



CONSULTING GROUP



# A DEFINED BENEFIT ACTUARIAL VALUATION

*For:*

**City of Woonsocket, Rhode Island  
Policemen's Pension Fund  
Firemen's Pension Fund**

*As of:*

July 1, 2016

*Prepared by:*  
USI Consulting Group



**CONSULTING GROUP**

November 16, 2016

USI Consulting Group  
95 Glastonbury Blvd., Suite 102  
Glastonbury, CT 06033  
www.usi.com  
Phone: 860.633.5283  
Fax: 860.368.2112

**CONFIDENTIAL**

Ms. Chris Chamberlain  
City of Woonsocket  
169 Main Street  
Woonsocket, RI 02895

Re: City of Woonsocket, Rhode Island Firemen's Pension Fund and Policemen's Pension Fund

Dear Chris:

We are pleased to present our Actuarial Valuation Report for the Plan Year beginning July 1, 2016. A summary of the principal results of the valuation is provided for your convenience on pages 1 through 4. Details supporting GASB cost calculations were provided in a separate report.

We have reflected the cost of living adjustment (COLA) pattern and contribution schedule approved by the Budget Commission, outlined in Exhibit I. The scheduled employer contribution for the year ending June 30, 2017 is \$3,721,000. As outlined on page 8, the approved contribution schedule will no longer fully fund the plan within the targeted 22 year period. Furthermore, this schedule is no longer expected to allow for attainment of an 80% funded status during the projection period and therefore the 3% COLA is not expected to take effect.

As an alternative to the approved contribution schedule, we also present the schedule outlined in Exhibit II. This schedule is based on a 5.0% return on assets assumption, an assumption that we feel is more appropriate than the 7.5% currently in use. This schedule also reflects the adverse plan experience since the original schedule was developed. The contribution schedule illustrates the fixed annual deposit of \$6,210,000 needed to fully fund the plan in the targeted 22 year period (22 years starting with the 7/1/2012 plan year). However, please note that annual asset and liability gains and losses will continue to impact the funded status of the plan and the estimated \$6,210,000 may need to be adjusted in future years to capture these fluctuations.

A second alternative contribution of \$10,962,653, illustrated on page 8, assumes a 5-year amortization of the Unfunded Accrued Liability. Please note this amount still assumes a 7.5% discount rate.

The Accumulated Benefit Obligation, valued using 7.5%, as of July 1, 2016 is \$87,089,247. For comparison, the same liability valued at 5.0% is \$109,503,500. We strongly recommend a decrease to the current discount rate assumption. Based on the plan's current asset allocation and the experience study just released, 5.0% appears to be a more appropriate assumption.

I would be happy to answer any questions you may have regarding this report.

Sincerely,

USI Consulting Group

  
Jaime Packer, ASA, EA, MAAA  
Associate Vice President and Actuary

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**CITY OF WOONSOCKET, RHODE ISLAND  
FIREMEN'S PENSION FUND  
POLICEMEN'S PENSION FUND**

**VALUATION AS OF JULY 1, 2016**

**PRINCIPAL RESULTS OF THE VALUATION**

Below is a summary of the principal results of this year's valuation compared with the previous year's valuation. Amounts for the previous year reflect the actuarial cost method, assumptions and plan benefits in effect at that time.

<b><u>CONTRIBUTION LIMITATIONS</u></b>	<b>As of July 1, 2015</b>	<b>As of July 1, 2016</b>
Actuarially Determined Contribution (Exhibit II)	\$5,815,000	\$6,210,000
Approved Budgetary Contribution (Exhibit I)	\$3,633,000	\$3,721,000
Covered Payroll	N/A	N/A
Alternate Employer Contribution	\$10,278,983	\$10,962,653
<b><u>SUPPORTING INFORMATION</u></b>		
Market Value of Assets	\$42,483,175	\$38,593,619
Actuarial Value of Assets	\$46,413,001	\$42,735,614
Present Value of Accumulated Benefits	\$88,000,585	\$87,089,247
Accrued Benefit Funding Ratio – Market Value of Assets as a Percentage of Present Value of Accumulated Benefits	48.28%	44.32%
Present Value of Future Benefits	\$88,000,585	\$87,089,247
Projected Benefit Funding Ratio – Market Value of Assets as a Percentage of Present Value of Future Benefits	48.28%	44.32%
Number of Lives Included in the Valuation	236	231
Discount Rate	7.50%	7.50% *

\*As detailed in the experience study, we strongly recommend a decrease to the current discount rate assumption. A 5.0% assumption appears to be more supportable based on the plan's current asset allocation, however, please discuss this in more detail with the plan's investment advisor. For comparison, the Present Value of Accumulated Benefits valued at 5.0% is \$109,503,500.

**CITY OF WOONSOCKET, RHODE ISLAND  
FIREMEN'S PENSION FUND  
POLICEMEN'S PENSION FUND**

**VALUATION AS OF JULY 1, 2016**

**EXECUTIVE SUMMARY**

**Purpose and Scope**

The principal purposes of this actuarial valuation report are:

1. To present our calculations of the minimum suggested contribution and the accrued liability for the plan year beginning July 1, 2016 and
2. To review plan experience during the plan year ending June 30, 2016 and the funded status of the plan as of June 30, 2016.

The valuation is based upon employee data provided as of June 30, 2016 and financial information provided by the City of Woonsocket as of June 30, 2016. This data was not audited or otherwise verified by us other than for tests of reasonable consistency with prior year data.

Future measurements may differ significantly from the information contained within this report. These measurements will be based on the market value of assets, which varies based on the underlying portfolio experience, as well as plan sponsor contributions, benefit payments and expenses paid from plan assets. Liability calculations will be produced in accordance with current census data, as well as the interest rates and mortality tables in effect at that time. There has been no analysis of potential future impacts associated with this report.

**Actuarial Methods and Assumptions**

The assumptions reflect those used in the projection scenario completed January 30, 2015 shown in Exhibit I. These assumptions remain unchanged from those used in the July 1, 2015 actuarial valuation report.

Similar to last year, the asset smoothing method results in an actuarial value of assets that is greater than the market value of assets. This is caused by the investment losses in three of the last four plan years. Please note that the smoothing method serves only to mitigate the volatility of year-to-year investment performance. The method recognizes each year's investment gain or loss over a five year period; it does not ignore the current market value, but only adjusts the timing of its recognition.

**Plan Experience**

As of July 1, 2016, there are no active participants. There are 231 pensioners.

On a market value basis, the investment loss was \$2,786,852. This loss will be recognized over five years. See page 6 for details.

As discussed above, the actuarial value of assets includes recognition of investment gains/losses over five years. There is also a 20% corridor around the market value of assets. The actuarial value of assets decreased from \$46,413,001 last year to \$42,735,614 as of July 1, 2016. This reflects an investment loss of about \$2,870,000 on the actuarial value of assets.

**CITY OF WOONSOCKET, RHODE ISLAND  
FIREMEN'S PENSION FUND  
POLICEMEN'S PENSION FUND**

**VALUATION AS OF JULY 1, 2016**

**EXECUTIVE SUMMARY (continued)**

**Plan Experience (continued)**

There was a liability loss of approximately \$537,000, mostly due to benefit data clean-up. In the aggregate, the Plan experienced an actuarial loss of about \$3,407,000. The following is a history of the Funds' Market and Actuarial Value of Assets over the last several years:

	Market Value of Assets	Actuarial Value of Assets
7/1/2016	\$38,593,619	\$42,735,614
7/1/2015	\$42,483,175	\$46,413,001
7/1/2014	\$47,108,903	\$48,567,118
7/1/2013	\$47,825,978	\$48,760,303
7/1/2012	\$52,780,570	\$55,902,219
7/1/2011	\$61,980,287	\$65,313,250

A comparison of the actual Actuarial Value of Assets as of 7/1/2016 (\$42,735,614) to the anticipated Actuarial Value of Assets as of 7/1/2016 as projected in Exhibit I (\$44,389,000) illustrates a deficit of \$1,653,000. The Budget Commission approved schedule in Exhibit I assumes an investment return of 7.5% annually on the market value of assets. The market value of assets for the past plan year actually returned 1.03%. The full impact of this loss is mitigated by the asset smoothing methodology.

**Plan Contributions**

The expected employer contribution for the plan year commencing on July 1, 2016 is \$3,721,000, based on the Budget Commission's approved contribution schedule. Exhibit I outlines the original cost of living adjustment (COLA) pattern and contribution schedule approved by the Budget Commission. Page 8 updates this schedule based on current assets and liabilities. Based on this update, the approved contribution schedule will no longer fully fund the plan within the targeted 22 year period. Furthermore, this schedule is no longer expected to allow for attainment of an 80% funded status during the projection period and therefore the 3% COLA is not expected to take effect. This result is mainly due to the less than anticipated asset performance during the last plan year.

The current investment return assumption (and discount rate) is 7.5%. The historical returns for the plan as well as the current investment allocation may not support this rate. This is further explored in the recent experience study for the Plan. In Exhibit II, we present results using an alternative investment return/discount rate of 5.0%, which is more consistent with expectations discussed in the experience study. The level fixed contribution of \$6,210,000 shown meets the state's requirements to fully fund the Plan within twenty-two years (22 years starting with the 7/1/2012 plan year). However, please note that annual asset and liability gains and losses will continue to impact the funded status of the plan and the estimated \$6,210,000 may need to be adjusted in future years to capture these fluctuations.

A second alternative contribution of \$10,962,653, illustrated on page 8, assumes a five-year amortization of the Unfunded Accrued Liability.

**CITY OF WOONSOCKET, RHODE ISLAND  
FIREMEN'S PENSION FUND  
POLICEMEN'S PENSION FUND**

**VALUATION AS OF JULY 1, 2016**

**EXECUTIVE SUMMARY (continued)**

**Funded Status**

Market value of assets, as a percentage of the present value of accrued benefits, decreased from 48.28% as of July 1, 2015 to 44.32% as of July 1, 2016. This decrease is due to both the asset under performance and loss due to data corrections. The funded ratio may not be appropriate for assessing the need for or the amount of future contributions, based on the assumptions stated in this report. The funded ratio uses a liability calculated by using a discount rate of 7.5%, but a liability calculated by using a discount rate of 5.0% would be more appropriate. The funded ratio will be different if measuring actuarial value of assets.

**Pension Benefit Obligation**

The Accumulated Benefit Obligation as of July 1, 2016 is \$87,089,247 as compared to \$88,000,585 last year. This information, including a reconciliation from the prior year, is located on page 13 of this report. For comparison, the same liability valued at 5.0% is \$109,503,500. As discussed, we strongly recommend a decrease to the current discount rate assumption. Based on the plan's current asset allocation and the experience study just released, 5.0% appears to be a more appropriate assumption.

**Actuarial Certification**

This report has been prepared in accordance with generally accepted actuarial standards and procedures and conforms to the Guidelines for Professional Conduct of the American Academy of Actuaries. It is based on the employee and financial data submitted to USI Consulting Group by the plan sponsor and the retirement plan provisions outlined herein.

There exists no relationship with the plan or the plan sponsor that would impair the objectivity of our work.

I, Jaime Packer am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

USI Consulting Group



Jaime Packer, ASA, EA, MAAA  
Associate Vice President and Actuary



Diane Padernacht  
Associate Vice President and Actuarial Manager



Yevgeny Venetsky  
Actuarial Analyst

**CITY OF WOONSOCKET, RHODE ISLAND  
FIREMEN'S PENSION FUND  
POLICEMEN'S PENSION FUND**

**FINANCIAL STATEMENT AS OF JULY 1, 2016**

**SECTION I: STATEMENT OF ASSETS**

<b>Assets</b>	<u>July 1, 2015</u>	<u>July 1, 2016</u>
Receivables	0	0
DAA Account #1061636	5,534,967	5,144,209
Hartford Account #1061100201	13,289,636	11,536,148
State Street Account #1061100117	9,301,779	8,569,120
Liquidity Account #1061580	5,734,185	5,122,662
Robeco Boston Account #1061101	6,283,422	6,249,182
Vanguard Fund Account #1061112	2,339,186	1,972,298
Other Assets	<u>0</u>	<u>0</u>
 Total Assets	 42,483,175	 38,593,619
 <b>Liabilities and Net Assets</b>		
Payables	0	0
Acquisition Indebtedness	0	0
Other Liabilities	<u>0</u>	<u>0</u>
Total Liabilities	0	0
 Net Assets	 42,483,175	 38,593,619
 <b>Statement of Receipts and Disbursements</b>		
Net Assets at Beginning of Year		42,483,175
Contributions Received or Receivable		
Employer	3,633,301	
Employee	482	
Noncash Contributions	<u>0</u>	3,633,782
Net Investment Return		<u>415,057</u>
Total Income		4,048,839
Distribution of Benefits		
Directly to Participants or Beneficiaries	7,762,631	
Other	<u>0</u>	7,762,631
Investment Expenses		100,100
Administrative Expenses		<u>75,664</u>
Total Expenses		7,938,395
 Net Increase (Decrease)		 (3,889,556)
 Net Assets at Year End		 38,593,619



**CITY OF WOONSOCKET, RHODE ISLAND  
FIREMEN'S PENSION FUND  
POLICEMEN'S PENSION FUND**

**FINANCIAL STATEMENT AS OF JULY 1, 2016**

**SECTION II: DEVELOPMENT OF ASSET GAIN/(LOSS)**

A. Market Value assets prior year:	42,483,175
B. Interest at prior valuation interest rate on A to current date:	3,186,238
C. Contributions for prior year:	3,633,782
D. Interest at prior valuation interest rate on C to current date:	125,743
E. Benefits Paid:	(7,762,631)
F. Interest at prior valuation interest rate on E to current date:	(285,836)
G. Expected Assets (Sum A through F):	41,380,471
H. Actual Assets:	38,593,619
I. Asset Gain/(Loss) (H - G):	(2,786,852)

**SECTION III: DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

Adjustment to recognize investment gain/(loss) over 5-year period:

Year Ending <u>June 30</u>	Investment <u>Gain/(Loss)</u>	Adjustment <u>Factor</u>	<u>Adjustment</u>
2013	(1,205,729)	1/5	(241,146)
2014	242,844	2/5	97,138
2015	(2,947,508)	3/5	(1,768,505)
2016	(2,786,852)	4/5	(2,229,482)
		Total Adjustment	(4,141,995)

Valuation Assets as of July, 1, 2016:

A. Market Value:	38,593,619
B. Total Adjustment:	<u>(4,141,995)</u>
C. Actuarial Value of Assets (Unlimited) [A - B]:	42,735,614
D. 80% of Market Value:	30,874,896
E. 120% of Market Value:	<u>46,312,343</u>
F. Actuarial Value of Assets, not less than D or more than E:	42,735,614

**CITY OF WOONSOCKET, RHODE ISLAND  
FIREMEN'S PENSION FUND  
POLICEMEN'S PENSION FUND**

**VALUATION RESULTS AS OF JULY 1, 2016**

**1. PRESENT VALUE OF FUTURE BENEFITS\***

The value of all projected retirement, death and disability benefits projected to be paid to current plan participants, discounted to the valuation date with interest and mortality rates.

	<u>Lives</u>	<u>Police</u>	<u>Fire</u>	<u>Total</u>
Active	0	0	0	0
Disabled	50	7,323,105	14,204,248	21,527,353
Retired	<u>181</u>	<u>21,512,821</u>	<u>44,049,073</u>	<u>65,561,894</u>
Totals	231	28,835,926	58,253,321	87,089,247

**2. ENTRY AGE ACCRUED LIABILITY\***

The portion of the present value of future benefits attributable to prior normal costs.

	<u>Police</u>	<u>Fire</u>	<u>Total</u>
Active	0	0	0
Disabled	7,323,105	14,204,248	21,527,353
Retired	<u>21,512,821</u>	<u>44,049,073</u>	<u>65,561,894</u>
Total	28,835,926	58,253,321	87,089,247

**3. ACTUARIAL VALUE OF ASSETS** 42,735,614

**4. UNFUNDED ACCRUED LIABILITY (2 - 3)** 44,353,633

**5. ENTRY AGE NORMAL COST**

The amount required to fund the present value of benefits as a level percent of pay from entry age to retirement age.

A. Employer Normal Cost	0
B. Expected Employee Contributions	<u>0</u>
C. Total Normal Cost	0

\*Liabilities reflect the annual cost of living adjustments illustrated on page 8.

**CITY OF WOONSOCKET, RHODE ISLAND  
FIREMEN'S PENSION FUND  
POLICEMEN'S PENSION FUND**

**CURRENT VALUATION - SCHEDULED CONTRIBUTIONS**

COLA for retirees: Alternate 0% and 2% until FYE 2023, then 2% unless attain 80% funded (then 3%)  
Investment Return: 7.50%

Fiscal Year Ending 6/30	Estimated Accrued Liability (AL)	Estimated Actuarial Assets	Unfunded AL	Budget Commission Approved		Funded %	Compound COLA
				Contribution Schedule*	Benefit Payments		
2017	87,089,000	42,736,000	44,353,000	3,721,000	8,103,000	49%	2%
2018	86,665,000	39,537,000	47,128,000	3,810,000	7,965,000	46%	0%
2019	84,683,000	36,686,000	47,997,000	3,901,000	7,954,000	43%	2%
2020	82,573,000	33,769,000	48,804,000	3,995,000	7,801,000	41%	0%
2021	80,473,000	31,575,000	48,898,000	4,091,000	7,772,000	39%	2%
2022	78,253,000	29,953,000	48,300,000	4,189,000	7,601,000	38%	0%
2023	76,051,000	28,497,000	47,554,000	4,289,000	7,553,000	37%	2%
2024	73,743,000	27,093,000	46,650,000	4,392,000	7,494,000	37%	2%
2025	71,330,000	25,760,000	45,570,000	4,498,000	7,422,000	36%	2%
2026	68,817,000	24,518,000	44,299,000	4,606,000	7,337,000	36%	2%
2027	66,210,000	23,389,000	42,821,000	4,716,000	7,239,000	35%	2%
2028	63,663,000	22,399,000	41,264,000	4,830,000	7,126,000	35%	2%
2029	60,901,000	21,575,000	39,326,000	4,945,000	6,997,000	35%	2%
2030	58,071,000	20,949,000	37,122,000	5,064,000	6,852,000	36%	2%
2031	55,185,000	20,555,000	34,630,000	5,186,000	6,690,000	37%	2%
2032	52,255,000	20,431,000	31,824,000	5,310,000	6,512,000	39%	2%
2033	49,296,000	20,617,000	28,679,000	5,438,000	6,316,000	42%	2%
2034	46,323,000	21,157,000	25,166,000	5,500,000	6,104,000	46%	2%
2035	43,352,000	22,027,000	21,325,000	0	5,877,000	51%	2%
2036	40,398,000	17,495,000	22,903,000	0	5,634,000	43%	2%

Note: The Accrued Liability, Assets, Unfunded AL, and Funded Percentages are all determined as of the beginning of the fiscal year and the Contributions assume a mid-year deposit.

\*See Exhibit I for development. Note that based on current assets and liabilities, the current funding schedule is no longer expected to fully fund the plan within the projection period. The 3% COLA is not expected to take effect as the plan is not projected to achieve an 80% funded status.

**ALTERNATIVE SCHEDULED CONTRIBUTION**

(1) Employer Normal Cost	0
(2) 5 Year Amortization of \$44,353,633	10,197,817
(3) Maximum Recommended Contribution at beginning of Plan Year = (1) + (2), not less than zero	10,197,817
(4) Interest Charge on (1) and (2) to Plan Year End	<u>764,836</u>
(5) Total Recommended Contribution at Plan Year End = (3) + (4)	10,962,653

**CITY OF WOONSOCKET, RHODE ISLAND  
FIREMEN'S PENSION FUND  
POLICEMEN'S PENSION FUND**

**PARTICIPANT DATA AS OF JULY 1, 2016**

Retired participants, beneficiaries, contingent annuitants and disabled participants	
Number	231
Average monthly benefit	\$2,945.12
Average attained age	72.97

**RECONCILIATION OF PARTICIPANT STATUS**

	<u>Active</u>	Deferred <u>Vested</u>	<u>Disabled</u>	<u>Retired</u>	<u>Total</u>
Prior Valuation	0	0	43	193	236
Terminated - vested	0	0	0	0	0
Terminated - not vested	0	0	0	0	0
Retired	0	0	0	0	0
Survivor Annuitant	0	0	0	2	2
Deaths	0	0	0	(7)	(7)
Data Corrections	0	0	7	(7)	0
QDRO	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Current Valuation	0	0	50	181	231
Fire	0	0	30	106	136
Police	0	0	20	75	95

**CITY OF WOONSOCKET, RHODE ISLAND  
FIREMEN'S PENSION FUND**

**SUMMARY OF PLAN PROVISIONS**

<b><u>Effective Date</u></b>	January 1, 1960
<b><u>Plan Year Beginning</u></b>	July 1, 2016
<b><u>Pensioner's Benefits</u></b>	All remaining participants in the plan are currently in payment status. Benefits were determined by the plan sponsor, upon commencement, in accordance with the terms of the plan.
<b><u>Cost-of-Living Provision</u></b>	All pensioners and alternate payees (but not beneficiaries or Ronald Pelletier) are eligible for a variable COLA depending on the pre-determined schedule and the plan's funding level. The COLA is described on page 8 and in Exhibits I and II.
<b><u>Eligibility</u></b>	<p>There are no age or service requirements. All members of the Fire Department hired prior to July 1, 1985 are eligible.</p> <p>Members hired after July 1, 1985 participate in the State Retirement System.</p>
<b><u>Employee Contributions</u></b>	8% of annual salary during the plan year.
<b><u>Normal Retirement Date</u></b>	Upon completion of 20 years of service a member is eligible to retire.
<b><u>Normal Retirement Benefit</u></b>	
Benefit Formula	50% of current annual salary plus 2.5% of salary for each year worked in excess of 20 years up to a maximum of 75% of salary.
Normal Form of Benefit	66.67% joint and survivor annuity.
<b><u>Pre-Retirement Death Benefit</u></b>	<p>For a work related death, the member's beneficiary is entitled to receive a benefit of 50% of pay plus an additional 10% of pay for each minor child up to a maximum of 66.7% of pay.</p> <p>For a non-work related death, the member's beneficiary is entitled to receive a benefit of 30% of pay plus an additional 10% of pay for each minor child up to a maximum of 50% of pay.</p>
<b><u>Disability Benefit</u></b>	66.7% of current salary for a work related disablement and 50% of current salary for a non-work related disablement.

**CITY OF WOONSOCKET, RHODE ISLAND  
POLICEMEN'S PENSION FUND**

**SUMMARY OF PLAN PROVISIONS**

<b><u>Plan Year Beginning</u></b>	July 1, 2016
<b><u>Pensioner's Benefits</u></b>	All remaining participants in the plan are currently in payment status. Benefits were determined by the plan sponsor, upon commencement, in accordance with the terms of the plan.
<b><u>Cost-of-Living Provision</u></b>	All pensioners and alternate payees (but not beneficiaries, John Dethomas, Edward Hopkins or Albert Leclair) are eligible for a variable COLA depending on the pre-determined schedule and the plan's funding level. The COLA is described on page 8 and in Exhibits I and II.
<b><u>Eligibility</u></b>	<p>There are no age or service requirements. All members of the Police Department hired prior to July 1, 1980 are eligible.</p> <p>Members hired after July 1, 1980 participate in the State Retirement System.</p>
<b><u>Employee Contributions</u></b>	7% of annual salary during the plan year.
<b><u>Normal Retirement Date</u></b>	<p>Upon completion of 20 years of service a member is eligible to retire.</p> <p>Maximum normal retirement age is 65.</p>
<b><u>Normal Retirement Benefit</u></b>	
Benefit Formula	60% of current annual salary plus 2.0% of salary for each year worked in excess of 20 years up to a maximum of 70% of salary.
Normal Form of Benefit	66.67% joint and survivor annuity.
<b><u>Cost-of-Living Provision</u></b>	Varying COLA depending on pre-determined schedule combined with the plan's funding level.
<b><u>Pre-Retirement Death Benefit</u></b>	<p>For a work related death, the member's beneficiary is entitled to receive a benefit of 50% of pay plus an additional 10% of pay for each minor child up to a maximum of 66.7% of pay.</p> <p>For a non-work related death, the member's beneficiary is entitled to receive a benefit of 30% of pay plus an additional 10% of pay for each minor child up to a maximum of 50% of pay.</p>
<b><u>Disability Benefit</u></b>	66.7% of current salary for a work related disablement and 50% of current salary for a non-work related disablement.

**CITY OF WOONSOCKET, RHODE ISLAND  
POLICEMEN'S PENSION FUND  
FIREMEN'S PENSION FUND**

**SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS**

**ACTUARIAL COST METHOD**

Individual entry age normal cost. Under this method, the annual cost is equal to the normal cost, plus amortization of unfunded accrued liabilities over a fixed period of years selected within the minimum (10 years) and maximum (5 to 30 years) periods permitted by law.

The normal cost is zero because all participants are retired.

The actuarial accrued liability is the accumulation, based on the actuarial assumptions, of all assumed prior normal costs. Thus, it represents the amount of reserves, which would be held by the plan, had it always been in effect for the present group of participants and had plan experience followed that predicted by the actuarial assumptions. The unfunded accrued liability is the excess, if any, of the accrued liability over the plan assets.

The actuarially determined contribution is calculated in accordance with the Funding Improvement Plan developed by the Pension Study Commission. The intent is to fully fund the plan in twenty-two years starting with the plan year ending 6/30/2013. However, as noted in this report, based on plan experience, this goal is not expected to be met using the current contribution schedule.

Attribution – Because all participants are in pay status, there is no further attribution and all benefits are included in the accrued liability as of the valuation date. All benefits are vested.

**ACTUARIAL ASSUMPTIONS**

**Post-Retirement**

Male and Female Mortality – RP-2000 Mortality Table, projected to 2010 using scale AA to form a new base table with fully generational projection at scale AA going forward. The mortality table is further modified to assume 115% of the male rates and 95% of the female rates.

The generational projection and scaling of the male and female rates is consistent with the assumptions utilized for the Employees' Retirement System of Rhode Island. Furthermore, an experience study was completed in 2015 which provides support of continued use of this table for this population.

Investment Return – 7.50% per annum

The current investment return assumption (and discount rate) is 7.50%. The historical returns for the plan as well as the current investment allocation may not support this rate. This is further reviewed in the recent experience study for the Plan. We have proposed 5.00% as an alternative investment return assumption.

Expense Loading – \$200,000 per year for one year and then reduced by 5% per year, paid mid-year.

Assumed annual benefit increases (COLA) – Based on plan provisions; please refer to page 8 for a projected schedule.

Pre-Retirement Assumptions: N/A – All participants are in pay status.

**ASSET VALUATION**

Market value of plan assets adjusted to phase in asset gains and losses from July 1, 2013 over a five-year period at a rate of 20% per year. Valuation assets are further limited to a 20% corridor around market value.

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POLICEMEN'S PENSION FUND**

**ACCUMULATED PLAN BENEFITS**

The actuarial assumptions are set forth in the Summary of Actuarial Methods and Assumptions section of this report.

Actuarial Present Values of Accumulated Plan

<u>Benefits (Accumulated Benefit Obligation):</u>	<u>7/1/2015</u>	<u>7/1/2016</u>
Vested Benefits		
Participants currently receiving payments	88,000,585	87,089,247
Other Participants		
Active Employees	0	0
Deferred Vested Terminated Employees	<u>0</u>	<u>0</u>
Total-Other Participants	<u>0</u>	<u>0</u>
Total Vested Benefits	88,000,585	87,089,247
Nonvested Benefits	<u>0</u>	<u>0</u>
Total Actuarial Present Values of Accumulated Plan Benefits	88,000,585	87,089,247
Projected Benefit Obligation	88,000,585	87,089,247

Statement of Changes in Accumulated Plan Benefits

Actuarial Present Value of Accumulated Plan Benefits at Beginning of Year		88,000,585
Increase (Decrease) Attributable to:		
Benefits Paid		(7,762,631)
Interest Due to Change in the Discount Period		6,314,208
Change in the Discount Rate		0
Plan Amendment		0
Assumption Change		0
Additional benefits earned, including experience gains and losses		<u>537,085</u>
Actuarial Present Value of Accumulated Plan Benefits at End of Year		87,089,247

Discount Assumption	7.50%	7.50%
Mortality Assumption	RP2000 adjusted	RP2000 adjusted
COLA Assumption	Alternating 0%, 2% until FYE 2023, 2% then 3% when 80% funded	Alternating 0%, 2% until FYE 2023, 2% then 3% when 80% funded



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**EXHIBIT I**

**BUDGET COMMISSION APPROVED FUNDING SCHEDULE**

**Scenario #2014-9-12 updated 2014-10-11 and 2015-1-30**

Contribution Pattern: 2.4% annual increases; at least 100% funded in 22 years (starting with the 7/1/2012 plan year)

Investment Return: 7.50%; COLA applied to retirees only;

Compound COLA Pattern: Alternate 0% and 2% until FYE 2023 then 2% unless attain 80% funded (then 3%)

RP2000 Mortality Table, projected to 2010 and then fully generational with 115% male and 95% female

Fiscal Year Ending 6/30	Estimated Accrued Liability (AL)	Estimated		Annual and Scheduled		Funded %	Compound COLA
		Actuarial Assets	Unfunded AL	Required Contribution	Benefit Payments		
2015	90,478,000	48,567,000	41,911,000	3,548,000	8,187,000	54%	2%/0%*
2016	88,742,000	47,194,000	41,548,000	3,633,000	8,059,000	53%	0%
2017	87,009,000	44,389,000	42,620,000	3,721,000	8,062,000	51%	2%
2018	86,621,000	42,803,000	43,818,000	3,810,000	7,918,000	49%	0%
2019	84,685,000	41,605,000	43,080,000	3,901,000	7,904,000	49%	2%
2020	82,626,000	40,384,000	42,242,000	3,995,000	7,745,000	49%	0%
2021	80,588,000	39,344,000	41,244,000	4,091,000	7,714,000	49%	2%
2022	78,438,000	38,365,000	40,073,000	4,189,000	7,538,000	49%	0%
2023	76,317,000	37,606,000	38,711,000	4,289,000	7,487,000	49%	2%
2024	74,097,000	36,954,000	37,143,000	4,392,000	7,425,000	50%	2%
2025	71,781,000	36,431,000	35,350,000	4,498,000	7,352,000	51%	2%
2026	69,375,000	36,062,000	33,313,000	4,606,000	7,265,000	52%	2%
2027	66,885,000	35,875,000	31,010,000	4,716,000	7,163,000	54%	2%
2028	64,320,000	35,899,000	28,421,000	4,830,000	7,047,000	56%	2%
2029	61,688,000	36,169,000	25,519,000	4,945,000	6,915,000	59%	2%
2030	59,003,000	36,723,000	22,280,000	5,064,000	6,766,000	62%	2%
2031	56,276,000	37,601,000	18,675,000	5,186,000	6,600,000	67%	2%
2032	53,522,000	38,849,000	14,673,000	5,310,000	6,416,000	73%	2%
2033	50,757,000	40,515,000	10,242,000	5,438,000	6,272,000	80%	3%
2034	47,939,000	42,593,000	5,346,000	5,500,000	6,109,000	89%	3%
2035	45,083,000	45,065,000	18,000	0	5,926,000	100%	3%
2036	42,208,000	42,210,000	(2,000)	0	5,724,000	100%	3%

\*COLA for selected members

Note: The Accrued Liability, Assets, Unfunded AL, and Funded Percentages are all determined as of the beginning of the fiscal year and the Annual Contributions are determined assuming a mid-year deposit.

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**ALTERNATIVE VALUATION - FULLY FUNDING PLAN IN 22 YEARS**

COLA for retirees: Alternate 0% and 2% until FYE 2023, then 2% unless attain 80% funded (then 3%)  
Investment Return: 5.00%

Fiscal Year Ending 6/30	Estimated Accrued Liability (AL)	Estimated Actuarial Assets	Unfunded AL	Alternative Contribution Schedule	Benefit Payments	Funded %	Compound COLA
2017	111,453,000	42,736,000	68,717,000	6,210,000	8,103,000	38%	2%
2018	110,180,000	41,181,000	68,999,000	6,210,000	7,965,000	37%	0%
2019	107,353,000	40,007,000	67,346,000	6,210,000	7,954,000	37%	2%
2020	104,403,000	38,802,000	65,601,000	6,210,000	7,801,000	37%	0%
2021	101,470,000	38,349,000	63,121,000	6,210,000	7,772,000	38%	2%
2022	98,426,000	38,497,000	59,929,000	6,210,000	7,601,000	39%	0%
2023	95,410,000	38,835,000	56,575,000	6,210,000	7,553,000	41%	2%
2024	92,299,000	39,247,000	53,052,000	6,210,000	7,494,000	43%	2%
2025	89,099,000	39,748,000	49,351,000	6,210,000	7,422,000	45%	2%
2026	85,818,000	40,354,000	45,464,000	6,210,000	7,337,000	47%	2%
2027	82,464,000	41,084,000	41,380,000	6,210,000	7,239,000	50%	2%
2028	79,196,000	41,958,000	37,238,000	6,210,000	7,126,000	53%	2%
2029	75,740,000	42,998,000	32,742,000	6,210,000	6,997,000	57%	2%
2030	72,249,000	44,227,000	28,022,000	6,210,000	6,852,000	61%	2%
2031	68,736,000	45,671,000	23,065,000	6,210,000	6,690,000	66%	2%
2032	65,216,000	47,359,000	17,857,000	6,210,000	6,512,000	73%	2%
2033	61,148,000	49,319,000	11,829,000	6,210,000	6,316,000	81%	3%
2034	57,641,000	51,582,000	6,059,000	6,210,000	6,160,000	89%	3%
2035	54,123,000	54,123,000	0	0	5,984,000	100%	3%
2036	50,612,000	50,610,000	2,000	0	5,790,000	100%	3%

Note: The Accrued Liability, Assets, Unfunded AL, and Funded Percentages are all determined as of the beginning of the fiscal year and the Contributions assume a mid-year deposit.