and Firefighters with 25 Years of Service, beginning 1 year from retirement.

Lifetime cap of 50% of original pension.

### **Retirement windows**

Retirement windows were offered in 1999 and 2007.