



**CITY OF PAWTUCKET  
POLICE AND FIRE PENSION PLAN**

Actuarial Valuation Report  
July 1, 2014

**TABLE OF CONTENTS**

	<u>Page</u>
<b>REPORT SUMMARY</b>	
Highlights	1
Introduction	2
Actuarial Experience	3
<b>ACTUARIAL COSTS AND LIABILITIES</b>	
Normal Costs	4
Present Value of Actuarial Accrued Liabilities	5
Present Value of Future Benefits	6
<b>FUNDED STATUS AND APPROPRIATIONS</b>	
Market Value of Plan Assets	7
Unfunded Actuarial Accrued Liabilities	8
Appropriations	9
Appropriation Forecast	10
GASB Statements No. 25 and No. 27	12
<b>EXHIBITS</b>	
1 Age/Service Distribution with Salary	16
2 Retiree Distribution	17
3 Disabled Retiree Distribution	18
4 Distribution Forecast	19
5 Summary of Plan Provisions	20
6 Actuarial Methods and Assumptions	24
7 Glossary of Terms	29
<b>CERTIFICATION</b>	31
<b>OLD PLAN</b>	32

H:\Pawtucket\2014 Pension\2014 Pawtucket Val v2.xlsm\Inputs

**Report Summary:****Highlights for the "New Plan"****July 1, 2013****July 1, 2014**Contributions

Funding Schedule FY 2015	\$12,996,379	\$12,996,379
Funding Schedule FY 2016	13,636,326	13,630,085

Funded Ratios

GAS No. 25	34.0%	40.7%
------------	-------	-------

Participants

Actives	283	285
Retirees and Beneficiaries	344	344
Vested	0	0
Inactives	0	0
Disabled	<u>39</u>	<u>39</u>
Total	666	668

Payroll

Payroll of Active Members	\$19,551,974	\$19,453,527
Average Payroll	69,088	68,258

Normal Cost

Employer	3,739,881	2,963,708
Employee	1,391,544	1,427,936
Administrative Expenses	<u>45,000</u>	<u>45,000</u>
Total	5,176,425	4,436,644

Actuarial Accrued Liabilities

Actives	66,085,275	67,799,400
Retirees, Beneficiaries, Disabilities and Inactives	<u>177,699,289</u>	<u>170,925,716</u>
Total	243,784,564	238,725,116

Actuarial Value of Assets82,981,582      97,220,726Unfunded Actuarial Accrued Liabilities

\$160,802,982      \$141,504,390

## **Introduction**

The purpose of this report is to present the findings of an actuarial valuation as of July 1, 2014, of City of Pawtucket Police and Firefighters Pension Plan. Results are shown for the “New Plan” as well as the “Old Plan”. Firefighters who were hired prior to July 1, 1972 and police officers who were hired prior to July 1, 1973 are part of the “Old” plan.

The Old Plan has been frozen to new participants since July 1, 1973 and all of the “Old” plan participants are now retirees or beneficiaries. The City has been and will continue to fund the obligation of the Old Plan on a Pay-as-you-go basis. Although 6 of the participants receive COLAs, the expectation is that mortality will continue to decrease the City’s costs from year-to-year.

The actuarial valuation is based on:

- Provisions of Collective Bargaining Agreements with the Police and Firefighters unions.
- Employee data provided by the City
- Asset information reported the City
- Actuarial assumptions approved by the City

The report includes results under GASB Statements #25 and #27.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Any subsequent changes in plan provisions

### Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last two years, the total unfunded actuarial accrued liability decreased by 6.2% to \$141,504,390 from \$160,802,982. The decrease is the result of net favorable actuarial experience during the preceding years and changes in plan provisions for the Fire and Retired participants. The sources of actuarial (gains) and losses are as follows:

Assets	(1,868,666)
Salaries	(2,690,805)
Retirements	(1,047,108)
Terminations	(138,308)
Active Mortality	(90,710)
Disabilities	(367,848)
Inactive Mortality	<u>(2,933,732)</u>
Total Actuarial (Gains) and Losses	(9,137,177)
Change in COLAs for retirees	(7,116,844)
Change in plan provisions for Fire	<u>(3,478,047)</u>
Total change in Unfunded Accrued Liability	(19,732,068)

The changes to the plan provisions for Fire employees reduced the City's portion of the Normal Cost by \$805,753, to \$3,008,708.

## Actuarial Costs and Liabilities:

### "New Plan" Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

**Table I**

	<u>July 1, 2013</u>	<u>July 1, 2014</u>
Superannuation*	\$3,915,329	\$3,137,544
Termination	0	153,704
Death	196,075	173,128
Disability	1,020,021	927,268
Administrative Expenses	<u>45,000</u>	<u>45,000</u>
Total Normal Cost	5,176,425	4,436,644
% of Pay	26.5%	22.8%
Employee Contributions	1,391,544	1,427,936
% of Pay	7.1%	7.3%
Employer Normal Cost	\$3,784,881	\$3,008,708
% of Pay	19.4%	15.5%

H:\Pawtucket\2014 Pension\2014 Pawtucket Val v2.xlsm\Inputs

**"New Plan" Present Value of Actuarial Accrued Liabilities**

The actuarial accrued liabilities (AAL) represents today's value of all benefits earned by the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

**Table II**

	<u>July 1, 2013</u>	<u>July 1, 2014</u>
Actives		
Superannuations	\$64,335,109	\$65,743,967
Termination	0	(12,263)
Death	813,342	925,909
Disability	936,824	<u>1,141,787</u>
Subtotal	66,085,275	67,799,400
Retirees and Inactives		
Retirees and Beneficiaries	154,683,717	149,106,624
Vested	0	0
Terminated (Refund)	0	0
Disabled	<u>23,015,572</u>	<u>21,819,092</u>
Subtotal	177,699,289	170,925,716
Total	\$243,784,564	\$238,725,116

H:\Pawtucket\2014 Pension\2014 Pawtucket Val v2.xlsm\Inputs

**"New Plan" Present Value of Future Benefits**

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

**Table III**

	<u>July 1, 2013</u>	<u>July 1, 2014</u>
Actives		
Superannuation	\$104,987,484	\$96,705,405
Termination	\$0	1,400,916
Death	\$2,838,848	2,586,569
Disability	\$11,469,984	<u>10,053,703</u>
Subtotal	119,296,316	110,746,593
Retirees and Inactives		
Retirees and Beneficiaries	154,683,717	149,106,624
Vested	0	0
Terminated (Refund)	0	0
Disabled	<u>23,015,572</u>	<u>21,819,092</u>
Subtotal	177,699,289	170,925,716
Total	\$296,995,605	\$281,672,309



H:\Pawtucket\2014 Pension\2014 Pawtucket Val v2.xlsm\Inputs

## Funded Status and Appropriations:

### "New Plan" Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

**Table IV**

	<u>July 1, 2013</u>	<u>July 1, 2014</u>
Cash equivalents	\$4,688,660	\$3,721,656
Short term investments	0	0
Fixed income securities	22,021,743	23,653,667
Equities	56,013,799	69,521,856
International	0	0
Real Estate	0	0
Venture Capital	0	0
Other	0	0
Accounts receivable	281,401	326,357
Accounts payable	(24,021)	(2,810)
Accrued income	<u>0</u>	<u>0</u>
Total Market Value	\$82,981,582	\$97,220,726
Total Actuarial Value	\$82,981,582	\$97,220,726

**"New Plan" Unfunded Actuarial Accrued Liabilities**

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

**Table VI**

	<u>July 1, 2013</u>	<u>July 1, 2014</u>
Actuarial Accrued Liability	\$243,784,564	\$238,725,116
Actuarial Assets	<u>82,981,582</u>	<u>97,220,726</u>
Unfunded Actuarial Accrued Liability	\$160,802,982	\$141,504,390
Funded Status	34.0%	40.7%

H:\Pawtucket\2014 Pension\2014 Pawtucket Val v2.xlsm\Inputs

**"New Plan" Appropriations**

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the desire of the City of Pawtucket. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the unfunded actuarial accrued liability by June 30, 2035  
     \$ 141,504,390 over 21 years with 3.2% increasing payments
- Interest adjustment for payments contributed quarterly over fiscal year.

The pension appropriation is shown in Table VII.

**Table VII**

	<u>July 1, 2013</u>	<u>July 1, 2014</u>
Normal cost	\$3,784,881	\$3,008,708
Amortization payment of the unfunded liability	<u>8,860,717</u>	<u>9,832,196</u>
Total cost	\$12,645,598	\$12,840,904
% of Pay	64.7%	66.0%
Fiscal 2015 appropriation	\$12,996,379	\$12,996,379
Fiscal 2016 appropriation	\$13,636,326	\$13,630,085

### **Appropriation Forecast**

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4% per year. Payments are assumed to be made quarterly.

The employer total cost is expected to increase during the next 21 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents about 67% of payroll, decreasing to 59% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 14.2%, thereafter.

H:\Pawtucket\2014 Pension\2014 Pawtucket Val v2.xlsm\Approp. Results

**"New Plan" Appropriation Forecast**

Fiscal Year	Employee Payroll	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2015	\$19,453,527	\$1,427,936	\$3,090,790	\$9,905,589	\$12,996,379	66.8	40.7
2016	\$20,231,668	\$1,507,440	\$3,191,424	\$10,438,661	\$13,630,085	67.4	42.9
2017	\$21,040,935	\$1,591,019	\$3,295,164	\$10,772,698	\$14,067,862	66.9	45.2
2018	\$21,882,572	\$1,678,873	\$3,402,097	\$11,117,425	\$14,519,522	66.4	47.5
2019	\$22,757,875	\$1,771,210	\$3,512,312	\$11,473,182	\$14,985,494	65.8	49.9
2020	\$23,668,190	\$1,868,247	\$3,625,901	\$11,840,324	\$15,466,225	65.3	52.3
2021	\$24,614,918	\$1,970,214	\$3,742,958	\$12,219,215	\$15,962,173	64.8	54.8
2022	\$25,599,514	\$2,077,348	\$3,863,577	\$12,610,230	\$16,473,807	64.4	57.3
2023	\$26,623,495	\$2,189,901	\$3,987,858	\$13,013,757	\$17,001,615	63.9	59.9
2024	\$27,688,435	\$2,308,135	\$4,115,899	\$13,430,197	\$17,546,096	63.4	62.6
2025	\$28,795,972	\$2,432,323	\$4,247,803	\$13,859,963	\$18,107,766	62.9	65.3
2026	\$29,947,811	\$2,562,753	\$4,383,673	\$14,303,482	\$18,687,155	62.4	68.1
2027	\$31,145,723	\$2,699,726	\$4,523,617	\$14,761,194	\$19,284,811	61.9	70.9
2028	\$32,391,552	\$2,843,557	\$4,667,742	\$15,233,552	\$19,901,294	61.4	73.9
2029	\$33,687,215	\$2,994,574	\$4,816,160	\$15,721,025	\$20,537,185	61.0	76.9
2030	\$35,034,703	\$3,153,123	\$4,968,983	\$16,224,098	\$21,193,081	60.5	79.9
2031	\$36,436,091	\$3,279,248	\$5,167,742	\$16,743,269	\$21,911,011	60.1	83.1
2032	\$37,893,535	\$3,410,418	\$5,374,452	\$17,279,054	\$22,653,506	59.8	86.3
2033	\$39,409,276	\$3,546,835	\$5,589,430	\$17,831,984	\$23,421,414	59.4	89.6
2034	\$40,985,647	\$3,688,708	\$5,813,007	\$18,402,607	\$24,215,614	59.1	93.0
2035	\$42,625,073	\$3,836,257	\$6,045,527	\$18,991,491	\$25,037,018	58.7	96.5
2036	\$44,330,076	\$3,989,707	\$6,287,349	\$0	\$6,287,349	14.2	100.0
2037	\$46,103,279	\$4,149,295	\$6,538,843	\$0	\$6,538,843	14.2	100.0
2038	\$47,947,410	\$4,315,267	\$6,800,396	\$0	\$6,800,396	14.2	100.0
2039	\$49,865,307	\$4,487,878	\$7,072,412	\$0	\$7,072,412	14.2	100.0
2040	\$51,859,919	\$4,667,393	\$7,355,309	\$0	\$7,355,309	14.2	100.0
2041	\$53,934,316	\$4,854,088	\$7,649,521	\$0	\$7,649,521	14.2	100.0
2042	\$56,091,688	\$5,048,252	\$7,955,502	\$0	\$7,955,502	14.2	100.0
2043	\$58,335,356	\$5,250,182	\$8,273,722	\$0	\$8,273,722	14.2	100.0
2044	\$60,668,770	\$5,460,189	\$8,604,671	\$0	\$8,604,671	14.2	100.0
2045	\$63,095,521	\$5,678,597	\$8,948,858	\$0	\$8,948,858	14.2	100.0
2046	\$65,619,342	\$5,905,741	\$9,306,812	\$0	\$9,306,812	14.2	100.0

\*\* Beginning of Fiscal Year

**GASB Statements No. 25 and No. 27**

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations.

Some of the required disclosure information for the "New Plan" is shown in Table VIII.

**Table VIII**

	<u>July 1, 2013</u>	<u>July 1, 2014</u>
(1) Actuarial Accrued Liability	\$243,784,564	\$238,725,116
(2) Actuarial Value of Assets	<u>82,981,582</u>	<u>97,220,726</u>
(3) Unfunded Actuarial Accrued Liability	160,802,982	141,504,390
(4) Funded Ratio (2)/(1)	34.0%	40.7%
(5) Covered Payroll	\$18,519,001	\$19,453,527
(6) UAAL as a percentage of payroll: (3)/(5)	868.3%	727.4%
(7) Annual Required Contribution (ARC)	12,386,341	\$12,996,379

**GASB 25 & 27  
"NEW PLAN"**

**NET PENSION OBLIGATION**

Fiscal Year	Annual Required Contribution ARC	Interest on NPO	Adjustment to NPO	Net Pension Expense	Actual Contribution	NPO
2011	10,531,718	6,081,327	4,163,310	12,449,735	9,561,000	80,111,931
2012	10,952,987	6,308,815	4,319,049	12,942,753	10,154,000	82,900,684
2013	11,391,106	6,528,429	4,469,398	13,450,136	11,391,106	84,959,714
2014	12,386,341	6,690,578	4,580,406	14,496,512	12,386,341	87,069,886
2015	12,996,379	6,856,753	4,667,511	15,185,622	12,996,379	89,259,129

**SCHEDULE OF FUNDING PROGRESS**

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	UAAL as a percent of Covered Payroll
	(a)	(b)	(b-a)	(a/b)	(c)	(b-a)/c
07/01/14	\$97,220,726	\$238,725,116	\$141,504,390	40.7%	\$19,453,527	727.4%
07/01/13	82,981,582	243,784,564	160,802,982	34.0%	19,551,974	822.4%
07/01/11	73,439,515	218,309,558	144,870,043	33.6%	18,519,001	782.3%
07/01/10	60,989,068	201,065,830	140,076,762	30.3%	18,858,528	742.8%
07/01/09	54,729,846	185,122,805	130,392,959	29.6%	17,731,200	735.4%
07/01/08	68,844,727	177,376,163	108,531,436	38.8%	17,461,156	621.6%
07/01/07	70,420,028	164,198,973	93,778,945	42.9%	18,107,293	517.9%
07/01/06	64,012,986	157,865,288	93,852,302	40.5%	17,886,331	524.7%
07/01/05	62,097,916	146,146,982	84,049,066	42.5%	16,897,240	497.4%
07/01/04	58,982,109	135,682,751	76,700,642	43.5%	15,386,235	498.5%

**GASB 25 & 27  
"OLD PLAN"**

**NET PENSION OBLIGATION**

Fiscal Year	Annual Required Contribution ARC	Interest on NPO	Adjustment to NPO	Net Pension Expense	Actual Contribution	NPO
2011	706,564	65,785	159,766	612,583	608,519	839,431
2012	654,915	66,105	177,536	543,484	561,459	821,456
2013	654,915	64,690	157,105	562,500	523,948	860,008
2014	543,355	67,726	164,478	446,603	525,341	781,269
2015	522,872	58,595	147,504	433,963	479,266 *	735,966

\* Estimate

**SCHEDULE OF FUNDING PROGRESS**

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
07/01/14	\$0	\$2,769,443	\$2,769,443	0.0%	\$0	N/A
07/01/13	0	2,841,043	2,841,043	0.0%	0	N/A
07/01/11	0	3,424,357	3,424,357	0.0%	0	N/A



**EXHIBITS**

Age/Service Distribution with Average Salary as of July 1, 2014

Attained Age	Service									Total
	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
< 20	1 49,280	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	1 49,280
20-24	14 50,274	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	14 50,274
25-29	20 57,386	10 64,215	0 0	0 0	0 0	0 0	0 0	0 0	0 0	30 59,662
30-34	16 54,160	31 64,960	4 66,343	0 0	0 0	0 0	0 0	0 0	0 0	51 61,680
35-39	7 57,440	13 65,903	11 66,586	0 0	0 0	0 0	0 0	0 0	0 0	31 64,234
40-44	3 50,865	12 64,104	23 66,971	19 73,506	5 71,369	0 0	0 0	0 0	0 0	62 67,994
45-49	2 60,139	5 65,373	5 65,027	10 74,085	10 75,023	4 79,082	0 0	0 0	0 0	36 71,658
50-54	0 0	2 64,900	4 68,851	6 71,752	6 73,715	12 75,052	5 81,220	0 0	0 0	35 73,850
55-59	0 0	0 0	0 0	0 0	2 66,779	8 78,328	5 70,129	0 0	0 0	15 74,055
60-64	0 0	0 0	0 0	1 64,563	1 65,152	3 71,202	3 72,801	1 72,727	1 91,180	10 72,563
65-69	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
70+	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Total Employees	63	73	47	36	24	27	13	1	1	285
Average Salary	54,640	64,912	66,781	73,126	72,837	76,192	75,011	72,727	91,180	66,303

## Retiree Distribution as of July 1, 2014

Attained Age	Number of Retirees			Total Monthly Payments		
	Female	Male	Total	Female	Male	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	1	1	0	4,040	4,040
35-39	1	0	1	1,725	0	1,725
40-44	0	4	4	0	11,863	11,863
45-49	5	20	25	4,993	73,126	78,119
50-54	3	29	32	6,101	106,821	112,922
55-59	4	39	43	7,843	143,915	151,758
60-64	15	44	59	24,914	138,576	163,490
65-69	8	53	61	10,206	167,965	178,171
70-74	12	38	50	17,241	109,386	126,627
75-79	14	27	41	14,034	61,713	75,747
80-84	7	18	25	6,289	36,501	42,790
85-89	13	12	25	10,836	21,786	32,622
90-94	9	4	13	5,530	7,606	13,136
95+	1	1	2	1,451	588	2,039
<b>Total</b>	<b>92</b>	<b>290</b>	<b>382</b>	<b>111,164</b>	<b>883,887</b>	<b>995,050</b>
<b>Average (Age/Payment)</b>	<b>72.58</b>	<b>65.82</b>	<b>67.46</b>	<b>1,208</b>	<b>3,048</b>	<b>2,605</b>
<b>Frequency Percent</b>	<b>24.1</b>	<b>75.9</b>	<b>100</b>	<b>11.2</b>	<b>88.8</b>	<b>100</b>

## Disabled Retiree Distribution as of July 1, 2014

Attained Age	Number of Retirees			Total Monthly Payments		
	Female	Male	Total	Female	Male	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	1	1	0	3,974	3,974
35-39	0	1	1	0	4,303	4,303
40-44	0	3	3	0	9,913	9,913
45-49	0	8	8	0	26,514	26,514
50-54	1	6	7	3,013	18,394	21,407
55-59	0	7	7	0	23,303	23,303
60-64	0	9	9	0	28,140	28,140
65-69	0	2	2	0	6,403	6,403
70-74	0	1	1	0	4,209	4,209
75-79	0	0	0	0	0	0
80-84	0	0	0	0	0	0
85-89	0	0	0	0	0	0
90-94	0	0	0	0	0	0
95-99	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>38</b>	<b>39</b>	<b>3,013</b>	<b>125,152</b>	<b>128,165</b>
<b>Average (Age/Payment)</b>	<b>50.26</b>	<b>54.29</b>	<b>54.19</b>	<b>3,013</b>	<b>3,293</b>	<b>3,286</b>
<b>Frequency Percent</b>	<b>2.6</b>	<b>97.4</b>	<b>100</b>	<b>2.4</b>	<b>97.6</b>	<b>100</b>

**EXHIBIT 4 - "NEW PLAN" CASHFLOW FORECAST**

The following is a 30 year forecast of benefit payments, Contribution Income and Investment Returns.

Fiscal Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns 7.5%	Net change in plan assets
2015	\$13,370,058	\$1,427,936	\$12,996,379	\$8,157,867	\$9,212,124
2016	13,769,644	1,507,440	13,630,085	8,662,635	10,030,516
2017	14,158,273	1,591,019	14,067,862	9,439,012	10,939,621
2018	14,843,169	1,678,873	14,519,522	10,284,441	11,639,667
2019	15,542,150	1,771,210	14,985,494	11,183,274	12,397,828
2020	16,134,336	1,868,247	15,466,225	12,139,903	13,340,040
2021	16,762,557	1,970,214	15,962,173	13,168,166	14,337,995
2022	17,375,363	2,077,348	16,473,807	14,272,281	15,448,072
2023	18,038,387	2,189,901	17,001,615	15,460,690	16,613,819
2024	18,659,397	2,308,135	17,546,096	16,737,611	17,932,446
2025	19,333,494	2,432,323	18,107,766	18,114,548	19,321,143
2026	19,985,776	2,562,753	18,687,155	19,596,798	20,860,930
2027	20,785,207	2,699,726	19,284,811	21,195,735	22,395,064
2028	21,616,616	2,843,557	19,901,294	22,910,980	24,039,215
2029	22,481,280	2,994,574	20,537,185	24,750,829	25,801,308
2030	23,380,532	3,153,123	21,193,081	26,724,177	27,689,850
2031	24,315,753	3,279,248	21,911,011	28,839,458	29,713,965
2032	25,288,383	3,410,418	22,653,506	31,107,902	31,883,443
2033	26,299,918	3,546,835	23,421,414	33,540,461	34,208,791
2034	27,351,915	3,688,708	24,215,614	36,148,874	36,701,281
2035	28,445,992	3,836,257	25,037,018	38,945,728	39,373,011
2036	29,583,831	3,989,707	6,287,349	41,063,612	21,756,837
2037	30,767,185	4,149,295	6,538,843	42,714,617	22,635,570
2038	31,997,872	4,315,267	6,800,396	44,432,297	23,550,088
2039	33,277,787	4,487,878	7,072,412	46,219,365	24,501,868
2040	34,608,898	4,667,393	7,355,309	48,078,649	25,492,453
2041	35,993,254	4,854,088	7,649,521	50,013,094	26,523,449
2042	37,432,984	5,048,252	7,955,502	52,025,763	27,596,533
2043	38,930,304	5,250,182	8,273,722	54,119,850	28,713,450
2044	40,092,469	5,460,189	8,604,671	56,298,680	30,271,071

## **EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:**

This summary is prepared in accordance with Collective Bargaining Agreements as of July 1, 2014, and does not take into account any subsequent changes.

### **1. Administration**

The City of Pawtucket administers the plan.

### **2. Participation**

Participation is mandatory for employees of the City of Pawtucket who are covered under a collective bargaining agreement between the City of Pawtucket and the Pawtucket Fire Fighters Independent Union and the City of Pawtucket and the Pawtucket Lodge No. 4, Fraternal Order of Police.

### **3. Salary**

Salary is defined as gross regular compensation, including longevity.

### **4. Member Contributions**

Member contributions are 7.5% of Salary. Employees hired after May 1, 2013 contribute 9%. Firefighters contribute 8%, increasing to 8.5% effective July 1, 2015, and 9% commencing July 1, 2016.

### **5. Creditable Service**

In general, creditable service is awarded during the period in which a member contributes to the pension plan.

### **6. Service Retirement**

#### **a. Eligibility:**

Completion of 20 years of service

#### **b. Benefit Amount:**

Police: 50% of final average compensation plus an additional 3% of final average compensation for each year of service over 20 years, not to exceed 3 1/3 years. Final average compensation is defined as the highest year's salary rate.

Fire: 50% of final average compensation plus an additional 2% of final average compensation for each year of service over 20 years, not to exceed 10 years. Final average compensation is defined as the highest 3 year average salary rate.

## **7. Accidental Disability**

### a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

### b. Benefit Amount:

The accidental disability amount is 66 2/3% of compensation at date of disability plus an additional 10% of compensation for each dependent child (until the child attains age 21), not to exceed 80% of compensation, payable to normal retirement date. If the date of disability is after 20 years of service, the disability benefit is payable until the member would have completed 25 years of employment. A normal retirement benefit is payable after the disability benefit is no longer payable.

## **8. Termination Vested**

### a. Eligibility:

Ten years of service for firefighters

### b. Benefit Amount:

Annual annuity payable at what would have been the 20<sup>th</sup> anniversary of employment.

**9. Termination Non-Vested**

c. Eligibility:

None

d. Benefit Amount:

Refund of employee contributions, plus interest (noncompounded).

**10. Survivor Benefits**

a. Eligibility:

None

b. Benefit Amount:

50% of compensation at date of death plus an additional 10% of compensation for each dependent child (until the child attains age 21), not to exceed 70% of compensation, payable for the lifetime of the surviving spouse or until the spouse remarries

**12. Cost-of-Living Increases**

**Fire**

<u>Effective Date</u>	<u>Increase</u>	<u>Compounded</u>
April 1, 1984	3.00%	Every 3 Years
July 1, 1986	1.50%	Annually
July 1, 1994	1.75%	Annually
July 1, 1995	2.00%	Annually
July 1, 1999	3.00%	Annually
July 1, 2004	3.00%	Annually

**Police**

<u>Effective Date</u>	<u>Increase</u>	<u>Compounded</u>
July 1, 1988	1.00%	Annually
July 1, 1989	1.50%	Annually
July 1, 1994	1.75%	Annually



July 1, 1996	2.00%	Annually
July 1, 1998	3.00%	Annually
July 1, 2004	3.00%	Annually

The cost-of-living adjustment is made on the service retirement benefit and the continuation of the service retirement benefit during the 10-year certain period. It is not applicable to a disability benefit or to a survivor benefit except as noted above.

Under the new plan provisions for active Firefighters the COLA begin at the earlier of age 55 and 10 years following retirement. For the period FYE14 through FYE16, no COLAs will be made to the benefits for current retirees.

### **13. Postretirement Death Benefits**

Benefit payable for the remainder of the 10-year certain period. Then a benefit of 67½% of the participant's pension benefit is payable to the surviving spouse. In addition, a \$15,000 (previously \$10,000) funeral allowance is payable for Firefighters who die in the line of duty.

**EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:**

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

**1. Member Data**

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

**2. Valuation Date**

July 1, 2014.

**3. Actuarial Cost Method**

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

**4. Rate of Investment Return**

It is assumed that the assets of the fund will accumulate at a compound annual rate of 7.5% per annum, net of investment expenses.

**5. Salary Scale**

It is assumed that salaries including longevity will increase according to the following rates:

<u>Years of Service</u>	<u>Salary Increase</u>
0-1	8.50%
2-4	3.25%
5	11.00%
6-9	3.50%
10	4.25%
11-14	3.75%
15	4.50%
16-19	3.75%
20	4.75%
21-24	3.25%
25+	2.00%

**6. Cost-of-Living Increases**

Cost-of-living increases have been assumed to be 3.0% per year.

**7. Value of Investments**

Assets held by the fund are valued at market value. The actuarial value of assets is equal to the market value.

**8. Annual Rate of Withdrawal Prior to Retirement**

None for Police. According to the following table for Firefighters.

<u>Service</u>	<u>Rate</u>
0	.1000
1	.0528
2	.0481
3	.0436
4	.0394
5	.0354
6	.0316
7	.0281
8	.0249
9	.0219
10	.0191
11	.0166
12	.0143
13	.0123
14	.0105
15	.0090
16	.0077
17	.0067
18	.0059
19+	.0000

**9. Annual Rate of Mortality**

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 combined mortality table adjusted to Blue Collar (male tables) with 1 year setback. Disabled mortality is assumed to follow The RP-2000 combined mortality table adjusted to blue Collar (male tables) set forward 1 year for males and 2 years for females.

**10. Service Retirement**

Based on an analysis of experience, the assumed annual retirement rates are illustrated as follows for Police:

<u>Service</u>	<u>Rate</u>	<u>Service</u>	<u>Rate</u>
20	0.20	30	0.25
21	0.07	31	0.20
22	0.08	32	0.20
23	0.20	33	0.35
24	0.10	34	0.35
25	0.10	35	0.50
26	0.10	36	0.50
27	0.10	37	0.50
28	0.10	38	0.50
29	0.10	39+	1.00

Based on an analysis of experience and anticipated changes in behavior, the assumed annual retirement rates are illustrated as follows for Firefighters:

<u>Service</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	< 55	0.075	>=55	0.15
21	<55	0.035	>=55	0.07
22	<55	0.040	>=55	0.08
23	<55	0.050	>=55	0.10
24	<55	0.050	>=55	0.10
25	<55	0.050	>=55	0.10
26	<55	0.050	>=55	0.10
27	<55	0.050	>=55	0.10
28	<55	0.050	>=55	0.10
29	<55	0.050	>=55	0.10
30	< 55	0.125	>=55	0.25
31	< 55	0.100	>=55	0.20
32	< 55	0.100	>=55	0.20
33	< 55	0.175	>=55	0.35
34	< 55	0.175	>=55	0.35
35	< 55	0.250	>=55	0.50
36	< 55	0.250	>=55	0.50
37	< 55	0.250	>=55	0.50
38	< 55	0.250	>=55	0.50
39+	< 55	0.250	>=55	0.50

At 65 the rate is 100%, regardless of the number of years of service.

**11. Annual Rate of Disability Prior to Retirement**

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following rates at the following ages:

<b>Attained</b>	
<b><u>Age</u></b>	<b><u>Rate</u></b>
25	.0040
30	.0040
35	.0040
40	.0040
45	.0100
50	.0125
55	.0120
60	.0085

**12. Family Composition**

It is assumed that 90% of male members and 75% of female members will be survived by a spouse and that females (males) are three years younger (older) than members.

**13. Administrative Expenses**

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2014 is \$45,000 and is anticipated to increase at 4% per year.

## **EXHIBIT 7 – GLOSSARY OF TERMS:**

This glossary summarizes the technical terms contained in this report.

### **1. Actuarial Accrued Liability**

That portion of the Actuarial Present Value of projected plan benefits that is not provided for by future employer Normal Costs or employee contributions.

### **2. Actuarial Assumptions**

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

### **3. Actuarial Cost Method**

A procedure for allocating the Actuarial Present Value of projected pension plan benefits between Normal Cost and Actuarial Accrued Liability.

### **4. Actuarial Present Value**

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

### **5. Forecast**

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

**6. Normal Cost**

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

**7. Unfunded Actuarial Accrued Liability**

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

**8. Actuarial Valuation Method**

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

**9. Vested Liability**

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

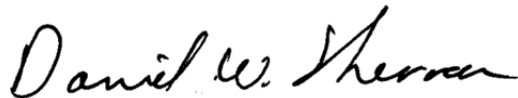


## **CERTIFICATION:**

This report fairly represents the actuarial position of the City of Pawtucket Police and Firefighters Pension Plan contributing as of July 1, 2014, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

The report was prepared under the supervision of Daniel Sherman, an Associate of the Society of Actuaries and a Member of the American Academy of Actuaries, who takes responsibility for the overall appropriateness of the analysis, assumptions and results. Daniel Sherman is deemed to meet the General Qualification Standard and the basic education and experience requirement in the pension area. Based on over thirty years of performing valuations of similar complexity, Mr. Sherman is qualified by experience.. Daniel Sherman has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sherman Actuarial Services, LLC



---

Daniel W. Sherman, ASA, MAAA  
Enrolled Actuary No. 11-4086

November, 2014

**“OLD PLAN”**

	July 1, 2014	July 1, 2013
Pensioners:		
Number	13	16
Average Age	89.15	88.32
Average Monthly benefit	\$1,612	\$1,715
Beneficiaries:		
Number	26	25
Average Age	85.47	85.62
Average Monthly benefit	\$777	\$637
Actuarial Accrued Liability	\$2,769,443	\$2,841,043