

Town of Johnston, Rhode Island Police Pension System

Actuarial Valuation and Review as of
June 30, 2016





116 Huntington Ave., 8th Floor Boston, MA 02116
T 617.424.7300 www.segalco.com

November 9, 2016

*Joseph Chiodo CPA, MBA
Finance Director
Town of Johnston, Rhode Island Police Pension System
1385 Hartford Avenue
Johnston, Rhode Island 02919*

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of June 30, 2016. It summarizes the actuarial data used in the valuation, establishes the funding requirements for the fiscal year ending June 30, 2018 and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Pension System. The census information and financial information on which our calculations were based was prepared by the Town of Johnston and the financial information was obtained from the Town of Johnston trial balance and journal entries for the fiscal year ended June 30, 2016. That assistance is gratefully acknowledged.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and changes in plan provisions or applicable law.

The actuarial calculations were directed under our supervision. We are members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of our knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, in our opinion, the assumptions recommended by Segal in our experience study for the period July 1, 2011 to June 30, 2014, dated April 1, 2015, as approved by the Town are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

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

By: *William J. Connolly / RJC*
William J. Connolly, FCA, MAAA, EA
Consulting Actuary

Jeanette R. Cooper
Jeanette R. Cooper, FSA, FCA, MAAA, EA
Vice President and Actuary

SECTION 1	SECTION 2	SECTION 3	SECTION 4
<p>VALUATION SUMMARY</p> <p>Purposei</p> <p>Significant Issues in Valuation Yeari</p> <p>Summary of Key Valuation Results iii</p> <p>Important Information About Actuarial Valuationsiv</p>	<p>VALUATION RESULTS</p> <p>A. Participant Data..... 1</p> <p>B. Financial Information...4</p> <p>C. Actuarial Experience....7</p> <p>D. Recommended Contribution 12</p>	<p>SUPPLEMENTAL INFORMATION</p> <p>EXHIBIT A Table of Plan Coverage 14</p> <p>EXHIBIT B Participants in Active Service as of June 30, 2016 15</p> <p>EXHIBIT C Reconciliation of Participant Data..... 16</p> <p>EXHIBIT D Summary Statement of Income and Expenses on an Actuarial and Market Value Basis..... 17</p> <p>EXHIBIT E Development of the Fund Through June 30, 2016 18</p> <p>EXHIBIT F Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2016 19</p> <p>EXHIBIT G Definitions of Pension Terms 20</p>	<p>REPORTING INFORMATION</p> <p>EXHIBIT I Summary of Actuarial Valuation Results 22</p> <p>EXHIBIT II History of Employer Contributions 24</p> <p>EXHIBIT III Schedule of Funding Progress 25</p> <p>EXHIBIT IV Funded Ratio..... 26</p> <p>EXHIBIT V Actuarial Assumptions and Actuarial Cost Method..... 27</p> <p>EXHIBIT VI Summary of Plan Provisions 30</p>

SECTION 1: Valuation Summary for the Town of Johnston, Rhode Island Police Pension System

Purpose

This report has been prepared by Segal Consulting to present a valuation of the Town of Johnston, Rhode Island Police Pension System as of June 30, 2016. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Town;
- The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of June 30, 2016, provided by the Town;
- The assets of the Plan as of June 30, 2016, provided by the Town;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

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

1. As developed in this June 30, 2016 actuarial valuation, the actuarially determined employer contribution (ADEC) for the fiscal year ending June 30, 2018 is \$8,509,584.
2. The market value of assets earned a 0.13% rate of return for the plan year ending June 30, 2016. The actuarial value of assets is set equal to market value. This return was less than the 7.50% investment return assumption, causing an investment loss of \$1,172,309.
3. The ADEC increased from \$8,073,936 in last year's valuation to \$8,509,584 this year. The unfunded actuarial liability increased from \$64,807,198 to \$67,689,574. The contribution increased primarily because the actual contributions paid were less than the recommended amount.
4. The System was closed to new entrants effective July 1, 2010. However, the active population has remained level over the last two years at 55 actives.
5. The System's funded percentage has declined from 20.16% to 18.61%. In an effort to improve the funded percentage, the Town has evaluated the impact of contribution increases and benefit cutbacks under a possible funding improvement plan. However, these proposals have not yet been implemented.

SECTION 1: Valuation Summary for the Town of Johnston, Rhode Island Police Pension System

6. Plan assets are currently equivalent to less than three years of projected benefit payments. The imbalance between the benefit levels in the System and the resources available to pay for them must be addressed. We are available to prepare solvency projections upon request.
7. Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68 are effective for fiscal years beginning after June 15, 2013 and June 15, 2014, respectively. GASB 67 and 68 information is not included in this report. GASB 67 disclosure information as of June 30, 2016 and GASB 68 information for the fiscal year ending June 30, 2016 will be provided in a separate letter.

SECTION 1: Valuation Summary for the Town of Johnston, Rhode Island Police Pension System

Summary of Key Valuation Results

	2016	2015
Contributions for following fiscal year beginning July 1:		
Recommended contribution	\$8,509,584	\$8,073,936
Funding elements for plan year beginning July 1:		
Normal cost, including administrative expenses	\$1,857,592	\$1,853,935
Market value of assets	15,482,127	16,364,051
Actuarial value of assets	15,482,127	16,364,051
Actuarial accrued liability	83,171,701	81,171,249
Unfunded actuarial accrued liability	67,689,574	64,807,198
Funded ratio	18.61%	20.16%
Demographic data as of June 30:		
Number of retired participants and beneficiaries	97	98
Number of active participants	55	55
Total payroll	\$5,054,901	\$5,049,628
Average payroll	91,907	91,811

SECTION 1: Valuation Summary for the Town of Johnston, Rhode Island Police Pension System

Important Information About Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal Consulting (“Segal”) relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the Town. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** The valuation is based on the market value of assets as of the valuation date, as provided by the Town.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan’s assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

SECTION 1: Valuation Summary for the Town of Johnston, Rhode Island Police Pension System

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the Town. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If the Town is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The Town should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the System, it is not a fiduciary in its capacity as actuaries and consultants with respect to the System.

SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

A. PARTICIPANT DATA

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

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

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

CHART 1
Participant Population: 2003 – 2016

Year Ended June 30	Active Participants	Vested Terminated Participants*	Retired Participants and Beneficiaries**	Ratio of Non-Actives to Actives
2003	72	1	54	0.76
2005	76	1	65	0.87
2007	74	--	68	0.92
2009	73	--	80	1.10
2011	70	--	92	1.31
2012	68	--	92	1.35
2013	60	--	96	1.60
2014	55	--	99	1.80
2015	55	--	98	1.78
2016	55	--	97	1.76

*Excludes terminated participants due a refund of employee contributions

** Includes disabled retirees

SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

Active Participants

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 55 active participants with an average age of 42.3, average years of service of 13.1 years and average payroll of \$91,907. The 55 active participants in the prior valuation had an average age of 41.3, average service of 12.1 years and average payroll of \$91,811.

The Plan has been closed to new hires since July 1, 2010.

Inactive Participants

In this year's valuation, there were no participants with a vested right to a deferred or immediate vested benefit.

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

CHART 2
Distribution of Active Participants by Age as of June 30, 2016

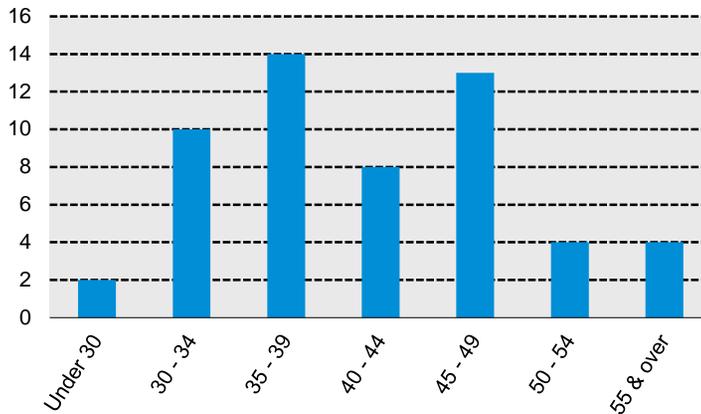
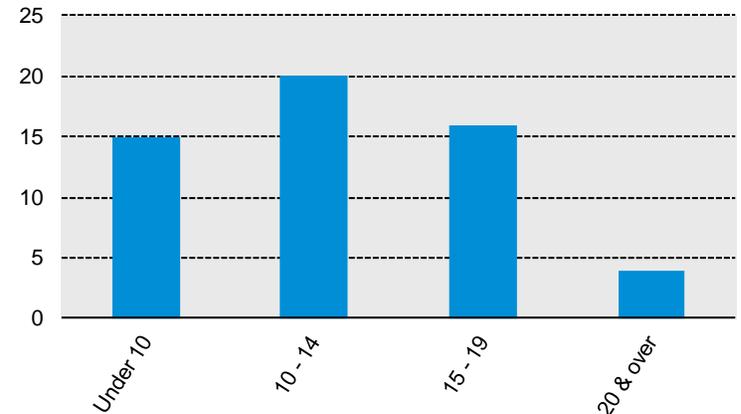


CHART 3
Distribution of Active Participants by Years of Service as of June 30, 2016



SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

Retired Participants and Beneficiaries

As of June 30, 2016, 82 retired participants (including seven QDROs) and 15 beneficiaries were receiving total monthly benefits of \$332,013. For comparison, in the previous valuation, there were 83 retired participants (including seven QDROs) and 15 beneficiaries receiving monthly benefits of \$328,100.

These graphs show a distribution of the current retired participants (including QDROs) based on their monthly amount and age, by type of pension.

- QDRO
- Disability
- Regular

CHART 4

Distribution of Retired Participants by Type and by Monthly Amount as of June 30, 2016

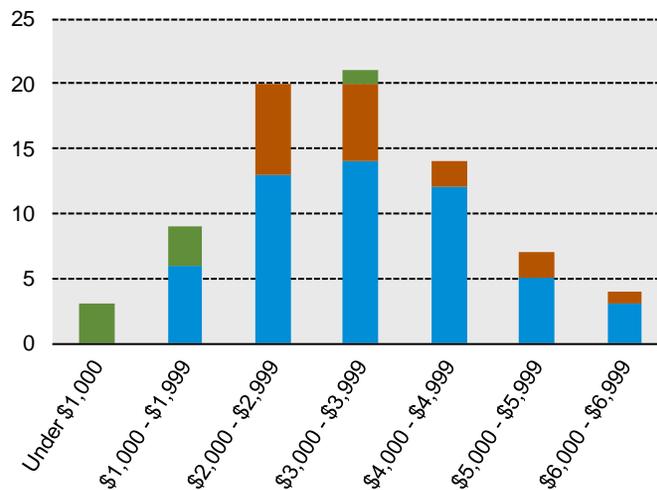
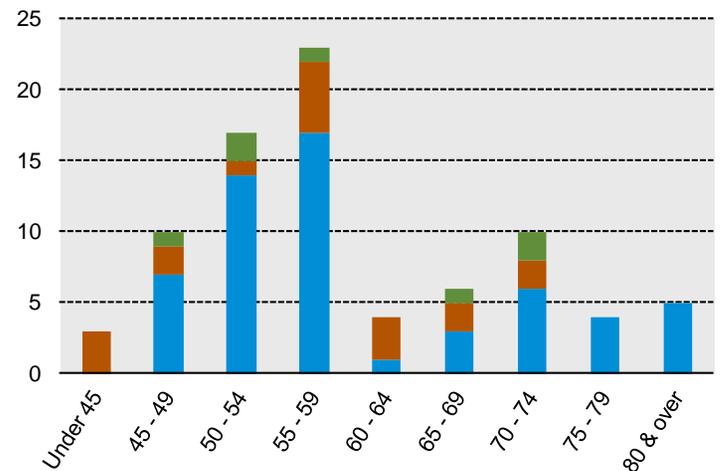


CHART 5

Distribution of Retired Participants by Type and by Age as of June 30, 2016



SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

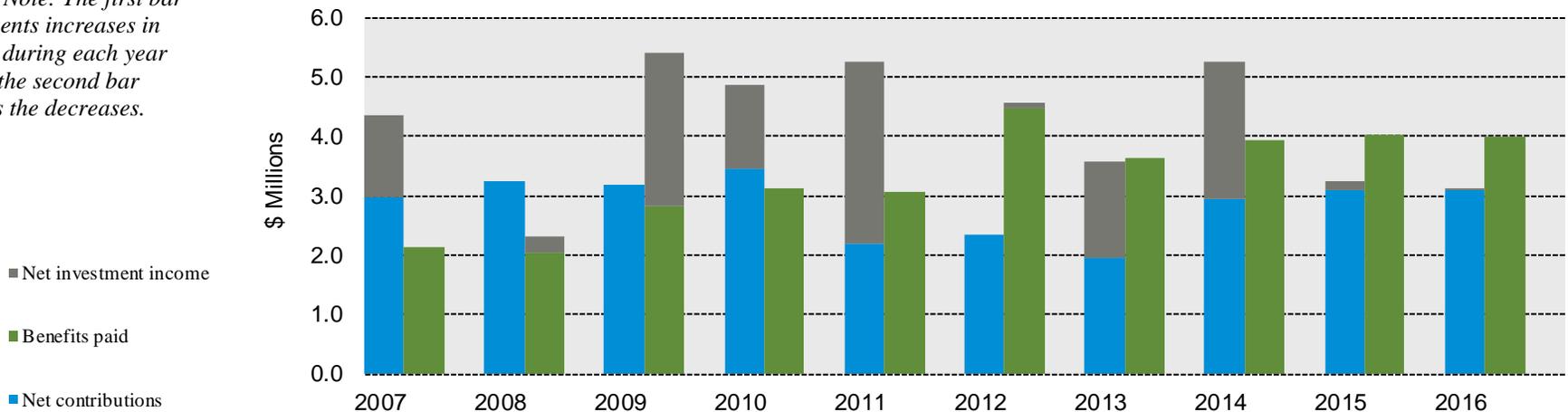
B. FINANCIAL INFORMATION

Retirement plan funding anticipates that, over the long term, both contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D and E.

The chart depicts the components of changes in the actuarial value of assets over the last ten years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6
Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended June 30, 2007 – 2016



SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

It is desirable to have level and predictable plan costs from one year to the next. However, the Town has approved an asset valuation method that uses market value. Under this valuation method, the full value of market fluctuation is recognized in a single year and, as a result, the asset value and the plan costs are relatively volatile.

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

CHART 7

Determination of Actuarial Value of Assets for Year Ended June 30, 2016

1. Actuarial value of assets at beginning of year (equal to market value)	\$16,364,051
2. Employer contributions	2,783,429
3. Employee contributions	394,051
4. Net investment income	21,130
5. Benefit payments	-4,002,706
6. Administrative expenses	<u>-77,828</u>
7. Actuarial value of assets at end of year (equal to market value)	<u>\$15,482,127</u>

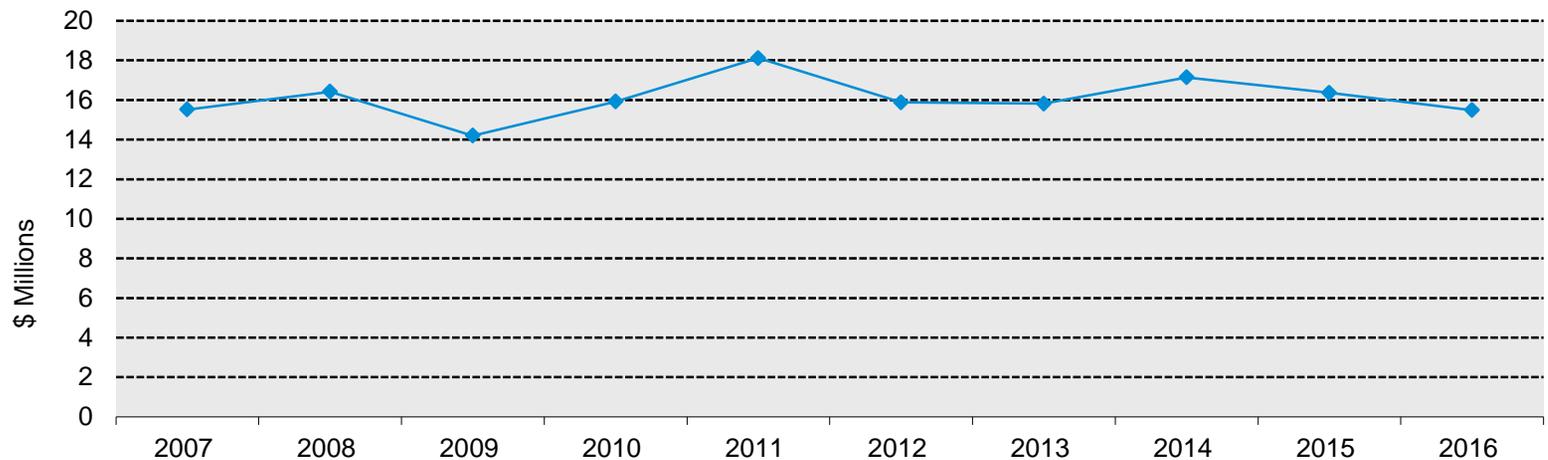
SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

The actuarial value (equal to the market value of assets) is a representation of the Police Pension System's financial status. The actuarial asset value is significant because the Police Pension System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows how the actuarial value of assets (equal to the market value of assets) has changed over the past ten years.

CHART 8

Actuarial Value of Assets (equal to Market Value of Assets) as of June 30, 2007 – 2016



SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If the expected contribution is paid, there are no changes in plan provisions, methods, or assumptions, and if overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

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

The total gain is \$674,508, including \$1,172,309 from investment losses and \$1,846,817 in gains from all other sources. The net experience variation from individual sources other than investments was 2.2% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

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

CHART 9 Actuarial Experience for Year Ended June 30, 2016

1. Net gain/(loss) from investments*	-\$1,172,309
2. Net gain/(loss) from administrative expenses	5,610
3. Net gain/(loss) from other experience**	<u>1,841,207</u>
4. Net experience gain/(loss): (1) + (2) + (3)	\$674,508

* Details in Chart 10

** Details in Chart 13

SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Town of Johnston’s investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.50%. The actual rate of return on an actuarial basis for the 2016 plan year was 0.13%.

Since the actual return for the year was less than the assumed return, the Police Pension System experienced an actuarial loss during the year ended June 30, 2016 with regard to its investments.

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

CHART 10
Actuarial Value Investment Experience for Year Ended June 30, 2016

1. Actual return	\$21,130
2. Average value of assets	15,912,524
3. Actual rate of return: (1) ÷ (2)	0.13%
4. Assumed rate of return	7.50%
5. Expected return: (2) x (4)	\$1,193,439
6. Actuarial gain/(loss): (1) – (5)	<u>-\$1,172,309</u>

SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

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

CHART 11

Investment Return – Actuarial Value of Assets (equal to Market Value of Assets): 2007 - 2016

Year Ended June 30	Actuarial Value Investment Return	
	Amount	Percent
2007	\$1,372,785	10.01%
2008	-288,579	-1.79
2009	-2,561,193	-15.44
2010	1,407,076	9.80
2011	3,048,523	19.68
2012	-93,521	-0.55
2013	1,611,219	10.71
2014	2,301,494	15.01
2015	141,369	0.85
2016	<u>21,130</u>	0.13
Total	\$6,960,303	
	Three-year average return	5.14%
	Five-year average return	4.98%
	Ten-year average return	4.45%

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

SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

The actuarial value of assets has been equal to market value for the last ten years. This has resulted in relatively volatile actuarial rates of return and pension plan cost.

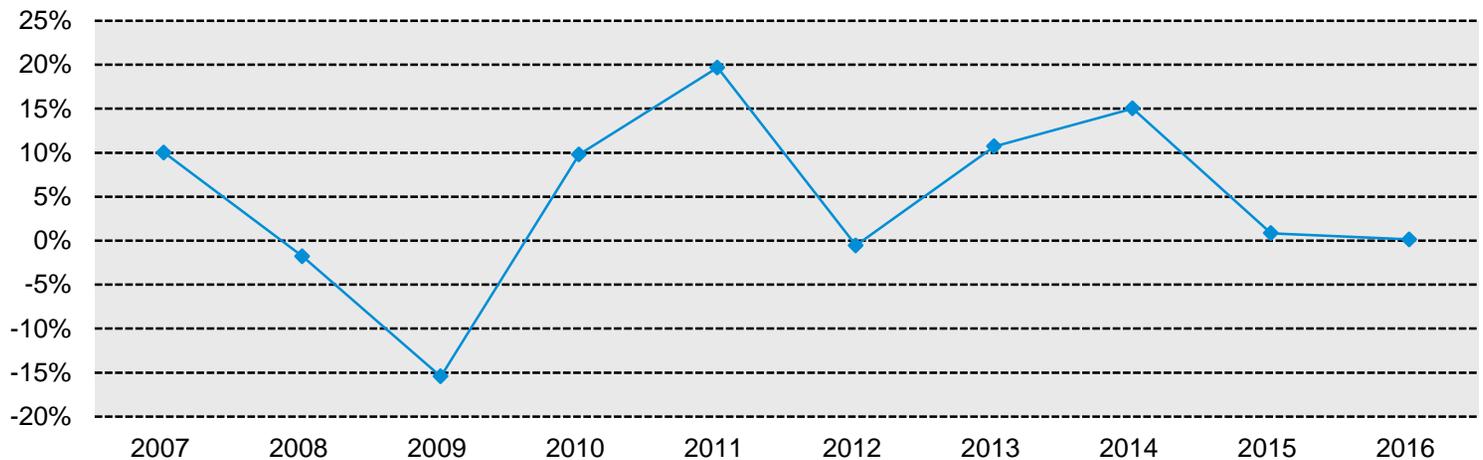
Administrative Expenses

Administrative expenses for the year ended June 30, 2016 totaled \$77,828 compared to the assumption of \$75,000, payable as of the beginning of the year. This resulted in a gain of \$5,610 for the year. Because it is expected that these expenses will remain fairly stable, we have maintained the assumption of \$75,000 for the current year.

This chart illustrates the rates of return.

CHART 12

Actuarial Rates of Return (equal to Market Value Rates of Return) for Years Ended June 30, 2007 - 2016



SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

Other Experience

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

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

The net gain from this other experience for the year ended June 30, 2016 amounted to \$1,841,207, which is 2.2% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Police Pension System for the year ended June 30, 2016 is shown in the chart below.

The chart shows elements of the experience gain/(loss) for the most recent year.

CHART 13

Experience Due to Changes in Demographics for Year Ended June 30, 2016

1. Salary increases less than expected	\$1,046,984
2. Disability retirement experience different than expected	313,384
3. Cost-of-living adjustments less than expected and other changes in benefit amounts	208,322
4. Retirement experience different than expected	57,830
5. Mortality experience	30,210
6. Miscellaneous	<u>184,477</u>
7. Total	\$1,841,207

SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability.

Prior to July 1, 2012, the recommended contribution was based on a 30-year level percent of pay amortization method with 18 years remaining as of July 1, 2011.

Effective July 1, 2012, the recommended contribution is based on a 24-year level dollar amortization of the unfunded actuarial accrued liability adopted by the Pension System's Board of Trustees. As of June 30, 2016, there are 20 years remaining on this schedule.

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

CHART 14
Recommended Contribution

	Year Beginning July 1	
	2016	2015
	Amount	Amount
1. Total normal cost	\$1,782,592	\$1,778,935
2. Administrative expenses	75,000	75,000
3. Expected employee contributions	<u>-404,392</u>	<u>-403,970</u>
4. Employer normal cost: (1) + (2) + (3)	\$1,453,200	\$1,449,965
5. Actuarial accrued liability	83,171,701	81,171,249
6. Actuarial value of assets	<u>15,482,127</u>	<u>16,364,051</u>
7. Unfunded actuarial accrued liability: (5) - (6)	\$67,689,574	\$64,807,198
8. Payment on unfunded actuarial accrued liability	6,176,576	5,789,204
9. Total recommended contribution: (4) + (8), adjusted for timing*	<u>\$8,509,584</u>	<u>\$8,073,936</u>

*Recommended contributions are assumed to be paid at the middle of the next fiscal year.

SECTION 2: Valuation Results for the Town of Johnston, Rhode Island Police Pension System

The recommended contribution for the fiscal year ending June 30, 2018 is based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Contribution

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

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

CHART 15

Reconciliation of Recommended Contribution

Recommended Mid-Year Contribution for Fiscal Year Ending June 30, 2017	\$8,073,936
Effect of contributions less than recommended contribution	500,685
Effect of gains and losses on accrued liability	-187,952
Effect of investment loss	119,307
Effect of change in net benefit normal cost	<u>3,608</u>
Total change	<u>\$435,648</u>
Recommended Mid-Year Contribution for Fiscal Year Ending June 30, 2018	\$8,509,584

SECTION 3: Supplemental Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT A

Table of Plan Coverage

Category	Year Ended June 30		Change From Prior Year
	2016	2015	
Active participants in valuation:			
Number	55	55	0.0%
Average age	42.3	41.3	N/A
Average years of service	13.1	12.1	N/A
Total payroll	\$5,054,901	\$5,049,628	0.1%
Average payroll	91,907	91,811	0.1%
Total active vested participants	40	40	0.0%
Retired participants:*			
Number in pay status	64	65	-1.5%
Average age	53.9	53.3	N/A
Average monthly benefit	\$3,660	\$3,557	2.9%
Disabled participants:			
Number in pay status	18	18	0.0%
Average age	56.3	55.3	N/A
Average monthly benefit	\$3,643	\$3,627	0.4%
Beneficiaries in pay status:			
Number in pay status	15	15	0.0%
Average age	69.7	68.6	N/A
Average monthly benefit	\$2,145	\$2,106	1.9%

* Includes alternate payees receiving benefits subject to a QDRO

SECTION 3: Supplemental Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT B

**Participants in Active Service as of June 30, 2016
By Age, Years of Service, and Average Payroll**

Age	Years of Service					
	Total	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29
Under 30	2	2	--	--	--	--
	\$95,610	\$95,610	--	--	--	--
30 - 34	10	5	5	--	--	--
	84,338	82,959	\$85,716	--	--	--
35 - 39	14	4	10	--	--	--
	87,780	86,654	88,231	--	--	--
40 - 44	8	1	2	5	--	--
	94,954	66,714	82,023	\$105,775	--	--
45 - 49	13	3	3	7	--	--
	90,344	83,311	79,860	97,852	--	--
50 - 54	4	--	--	2	1	1
	115,730	--	--	123,945	\$122,207	\$92,821
55 - 59	2	--	--	2	--	--
	86,429	--	--	86,429	--	--
60 - 64	1	--	--	--	1	--
	108,297	--	--	--	108,297	--
65 - 69	--	--	--	--	--	--
	--	--	--	--	--	--
70 & over	1	--	--	--	1	--
	113,196	--	--	--	113,196	--
Total	55	15	20	16	3	1
	\$91,907	\$84,619	\$85,726	\$102,162	\$114,567	\$92,821

SECTION 3: Supplemental Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT C

Reconciliation of Participant Data

	Active Participants	Disableds	Retired Participants	Beneficiaries	Total
Number as of June 30, 2015	55	18	65	15	153
Deceased	<u>0</u>	<u>0</u>	<u>-1</u>	<u>0</u>	<u>-1</u>
Number as of June 30, 2016	55	18	64	15	152

SECTION 3: Supplemental Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT D

Summary Statement of Income and Expenses on an Actuarial and Market Value Basis

	Year Ended June 30, 2016	Year Ended June 30, 2015
Net assets at actuarial value at the beginning of the year	\$16,364,051	\$17,142,437
Contribution income:		
Employer contributions	\$2,783,429	\$2,786,367
Employee contributions	394,051	388,335
Less administrative expenses	<u>-77,828</u>	<u>-71,000</u>
Net contribution income	3,099,652	3,103,702
Investment income	<u>21,130</u>	<u>141,369</u>
Total income available for benefits	\$3,120,782	\$3,245,071
Less benefit payments:		
Benefit payments	-\$4,002,706	-\$3,982,881
Refunds service buyback	<u>0</u>	<u>-40,576</u>
Net benefit payments	-\$4,002,706	-\$4,023,457
Change in reserve for future benefits	-\$881,924	-\$778,386
Net assets at actuarial value at the end of the year	\$15,482,127	\$16,364,051

SECTION 3: Supplemental Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT E

Development of the Fund Through June 30, 2016

Year Ended June 30	Employer Contributions¹	Employee Contributions²	Net Investment Return³	Administrative Expenses⁴	Benefit Payments⁵	Actuarial Value of Assets at End of Year
2007	\$2,703,188	\$274,782	\$1,372,785	\$0	\$2,123,069	\$15,515,997
2008	2,923,367	309,667	-288,579	0	2,040,057	16,420,395
2009	2,817,204	363,039	-2,561,193	3,340	2,834,239	14,201,866
2010	3,013,527	438,133	1,407,076	3,760	3,138,155	15,918,687
2011	1,899,530	306,796	3,048,523	3,800	3,055,991	18,113,745
2012	1,808,661	528,246	-93,521	3,495	4,471,261	15,882,375
2013	1,614,233	347,048	1,611,219	0	3,638,703	15,816,172
2014	2,711,326	369,825	2,301,494	127,317	3,929,063	17,142,437
2015	2,786,367	388,335	141,369	71,000	4,023,457	16,364,051
2016	2,783,429	394,051	21,130	77,828	4,002,706	15,482,127

¹ Includes employer contribution for claims and judgements

² Includes single premium deferred annuities

³ Net of investment fees

⁴ Through 2013, only reflects ING account balance maintenance fees

⁵ Includes refunds service buybacks

SECTION 3: Supplemental Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT F

Development of Unfunded Actuarial Accrued Liability for Year Ended June 30, 2016

1. Unfunded actuarial accrued liability at beginning of year		\$64,807,198
2. Total normal cost at beginning of year		1,853,935
3. Total contributions		-3,177,480
4. Interest		
(a) For whole year on (1) + (2)	\$4,999,585	
(b) For half year on (3)	<u>-119,156</u>	
(c) Total interest		<u>4,880,429</u>
5. Expected unfunded actuarial accrued liability		\$68,364,082
6. Changes due to:		
(a) (Gain)/loss	-\$674,508	
(b) Assumptions	N/A	
(c) Funding method	N/A	
(d) Plan provisions	<u>N/A</u>	
(e) Total changes		<u>-674,508</u>
7. Unfunded actuarial accrued liability at end of year		<u>\$67,689,574</u>

SECTION 3: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT G

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions:

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Withdrawal rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost:

The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability For Actives:

The value of all projected benefit payments for current members less the portion that will be paid by future normal costs.

Actuarial Accrued Liability For Pensioners:

The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued Liability:

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

SECTION 3: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

Amortization of the Unfunded

Actuarial Accrued Liability: Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return:

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 15 beneficiaries in pay status)		97
2. Participants inactive during year ended June 30, 2016 with vested rights		0
3. Participants active during the year ended June 30, 2016		55
Fully vested	40	
Not vested	15	
4. Inactive non-vested participants as of June 30, 2016		0

The actuarial factors as of the valuation date are as follows:

1. Total normal cost, including administrative expenses		\$1,857,592
2. Present value of future benefits		93,424,248
3. Present value of future normal costs		10,252,547
4. Actuarial accrued liability		83,171,701
Retired participants and beneficiaries	\$57,763,183	
Active participants	25,408,518	
5. Actuarial value of assets (equal to market value)		15,482,127
6. Unfunded actuarial accrued liability		\$67,689,574

SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT I (continued)

Summary of Actuarial Valuation Results

The determination of the recommended contribution is as follows:

1. Total benefit normal cost	\$1,782,592
2. Administrative expenses	75,000
3. Expected employee contributions	<u>-404,392</u>
4. Employer normal cost: (1) + (2) + (3)	\$1,453,200
5. Payment on unfunded actuarial accrued liability	6,176,576
6. Total recommended contribution: (4) + (5), adjusted for timing	<u>\$8,509,584</u>
7. Actuarially determined employer contribution for fiscal year ending June 30, 2018: (6)	\$8,509,584

SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT II

History of Employer Contributions

Plan Year Ended June 30	Actuarially Determined Employer Contributions (ADEC)*	Actual Contributions	Percentage Contributed
2008	\$2,839,437	\$2,923,367	100.0%
2009	3,337,523	2,817,204	84.4%
2010	3,454,336	3,013,527	87.2%
2011	4,570,429	1,899,530	41.6%
2012	4,730,394	1,610,531	34.0%
2013	4,984,688	1,614,233	32.4%
2014	6,633,618	2,711,326	40.9%
2015	6,579,139	2,786,367	42.4%
2016	7,197,627	2,783,429	38.7%
2017	8,073,936	--	--

**Prior to 2015, this amount was the Annual Required Contribution (ARC).*

SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT III

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded/ (Overfunded) AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll* [(b) - (a)] / (c)
07/01/2009	\$14,201,866	\$53,957,636	\$39,755,770	26.32%	\$5,142,023	773.15%
07/01/2011	18,113,745	61,433,641	43,319,896	29.49%	5,170,018	837.91%
07/01/2012	15,882,375	69,815,295	53,932,920	22.75%	5,273,429	1,022.73%
07/01/2013	15,816,172	69,418,753	53,602,581	22.78%	4,912,089	1,091.24%
07/01/2014	17,142,437	76,246,263	59,103,826	22.48%	4,573,055	1,292.44%
07/01/2015	16,364,051	81,171,249	64,807,198	20.16%	5,049,628	1,283.41%
07/01/2016	15,482,127	83,171,701	67,689,574	18.61%	5,054,901	1,339.09%

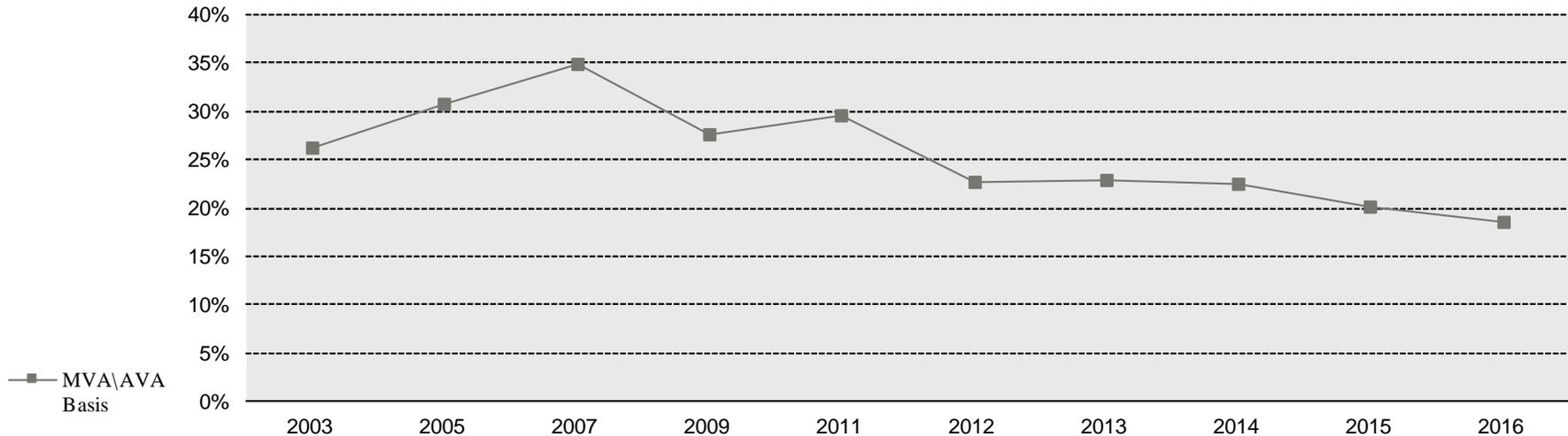
* Not less than zero

SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

**EXHIBIT IV
Funded Ratio**

A critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

The chart below depicts a history of the funded ratios for this plan. As shown below, the funded ratio has been below 25% for the last five years.



SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT V

Actuarial Assumptions and Actuarial Cost Method

Rationale for Assumptions: The information and analysis used in selecting each demographic assumption that has a significant effect on this actuarial valuation is shown in the Actuarial Experience Review July 1, 2011 to June 30, 2014 dated April 1, 2015. Please see this study for the rationale for each assumption used. As noted in this study, due to the low number of participants in the Police and Firefighters System, the mortality experience is not credible. It is our understanding that the State of Rhode Island deems the mortality assumptions reasonable if they match the assumptions used for the State of Rhode Island Municipal Employees Retirement System (MERS). Therefore, the mortality assumptions shown below match the MERS assumptions used at the time of the experience study.

Mortality Rates:

Healthy: Males – 115% of the RP-2000 Combined Healthy White Collar Mortality Table for Males
Females – 95% of the RP-2000 Combined Healthy White Collar Mortality Table for Females

The healthy mortality tables are adjusted to the valuation date using generational projection under Scale AA to reflect future mortality improvements.

Disabled: Males – 60% of PBGC Table V(a) for disabled males eligible for Social Security disability benefits.
Females - 60% of PBGC Table VI(a) for disabled females eligible for Social Security disability benefits.

No provision was made to the disabled mortality tables for future mortality improvement after the measurement date.

SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

Termination Rates before Retirement:			Rate (%)			
Age	Mortality*		Disability		Withdrawal	
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.34	0.34	0.00	0.00
25	0.04	0.02	0.34	0.34	0.00	0.00
30	0.04	0.03	0.44	0.44	0.00	0.00
35	0.07	0.04	0.58	0.58	0.00	0.00
40	0.10	0.06	0.88	0.88	0.00	0.00
45	0.15	0.10	1.44	1.44	0.00	0.00
50	0.23	0.15	2.42	2.42	0.00	0.00
55	0.38	0.25	2.42	2.42	0.00	0.00
60	0.64	0.44	2.42	2.42	0.00	0.00

100% of deaths and disabilities are assumed to be service-related.

** Generational projection is not reflected in tabular rates.*

Retirement Rates:

Years of Service	Retirement Probability
18 - 20	25%
21 - 22	35%
23 - 24	50%
25 or more	100%

All employees are assumed to retire no later than age 65.

Description of Weighted Average Retirement Age:

Age 50, determined as follows: The weighted average retirement age for each participant is calculated as the sum of the product of each potential current or future retirement age times the probability of surviving from current age to that age and then retiring at that age, assuming no other decrements. The overall weighted retirement age is the average of the individual retirement ages based on all the active participants included in the June 30, 2016 actuarial valuation.

SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

Percent Married:	85% of all active and retired police officers are assumed to be married.
Age of Spouse:	Females are assumed to be three years younger than males, unless dates of birth are provided.
Net Investment Return:	7.50% - The net investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes, as well as the Plan's target asset allocation.
Salary Increases:	4.00%; including 2.75% for inflationary increases, 0.50% for productivity increases and 0.75% for promotional and longevity increases
Inflation:	2.75%
Administrative Expenses:	Administrative expenses are assumed to be \$75,000, payable as of the beginning of the year.
Cost of Living Increases:	For all retirements prior to July 1, 2005, ½ of the expected payroll growth (1.625%). For all retirements after July 1, 2005, 3.00% per year.
Actuarial Value of Assets:	Market value
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant would have commenced participation if the plan had always been in existence. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.
Amortization Method:	The unfunded actuarial accrued liability is amortized on a level dollar basis with the period set to 24 years as of July 1, 2012.
Changes in Assumptions:	There were no changes in actuarial assumptions or methods since the last valuation.

SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

EXHIBIT VI

Summary of Plan Provisions

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

Plan Year: July 1 through June 30
Plan Status: Closed to new entrants as of July 1, 2010

Normal Retirement:

Eligibility 18 years of service

Amount The annual benefit at retirement is equal to the percentage of final salary specified in the table below. For pension purposes, final average salary is a three-year average of pay which is documented on the W-2 tax form, except monies paid to the Town of Johnston which were funded by private companies to hire officers for non-municipal detail assignments and the officer’s gun/qualification allowance.

<u>Years of Service</u>	<u>Benefit as a Percentage of Final Average Salary</u>
18	45.0%
19	47.5
20	50.0
21	52.5
22	55.0
23	57.5
24	60.0
25	65.0
26	66.0
27	67.0
28	68.0
29	69.0
30 or more	70.0

SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

Service Related Disability:

Eligibility Retirement because of a job related mental or physical incapacity
Amount 66 2/3% of final salary

Vesting:

Eligibility Upon termination of employment after 10 years of service a member is eligible for a benefit deferred to retirement age.
Benefit Formula 25% of final salary at termination plus cumulative COLA. Member may waive right to deferred retirement benefit in return for refund of employee and employer contribution account.
Commencement Date 21st anniversary of employment for deferred annuity. Immediate payment for refund.

Spouse's Pre-Retirement Death Benefit:

Eligibility Death while actively employed
Benefit Formula Surviving spouse (or if none, dependent children) receives benefit of 50% of final salary (30% of final salary for non-service related death)
Commencement Date Benefits commence as of the first payroll period after death

Retiree Cost-Of-Living Increases:

For retirements prior to July 1, 2005, pensions for retirees are indexed to one-half of the negotiated base pay increases for active police after benefit commencement. For retirements after July 1, 2005, pensions for retirees shall increase by a 3.00% compounded COLA. The COLA shall begin in the 25th month following the date of the officer's retirement.

Military Service Purchase:

A member may purchase up to two years of pension service credit for prior military service by contributing 6% of pay at any time prior to retirement, for each year purchased.

Employee Contributions:

8% of gross pay. Employees terminating before retirement may withdraw the employee-provided account and forfeit their right to pension benefits.

SECTION 4: Reporting Information for the Town of Johnston, Rhode Island Police Pension System

Eligibility:	All members of the Police Department hired before July 1, 2010 (members hired after this date are participants in the Rhode Island Municipal Employees Retirement System).
Forms of Payment:	All single participants receive a life annuity. All married participants receive a fully subsidized 67.5% joint and survivor annuity. There are no optional forms of payment.
Changes in Plan Provisions:	There have been no changes in plan provisions since the last valuation.

8454090v1/05016.004