



CUSTODIANS AND MECHANICS PENSION TRUST FUND OF THE CITY OF
STAMFORD

ACTUARIAL VALUATION REPORT

JULY 1, 2016





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Executive Summary

	July 1, 2016	July 1, 2015
Number of members		
Active employees	528	527 *
Terminated vested members	61	20 *
Retired, disabled and beneficiaries	163	147 *
Total	752	694
Covered employee payroll	19,918,498	19,608,490 **
Average plan salary	37,724	37,208
Actuarial present value of future benefits	93,022,591	85,819,861
Actuarial accrued liability	71,139,979	67,608,355
Plan assets		
Market value of assets	55,125,767	56,961,858
Actuarial value of assets	61,912,878	59,000,012
Unfunded accrued liability	9,227,101	8,608,343
Funded ratio	87.0%	87.3%
Actuarially determined employer contribution (ADEC)		
Fiscal year ending	2018	2017
ADEC	2,206,000	2,145,000

* Not updated for Actuarial Valuation in interim year

** Estimated to be 3.00% higher than 2014 pay



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 year ending 2018.

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 following assumption changes are reflected in this valuation:

- Salary service scale reduced by .25%
- Inflation decreased to 2.75%
- Payroll growth reduced by .25%
- Mortality improvement updated to Scale BB
- Medicare Part B future increases reduced by .25%

Cash Contribution for Fiscal Year Ending 2018

The City cost is:	2018 Fiscal Year
	\$2,206,000

Liability Experience During Period Under Review

Overall, liabilities were a little less than we expected. The average salary increase over the two year period was 3.8% and there were a few more deaths than we expected.



Asset Experience During Period Under Review

	2016 Fiscal Year
Market Value Basis	-3.3%
Actuarial Value Basis	4.7%

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 Custodians and Mechanics Pension Trust Fund of the City of Stamford (the Plan) for the purpose of estimating the funded status of the Plan and determining the Actuarially Determined Employer Contribution (ADEC) for the fiscal year ending June 30, 2018. 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.

Evan W. Woollacott, Jr., FCA, MAAA
Enrolled Actuary 14-04513

February 3, 2017

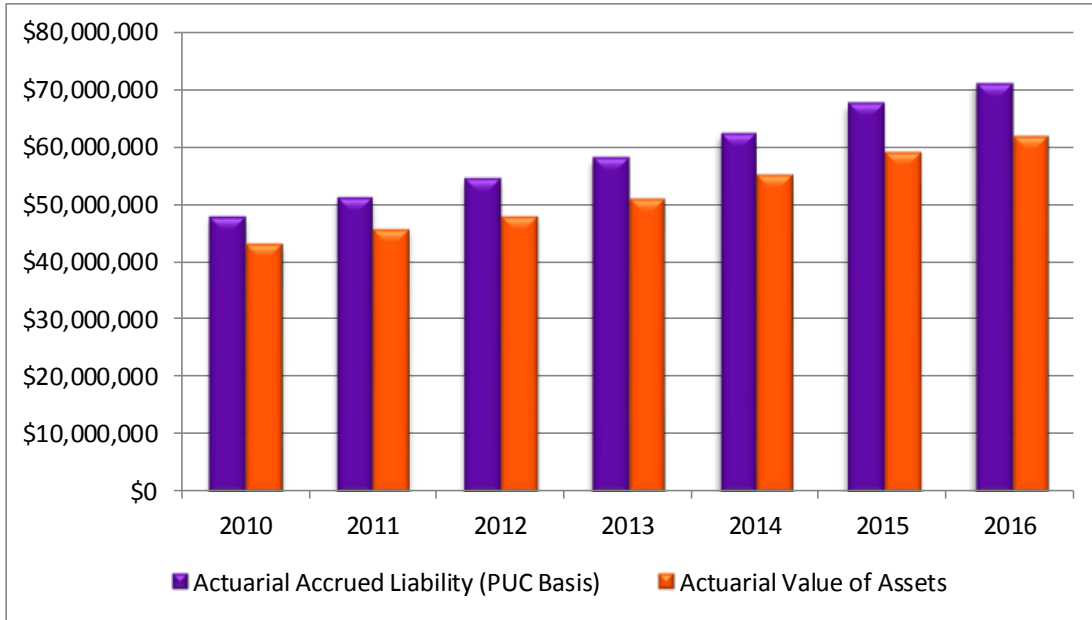


Development of Unfunded Accrued Liability and Funded Ratio

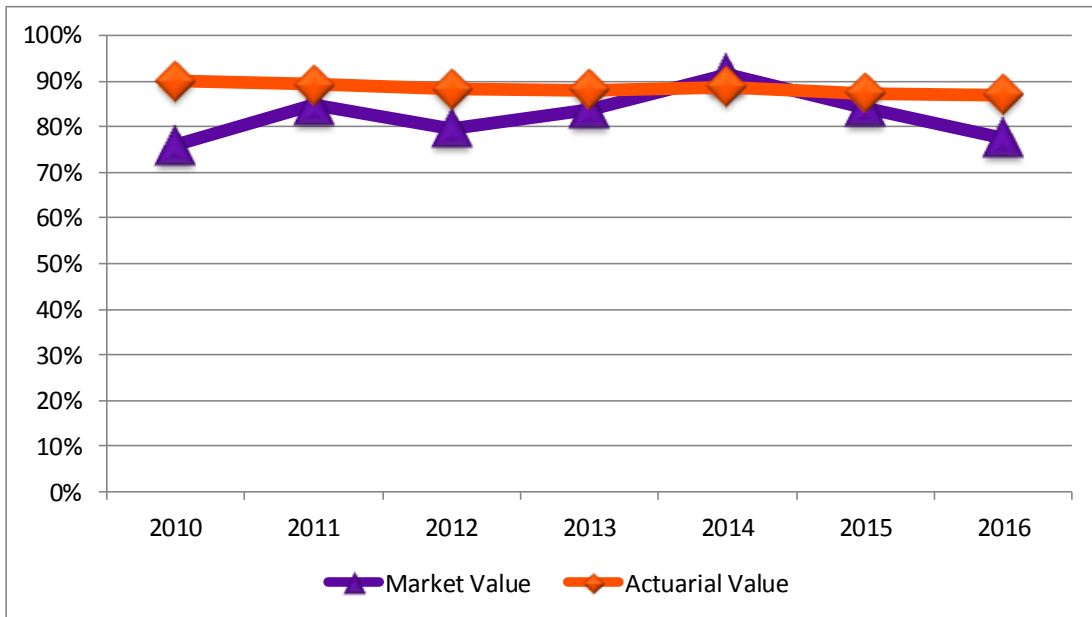
	July 1, 2016	July 1, 2015
Actuarial accrued liability for inactive members		
Retired, disabled and beneficiaries	\$24,005,612	\$21,030,114
Terminated vested members	673,411	682,191
Total	24,679,023	21,712,305
Actuarial accrued liability for active employees	46,460,956	45,896,050
Total actuarial accrued liability	71,139,979	67,608,355
Actuarial value of assets	61,912,878	59,000,012
Unfunded accrued liability	9,227,101	8,608,343
Funded ratio	87.0%	87.3%



Actuarial Accrued Liability vs. Actuarial Value of Assets



Funded Ratio



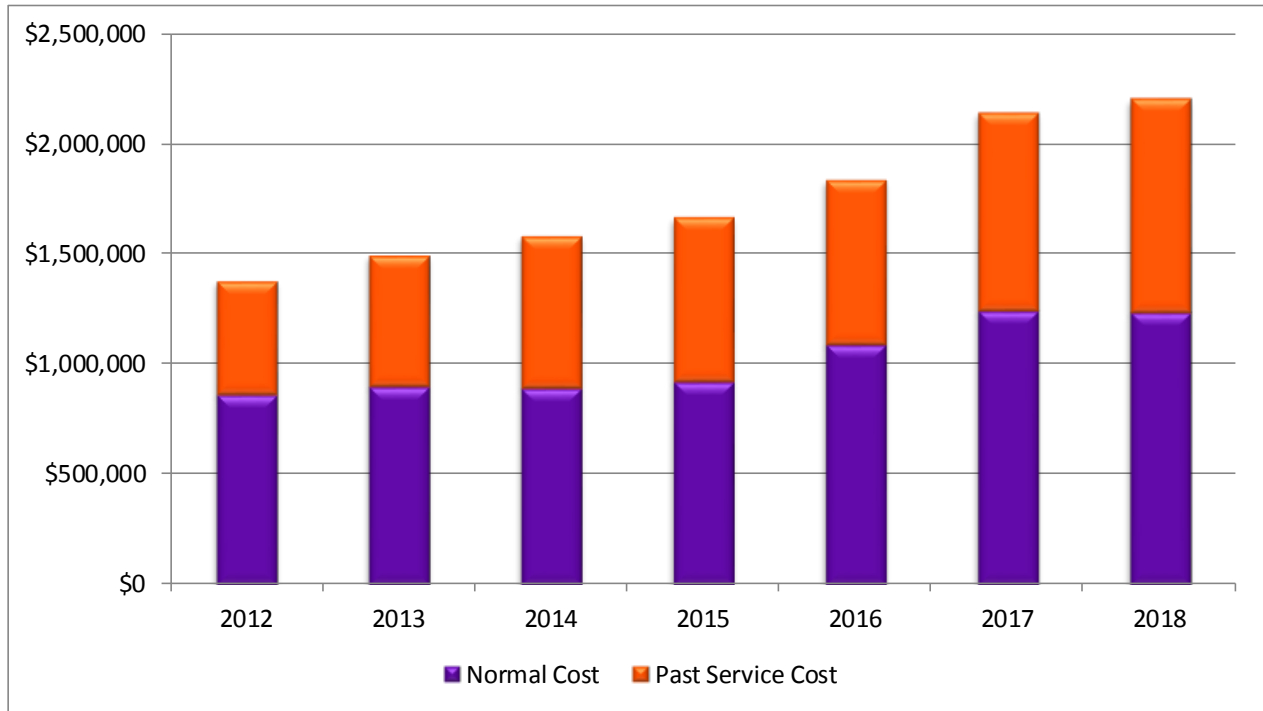


Determination of Normal Cost and Actuarially Determined Employer Contribution

	July 1, 2016		July 1, 2015	
	Cost	Percent of payroll	Cost	Percent of payroll
Gross normal cost	\$2,413,778	12.5%	\$2,397,000	12.5%
Estimated employee contributions	(1,251,712)	-6.5%	(1,253,000)	-6.5%
Estimated administrative expenses	40,000	0.2%	60,000	0.3%
City's normal cost	1,202,066	6.2%	1,204,000	6.3%
Amortization of unfunded accrued liability	972,384	5.1%	907,000	4.7%
Contribution before adjustment as of the valuation date	2,174,450	11.3%	2,111,000	11.0%
Contribution rounded to nearest \$1,000	2,174,000		2,111,000	
Estimated valuation year payroll	19,310,177		19,223,778	
Fiscal year ending	2018		2017	
Adjustment for interest and inflation	32,000		34,000	
Actuarially determined employer contribution	2,206,000		2,145,000	



Actuarially Determined Employer Contribution





Development of Asset Values

Summary of Fund Activity	
1. Beginning market value of assets July 1, 2015	
Trust assets	\$56,961,858
2. Contributions	
City contributions during year	1,872,461
Employee contributions during year	1,200,202
Total for plan year	3,072,663
3. Disbursements	
Benefit payments during year	2,929,747
Administrative expenses during year	33,778
Total for plan year	2,963,525
4. Net investment return	
Interest and dividends	978,302
Net appreciation (depreciation)	(2,904,781)
Investment-related expenses	(18,750)
Total for plan year	(1,945,229)
5. Ending market value of assets July 1, 2016	
Trust assets: (1) + (2) - (3) + (4)	55,125,767
6. Approximate rate of return	
	-3.3%



Determination of the Actuarial Value of Assets	
1. Actuarial value of assets July 1, 2015	\$ 59,000,012
2. City contributions during 2015-2016	1,872,461
3. Employee contributions during 2015-2016	1,200,202
4. Benefit payments and administrative expenses during 2015-2016	(2,963,525)
5. Expected return during 2015-2016	<u>4,500,506</u>
6. Expected actuarial value of assets July 1, 2016	63,609,656
7. Market value of assets July 1, 2016	55,125,767
8. Appreciation (depreciation) recognized: 20% x [(7) - (6)]	(1,696,778)
9. Preliminary actuarial value of assets July 1, 2016: (6) + (8)	61,912,878
10. Preliminary actuarial value of assets as a percentage of market value of assets	112.3%
11. Actuarial value of assets July 1, 2016	61,912,878
2015-2016 return on actuarial value of assets	4.7%

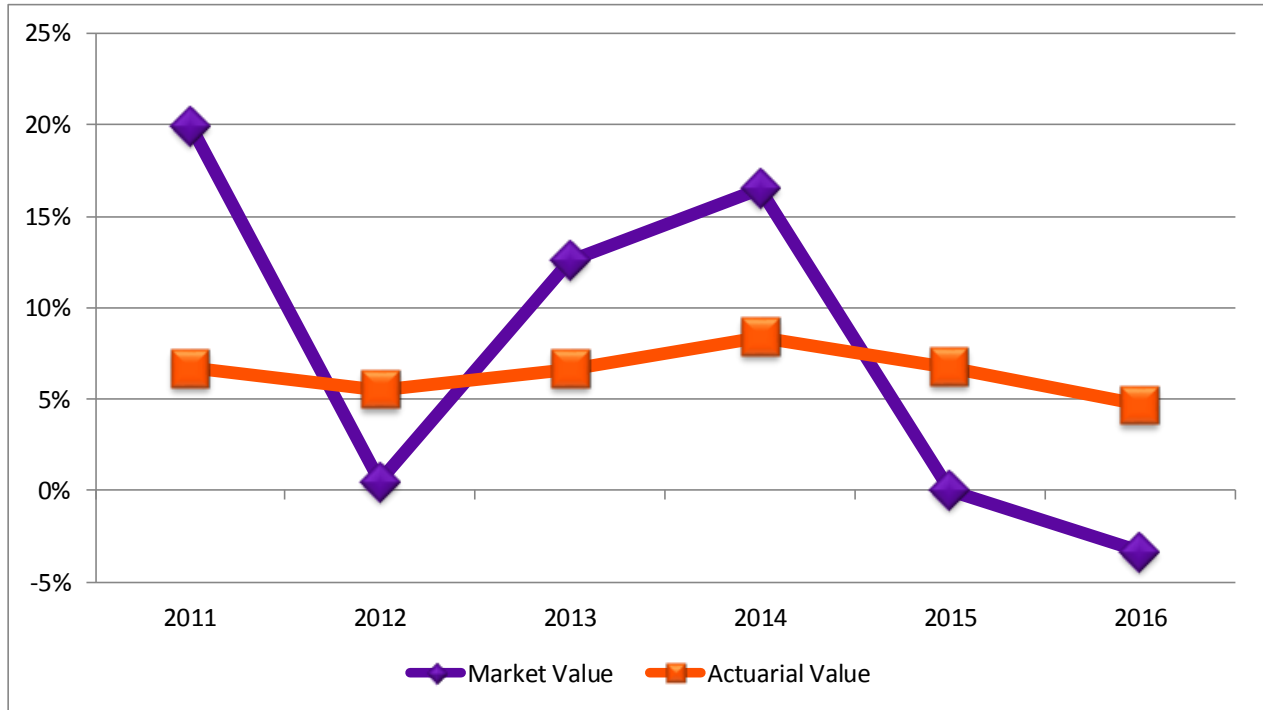


Rate of Return on Market Value of Assets				
Period Ending June 30	Average Annual Effective Rate of Return			
	1 Year	3 Years	5 Years	10 Years
2007	N/A	N/A	N/A	N/A
2008	N/A	N/A	N/A	N/A
2009	N/A	N/A	N/A	N/A
2010	N/A	N/A	N/A	N/A
2011	19.9%	N/A	N/A	N/A
2012	0.5%	N/A	N/A	N/A
2013	12.6%	10.7%	N/A	N/A
2014	16.5%	9.7%	N/A	N/A
2015	0.0%	9.5%	9.6%	N/A
2016	-3.3%	4.0%	5.0%	N/A

Rate of Return on Actuarial Value of Assets				
Period Ending June 30	Average Annual Effective Rate of Return			
	1 Year	3 Years	5 Years	10 Years
2007	N/A	N/A	N/A	N/A
2008	N/A	N/A	N/A	N/A
2009	N/A	N/A	N/A	N/A
2010	N/A	N/A	N/A	N/A
2011	6.7%	N/A	N/A	N/A
2012	5.5%	N/A	N/A	N/A
2013	6.6%	6.3%	N/A	N/A
2014	8.4%	6.8%	N/A	N/A
2015	6.7%	7.3%	6.8%	N/A
2016	4.7%	6.6%	6.4%	N/A



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
Domestic Fixed Income	15.00%	2.00%	0.30%
Domestic Equity	30.00%	5.25%	1.58%
International Equity	20.00%	5.50%	1.10%
Asset Allocation	35.00%	3.84%	1.34%
	100.00%		4.32%
Long-Term Inflation Expectation			3.00%
Long-Term Expected Nominal Return			7.32%

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

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

The information above is based on geometric means and does not reflect additional returns through investment selection, asset allocation and rebalancing. The results support a rate between 7.00% and 7.50%. An expected rate of return of 7.50% 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	9,227,101	972,384	15	9,227,101



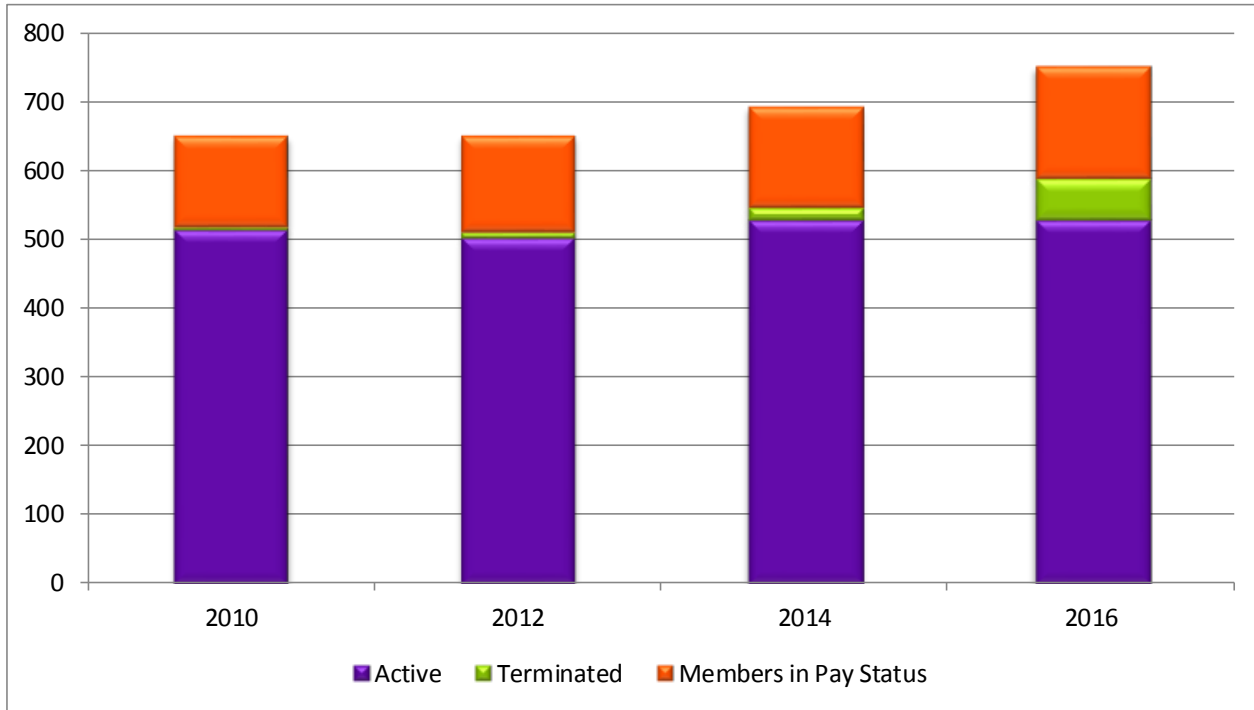
Member Data

The data reported by the Plan Sponsor for this valuation includes 528 active employees who met the Plan's minimum age and service requirements as of July 1, 2016.

Member Data				
	Active	Terminated vested	Members in pay status	Total
Total members July 1, 2014	527	20	147	694
Adjustments	0	+37	0	+37
Retirements	-23	-6	+29	0
Disabilities	0	N/A	0	0
Terminations				
Vested	-18	+18	N/A	0
Lump sum payments	-14	-8	N/A	-22
Due contributions only	0	N/A	N/A	0
Deaths				
With death benefit	0	0	0	0
Without death benefit	0	0	-19	-19
Transfers	0	0	N/A	0
Rehires	0	0	N/A	0
New beneficiaries	N/A	N/A	+6	+6
New entrants	+56	N/A	N/A	+56
Total members July 1, 2016	528	61	163	752



Member Counts by Status





Member Data				
	Active	Terminated vested	Members in pay status	Total
Average age				
July 1, 2014	51.6	59.8	76.5	
July 1, 2016	51.6	42.1	75.8	
Average service				
July 1, 2014	12.7	N/A	N/A	
July 1, 2016	13.2	N/A	N/A	
Covered employee payroll				
July 1, 2014	\$19,037,369	N/A	N/A	\$19,037,369
July 1, 2016	19,918,498	N/A	N/A	19,918,498
Total annual benefits				
July 1, 2014	N/A	\$84,085	\$2,668,744	\$2,752,829
July 1, 2016	N/A	71,492	2,805,685	2,877,177



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. The Actuarial Value is adjusted, if necessary, to be within the range of 70% and 130% of the Market Value of assets.

Actuarial Cost Method

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

Normal Cost: Under this method, the normal cost equals the total present value of the benefits accruing for all members during the upcoming year, increased to reflect salaries projected to the assumed retirement date.

Unfunded Accrued Liability: The actuarial accrued liability equals the present value of all benefits accrued to date, increased to reflect salaries for all active members. The actuarial accrued liability is reduced by plan assets to develop the unfunded accrued liability.

This amount is amortized over 15 years on an open basis.

Full actuarial valuations are performed every other year. For interim year valuations, the actuarial accrued liability and the normal cost are estimated based on the results of the prior full valuation.



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
- Inflation
- Payroll Growth
- Medicare Part B Reimbursement

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)

7.50%.

Inflation

2.75%.

Prior: 3.00%.

This assumption is based on long term (1926-2013) 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.

Mortality

RP-2000 Mortality Table with separate male and female rates, with blue collar adjustment, combined table for non-annuitants and annuitants, projected to the valuation date with Scale BB.

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

Mortality Improvement

Projected to date of decrement using Scale BB (generational mortality).

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

We have selected a mortality table commonly used by public pension systems (such as the State of Connecticut). The plan does not have sufficiently credible data on which to perform a mortality experience study.

Investment Return

7.5% per year (net of investment expenses).



Salary Scale

Based on age. Sample rates shown below.

Age	Rate	Prior:	Age	Rate
20	6.25%		20	6.50%
25	6.25%		25	6.50%
30	5.60%		30	5.85%
35	4.95%		35	5.20%
40	4.30%		40	4.55%
45	3.65%		45	3.90%
50	3.00%		50	3.25%
55+	2.75%		55+	3.00%

The assumption is based on input from the plan sponsor regarding future expectations, as well as knowledge that younger employees generally earn higher annual percentage increases than older employees.

Retirement

Assumed annual rates of retirement after the completion of 10 years of service are as follows:

Age	Retirement Rate
60	20%
61	5%
62-69	20%
70	100%

An additional 50% probability of retirement is added upon completion of 25 years of service.

Turnover

The following annual rates of turnover are assumed:

Age	Probability
20	5.44%
25	4.89%
30	3.70%
35	2.35%
40	1.13%
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	.00%

The actuarial assumptions in regards to rates of decrement shown above are based on standard tables modified for certain plan features such as eligibility for full and early retirement where applicable and input from the plan sponsor.

Deaths

For purposes of valuing the plan's pre-retirement death benefit, we assume all deaths are non-service related.

Payroll Growth

2.75%, only used to project normal cost to the next year.

Prior: 3.00%.

Survivorship

70% of employees assumed to be married, with wives 4 years younger than husbands.

Expenses

The normal cost includes a load for expected administrative expenses. Expenses are estimated based on actual amounts for the two prior years.

Sick Bank

50% of retirees are assumed to elect an annuity from the fund and 50% of retirees are assumed to elect a lump sum paid from the operating budget.

Medicare Part B Reimbursement

2.75% increase assumption each year.

Prior: 3.00%.

In total, the change in assumptions reflected in this valuation increased liabilities by 1.6%.



Summary of Plan Provisions

Pension Earnings

Salary in Final Year of Employment.

Normal Retirement

Eligibility: The earlier of 1) age 60 with 10 years of service, or 2) 25 years of service.

Benefit: Educational Assistants and Security Workers: 1.5% of pension earnings per year of service to a maximum of 33 years.

Custodians: 2.25% of pension earnings times year of service to a maximum of 33 years.

Limits on Annual Benefit

Maximum: None.

Minimum: None.

Disability – Non-Service Connected

Service Requirement: 10 years of service.

Benefit: 50% of pension earnings if less than 25 years of service. Accrued retirement benefit if more than 25 years of service.

Disability – Service Connected:

Service Requirement: None.

Benefit: 50% of pension earnings.

Pre-Retirement Death Benefit – Non Service Connected

Service Requirement: None.

Benefit: Return of contributions if less than 10 years of service. 50% of pension earnings with 10 years of service.

Pre-Retirement Death Benefit – Service Connected

Service Requirement: None.

Benefit: 50% of pension earnings.

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).



Vesting in Accrued Benefit

Eligibility: 10 years of service.

Benefit: Accrued retirement benefit.

Termination Benefit

Accumulated contributions as lump sum, if not vested.

Employee Contributions

5% of salary; no contributions for those with 33 or more years of service (7% for Custodians with a 33 year maximum).

Additional Retirement Benefits

Employees can trade in up to 125 days of sick leave for additional pension credit. Each 25 days grants an additional 1.5% of salary up to a maximum of 7.5%.

Educational Assistants and Security Workers are not eligible for this additional retirement benefit.