

80 Lamberton Road Windsor, CT 06095 USA

Main +1 860 687 2110 Fax +1 860 687 2111

milliman.com

October 12, 2015

### PERSONAL & CONFIDENTIAL

Ms. Julie R. Goucher, Treasurer Town of Bristol Town Hall 10 Court Street Bristol, RI 02809

Re: Town of Bristol, RI Police Retirement Plan

Dear Julie:

We are pleased to provide ten copies of the July 1, 2015 actuarial report for Town of Bristol, RI Police Retirement Plan.

The Annual Required Contribution for FY 2016-2017 is \$1,316,046. Please refer to page 9 of the report for details.

Please let me know if you have questions.

Sincerely,

Secty

Rebecca A. Sielman, FSA Consulting Actuary

RAS:jc 10 BRP2015Valreport.doc



### Town of Bristol, RI Police Retirement Plan

### Actuarial Valuation as of July 1, 2015 For Fiscal Year 2016-17

Prepared by Milliman, Inc.

Rebecca A. Sielman, FSA Consulting Actuary

Jennifer M. Castelhano, ASA Associate Actuary

80 Lamberton Road Windsor, CT 06095 USA Tel +1 860.687.2410 Fax +1 860.687.2111 milliman.com

### **Table of Contents**

			Page
	CE	RTIFICATION	1
1	EXI	ECUTIVE SUMMARY	
	Α.	Highlights	3
	В.	Summary of Principal Results	9
11	PL/	AN ASSETS	
	Α.	Summary of Fund Transactions	10
	Β.	Actuarial Value of Assets	11
III	DE	VELOPMENT OF CONTRIBUTION	
	Α.	Past Service Cost	12
	В.	Actuarially Determined Contribution	13
	C.	Long Range Forecast	14
IV	AC	COUNTING INFORMATION	
	Α.	Notes to Required Supplementary Information	15
	В.	Historical Schedule of Funding Progress	16
	C.	Schedule of Employer Contributions	17
	D.	Accrued and Vested Benefits	18
	Ε.	Statement of Changes in Accrued Plan Benefits	19
v	ME	MBERSHIP DATA	
	Α.	Reconciliation of Membership From Prior Valuation	20
	В.	Statistics of Active Membership	21
	C.	Distribution of Active Members	22
	D.	Distribution of Inactive Members	23
	AP	PENDICES	
	Α.	Actuarial Funding Method	24
	В.	Actuarial Assumptions	25
	C.	Summary of Plan Provisions	26

July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan

### Certification

We have performed an actuarial valuation of the Plan as of July 1, 2015 for fiscal year 2016-17. This report presents the results of our valuation.

The ultimate cost of a pension plan is the total amount needed to provide benefits for plan members and beneficiaries and to pay the expenses of administering the plan. Pension costs are met by contributions and by investment return on plan assets. The principal purpose of this report is to set forth an actuarial recommendation of the contribution, or range of contributions, which will properly fund the plan, in accordance with applicable government regulations. In addition, this report provides:

- A valuation of plan assets and liabilities to review the year-to-year progress of funding,
- Information needed to meet disclosure requirements.
- Review of plan experience for the previous year to ascertain whether the assumptions and methods employed for valuation purposes are reflective of actual events and remain appropriate for prospective application.
- Assessment of the relative funded position of the plan, i.e., through a comparison of plan assets and projected plan liabilities.
- Comments on any other matters which may be of assistance in the funding and operation of the plan.

This report may not be used for purposes other than those listed above without Milliman's prior written consent. If this report is distributed to other parties, it must be copied in its entirety, including this certification section.

Milliman's work is prepared solely for the internal business use of the Town. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s): (a) the Town may provide a copy of Milliman's work, in its entirety, to the Town's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the Town; and (b) the Town may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law. No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

In preparing this report, we relied on employee census data and financial information as of the valuation date, furnished by the Town. We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have found them to be reasonably consistent and comparable with data used for other purposes. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete and our calculations may need to be revised. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

July 1, 2015 Actuarial Valuation

### Town of Bristol, RI Police Retirement Plan

Page 1

### Certification

The calculations reported herein have been made on a basis consistent with our understanding of ERISA and the related sections of the tax code. Additional determinations may be needed for purposes other than meeting funding requirements, such as judging benefit security at plan termination or meeting employer accounting requirements. On the basis of the foregoing, we hereby certify that, to the best of our knowledge, this report is complete and accurate and all costs and liabilities were determined in conformance with generally accepted actuarial principles and practices.

I further certify that, in my opinion, each actuarial assumption, method and technique used is reasonable taking into account the experience of the Plan and reasonable expectations or would, in the aggregate, result in a total contribution equivalent to that which would be determined if each such assumption, method, or technique were reasonable. Future actuarial measurements may differ significantly from the current measurements presented in this report due to factors such as, but not limited to, the following: plan experience differing from that anticipated by the economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuarial assignment, we did not perform an analysis of the potential range of such future measurement.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

I 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.

Rebecca A. Sielman, FSA Consulting Actuary

Jehn fer M. Castelhano, ASA Associate Actuary

### Assets

There are two different measures of the plan's assets that are used throughout this report. The **Market Value** is a snapshot of the plan's investments as of the valuation date. The **Actuarial Value** is a smoothed asset value designed to temper the volatile fluctuations in the market by recognizing investment gains or losses over five years.

	Market	Actuaria
Value as of July 1, 2014	\$14,679,057	\$13,838,972
Contributions	1,413,489	1,413,489
Investment Income	153,398	1,046,487
Benefit Payments	(1,454,147)	(1,454,147)
Value as of July 1, 2015	14,791,797	14,844,801

For fiscal year 2014-15, the plan's assets earned 1.05% on a Market Value basis and 7.57% on an Actuarial Value basis. The actuarial assumption for this period was 6.75%; the result is an asset loss of \$832,700 on a Market Value basis and a gain of \$113,400 on an Actuarial Value basis. Historical asset values are shown in the graph below to the left; historical returns are shown in the graph below to the right.







Please note that the Actuarial Value currently exceeds the Market Value by \$53,000. This figure represents investment losses that will be gradually recognized over the next five years. This process will exert upward pressure on the Town's contribution, unless there are offsetting market gains.

July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan

### Membership

There are three basic categories of plan members included in the actuarial valuation: (1) active employees who have met the eligibility requirements for membership, (2) former employees who have a vested right to benefits but have not yet started collecting, and (3) members who are receiving monthly pension benefits.



From July 1, 2014 to July 1, 2015, the overall membership decreased from 48 to 45. During this period, one retired member died with partial benefits continuing to a beneficiary and two beneficiaries died.



The decline in payroll levels over the past several years reflects the decline in the number of active members, The number of active members remains at three.

### July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan

This work product was prepared solely for the Town for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Page 4

Payroll

### **Plan Changes**

None.

### **Changes in Actuarial Methods or Assumptions**

None.

### July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan

Page 5

### **Funded Status**

The chart below shows the plan's Accrued Liability and Actuarial Value of Assets for the past few years.



### **Funded Status**

July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan Page 6

### **Actuarially Determined Contribution**

The Actuarially Determined Contribution consists of three pieces: a **Normal Cost** payment to fund the benefits earned each year, a **Past Service Cost** to gradually reduce any unfunded or surplus liability, and **Interest** to the end of the year. If the plan has a sufficiently large surplus, the Past Service Cost may be large enough to cover the Normal Cost, in which case no contribution is required.

Contribution levels for the current year and the past few fiscal years are shown below.



### Long Range Forecast

As of July 1, 2015, the Market Value of Assets and Actuarial Value of Assets are relatively close to one another. The market gains experienced in 2012-13 and 2013-14 were tempered by the market loss experienced in 2014-15; thus the Actuarially Determined Contribution is shown rising gradually over the next several years.



Funded Ratio



### **Actuarially Determined Contribution**

To the extent that there are future investment or liability gains or losses, changes in the actuarial assumptions or methods, or plan changes, the actual valuation results will differ from these forecasts. Please see Section III C for more details of the long range forecast.

July 1, 2015 Actuarial Valuation

### Town of Bristol, RI Police Retirement Plan

### Section I - Executive Summary B. Summary of Principal Results

Active Members33Terminated Vested Members00Terminated Nonvested Members Due Refund00Members in Pay Status4542Payroll\$228,206\$236,091Assets and LiabilitiesJuly 1, 2014July 1, 2015Market Value of Assets\$14,679,057\$14,791,797Actuarial Value of Assets\$2,295,423\$2,534,851Accrued Liability for Active Members00Accrued Liability for Terminated Vested Members00Accrued Liability for Members in Pay Status25,391,28225,236,440Total Accrued Liability13,847,73312,926,490Unfunded Accrued Liability13,847,73312,926,490Funded Ratio50.0%53.5%Actuarially Determined Contribution for Fiscal Year2015-162016-17Normal Cost\$71,752\$79,911Past Service Cost1,171,7391,152,919Interest83,93683,216Actuarially Determined Contribution1,327,4271,316,046	Membership	July 1, 2014	July 1, 2015
Terminated Nonvested Members Due Refund         0         0           Members in Pay Status         45         42           Payroll         \$228,206         \$236,091           Assets and Liabilities         July 1, 2014         July 1, 2015           Market Value of Assets         \$14,679,057         \$14,791,797           Actuarial Value of Assets         \$13,838,972         14,844,801           Accrued Liability for Active Members         0         0           Accrued Liability for Terminated Vested Members         0         0           Accrued Liability for Members in Pay Status         25,391,282         25,236,440           Total Accrued Liability         13,847,733         12,926,490           Funded Ratio         50.0%         53.5%           Acctuarially Determined Contribution for Fiscal Year         2015-16         2016-17           Normal Cost         \$71,752         \$79,911           Past Service Cost         1,171,739         1,152,919           Interest         83,936         83,216	Active Members	3	3
Members in Pay Status4542Payroll\$228,206\$236,091Assets and LiabilitiesJuly 1, 2014July 1, 2015Market Value of Assets\$14,679,057\$14,791,797Actuarial Value of Assets\$14,679,057\$14,791,797Actuarial Value of Assets\$14,679,057\$14,791,797Actuarial Value of Assets\$2,295,423\$2,534,851Accrued Liability for Active Members00Accrued Liability for Terminated Vested Members00Accrued Liability for Members in Pay Status25,391,28225,236,440Total Accrued Liability13,847,73312,926,490Unfunded Accrued Liability13,847,73312,926,490Funded Ratio50.0%53.5%Actuarially Determined Contribution for Fiscal Year2015-162016-17Normal Cost\$71,752\$79,911Past Service Cost1,171,7391,152,919Interest83,93683,216	Terminated Vested Members	0	0
Payroll\$228,206\$236,091Assets and LiabilitiesJuly 1, 2014July 1, 2015Market Value of Assets\$14,679,057\$14,791,797Actuarial Value of Assets\$14,679,057\$14,791,797Actuarial Value of Assets\$2,295,423\$2,534,851Accrued Liability for Active Members00Accrued Liability for Terminated Vested Members00Accrued Liability for Members in Pay Status25,391,28225,236,440Total Accrued Liability27,686,70527,771,291Unfunded Accrued Liability13,847,73312,926,490Funded Ratio50.0%53.5%Actuarially Determined Contribution for Fiscal Year2015-162016-17Normal Cost\$71,752\$79,911Past Service Cost1,171,7391,152,919Interest83,93683,216	Terminated Nonvested Members Due Refund	0	0
Assets and LiabilitiesJuly 1, 2014July 1, 2015Market Value of Assets\$14,679,057\$14,791,797Actuarial Value of Assets\$13,838,972\$14,844,801Accrued Liability for Active Members\$2,295,423\$2,534,851Accrued Liability for Terminated Vested Members00Accrued Liability for Members in Pay Status25,391,28225,236,440Total Accrued Liability27,686,70527,771,291Unfunded Accrued Liability13,847,73312,926,490Funded Ratio50.0%53.5%Actuarially Determined Contribution for Fiscal Year2015-162016-17Normal Cost\$71,752\$79,911Past Service Cost1,171,7391,152,919Interest83,93683,216	Members in Pay Status	45	42
Market Value of Assets\$14,679,057\$14,791,797Actuarial Value of Assets13,838,97214,844,801Accrued Liability for Active Members\$2,295,423\$2,534,851Accrued Liability for Terminated Vested Members00Accrued Liability for Members in Pay Status25,391,28225,236,440Total Accrued Liability27,686,70527,771,291Unfunded Accrued Liability13,847,73312,926,490Funded Ratio50.0%53.5%Actuarially Determined Contribution for Fiscal Year2015-162016-17Normal Cost\$71,752\$79,911Past Service Cost1,171,7391,152,919Interest83,93683,216	Payroll	\$228,206	\$236,091
Actuarial Value of Assets13,838,97214,844,801Accrued Liability for Active Members\$2,295,423\$2,534,851Accrued Liability for Terminated Vested Members00Accrued Liability for Members in Pay Status25,391,28225,236,440Total Accrued Liability27,686,70527,771,291Unfunded Accrued Liability13,847,73312,926,490Funded Ratio50.0%53.5%Actuarially Determined Contribution for Fiscal Year2015-162016-17Normal Cost Past Service Cost Interest\$71,752 1,152,919 83,936\$79,911 83,9361,152,919 83,216	Assets and Liabilities	July 1, 2014	July 1, 2015
Accrued Liability for Active Members\$2,295,423\$2,534,851Accrued Liability for Terminated Vested Members00Accrued Liability for Members in Pay Status25,391,28225,236,440Total Accrued Liability27,686,70527,771,291Unfunded Accrued Liability13,847,73312,926,490Funded Ratio50.0%53.5%Actuarially Determined Contribution for Fiscal Year2015-162016-17Normal Cost\$71,752\$79,911Past Service Cost1,171,7391,152,919Interest83,93683,216	Market Value of Assets	\$14,679,057	\$14,791,797
Accrued Liability for Terminated Vested Members       0       0         Accrued Liability for Members in Pay Status       25,391,282       25,236,440         Total Accrued Liability       27,686,705       27,771,291         Unfunded Accrued Liability       13,847,733       12,926,490         Funded Ratio       50.0%       53.5%         Actuarially Determined Contribution for Fiscal Year       2015-16       2016-17         Normal Cost       \$71,752       \$79,911         Past Service Cost       1,171,739       1,152,919         Interest       83,936       83,216	Actuarial Value of Assets	13,838,972	14,844,801
Accrued Liability for Members in Pay Status       25,391,282       25,236,440         Total Accrued Liability       27,686,705       27,771,291         Unfunded Accrued Liability       13,847,733       12,926,490         Funded Ratio       50.0%       53.5%         Actuarially Determined Contribution for Fiscal Year       2015-16       2016-17         Normal Cost       \$71,752       \$79,911         Past Service Cost       1,171,739       1,152,919         Interest       83,936       83,216	Accrued Liability for Active Members	\$2,295,423	\$2,534,851
Total Accrued Liability         27,686,705         27,771,291           Unfunded Accrued Liability         13,847,733         12,926,490           Funded Ratio         50.0%         53.5%           Actuarially Determined Contribution for Fiscal Year         2015-16         2016-17           Normal Cost         \$71,752         \$79,911           Past Service Cost         1,171,739         1,152,919           Interest         83,936         83,216	Accrued Liability for Terminated Vested Members	0	0
Unfunded Accrued Liability         13,847,733         12,926,490           Funded Ratio         50.0%         53.5%           Actuarially Determined Contribution for Fiscal Year         2015-16         2016-17           Normal Cost         \$71,752         \$79,911           Past Service Cost         1,171,739         1,152,919           Interest         83,936         83,216	Accrued Liability for Members in Pay Status	25,391,282	25,236,440
Funded Ratio50.0%53.5%Actuarially Determined Contribution for Fiscal Year2015-162016-17Normal Cost\$71,752\$79,911Past Service Cost1,171,7391,152,919Interest83,93683,216	Total Accrued Liability	27,686,705	27,771,291
Actuarially Determined Contribution for Fiscal Year2015-162016-17Normal Cost\$71,752\$79,911Past Service Cost1,171,7391,152,919Interest83,93683,216	Unfunded Accrued Liability	13,847,733	12,926,490
Normal Cost\$71,752\$79,911Past Service Cost1,171,7391,152,919Interest83,93683,216	Funded Ratio	50.0%	53.5%
Past Service Cost         1,171,739         1,152,919           Interest         83,936         83,216	Actuarially Determined Contribution for Fiscal Year	2015-16	2016-17
Interest 83,936 83,216	Normal Cost	\$71,752	\$79,911
	Past Service Cost	1,171,739	1,152,919
Actuarially Determined Contribution 1,327,427 1,316,046	Interest	83,936	83,216
	Actuarially Determined Contribution	1,327,427	1,316,046

### July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan

### Section II - Plan Assets A. Summary of Fund Transactions

	Trust		
	Assets	Accruals	Total
Market Value as of July 1, 2014	\$14,533,711.25	\$145,346.17	\$14,679,057.42
Employer Contributions	1,405,987.68	(23,410.00)	1,382,577.68
Employee Contributions	30,910.84	0.00	30,910.84
Benefit Payments	(1,454,960.89)	814.34	(1,454,146.55)
Interest and Dividends	379,686.90	0.00	379,686.90
Unrealized Gains/(Losses)	537,203.92	0.00	537,203.92
Realized Gains/(Losses)	(678,066.65)	0.00	(678,066.65)
Investment Expenses	(83,602.89)	0.00	(83,602.89)
Administrative Expenses	(1,827.66)	4.29	(1,823.37)
Market Value as of July 1, 2015	14,669,042.50	122,754.80	14,791,797.30
Approximate Rate of Return			1.05%

Note: The rate shown here is not the dollar or time weighted investment yield rate which measures investment performance. It is an approximate net return assuming all activity occurred on average midway through the fiscal year.

### **Asset Allocation**



### July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan

Page 10

### SECTION II - PLAN ASSETS B. Development of Actuarial Value of Assets

In order to minimize the impact of market fluctuations on the contribution level, we use an Actuarial Value of Assets that recognizes gains and losses over a five year period. The Actuarial Value of Assets as of July 1, 2015 is determined below.

1.	Expected Market Value of Assets:	
	a. Market Value of Assets as of July 1, 2014	\$14,679,057
	b. Employer and Employee Contributions	1,413,489
	c. Benefit Payments	(1,454,147)
	<ul> <li>d. Expected Investment Return Based on 6.75% Interest</li> </ul>	<u>986,129</u>
	e. Expected Market Value of Assets as of July 1, 2015	15,624,528
2.	Actual Market Value of Assets as of July 1, 2015	14,791,797
3.	Market Value (Gain)/Loss: (1e) - (2)	832,731

4. Delayed Recognition of Market (Gains)/Losses:

	Plan Year End	(Gain)/Loss	Percent Not Recognized	Amount Not Recognized	
	6/30/2015	\$832,731	80%	\$666,185	
	6/30/2014	(796,875)	60%	(478,125)	
	6/30/2013	(337,641)	40%	(135,056)	
	6/30/2012	0	20%	<u>0</u>	
					53,004
2	Actuarial Value as of	July 1, 2015: (2) + (4	)		14,844,801
	Approximate Rate of	Return on Actuarial V	/alue		7.57%
•	Actuarial Value (Gain	)/Loss			(113,358)

5.

6.

7.

### SECTION III - DEVELOPMENT OF CONTRIBUTION A. Past Service Cost

For determining the Past Service Cost, the Unfunded Accrued Liability is amortized as a level percent over a period of 20 years starting on July 1, 2009.

		July 1, 2014	July 1, 2015
87			
1.	Accrued Liability		
	Active Members	\$2,295,423	\$2,534,851
	Terminated Vested Members	0	0
	Terminated Non-Vested Members Due Refund	0	0
	Retired Members	21,680,976	21,443,334
	Disabled Members	2,506,937	2,550,863
	Beneficiaries of Deceased Members	1,203,369	1,242,243
	Total	27,686,705	27,771,291
	- Clai	21,000,100	,,,
2.	Actuarial Value of Assets (see Section II B)	13,838,972	14,844,801
۷.	Actualial value of Assets (see Section if B)	10,000,072	14,044,001
0	Linfunded Accouncil Linkility $(1)$ (2)	10 047 700	12 026 400
3.	Unfunded Accrued Liability: (1) - (2)	13,847,733	12,926,490
		50.00/	50 50(
4.	Funded Ratio: (2) / (1)	50.0%	53.5%
5.	Amortization Period	15	14
6.	Amortization Growth Rate	3.00%	3.00%
7.	Past Service Cost: (3) amortized over (5)	1,171,739	1,152,919

		Fiscal Year	Fiscal Year
		2015-16	2016-17
1.	Total Normal Cost	\$101,544	\$105,365
2.	Expected Employee Contributions	29,792	25,454
3,	Expected Expenses	0	0
4.	Net Normal Cost: (1) - (2) + (3)	71,752	79,911
5.	Past Service Cost (see Section III A)	1,171,739	1,152,919
6.	Interest on (4) + (5) to the end of the year	83,936	83,216
7.	Actuarially Determined Contribution: (4) + (5) + (6)	1,327,427	1,316,046

### SECTION III - DEVELOPMENT OF CONTRIBUTION B. Actuarially Determined Contribution

**Milliman Actuarial Valuation** 

# SECTION III - DEVELOPMENT OF CONTRIBUTION C. Long Range Forecast

return 6.75% on a market value basis each year, and there are no future changes in the actuarial methods or assumptions or in the plan provisions. Actual results at each point in This forecast is based on the results of the July 1, 2015 actuarial valuation and assumes that the Town will pay the Actuarially Determined Contribution each year, the assets will time will vield different values reflecting the actual experience of the plan membership and assets.

ļ	ڎ	Values as of the Valuation Date	aluation Date			Cash Flov	Cash Flows Projected to the Following Fiscal Year	he Following Fi	scal Year
		Actuarial	Unfunded		Fiscal				
Valuation	Accrued	Value of	Accrued	Funded	Үеаг	Employer	Employee	Benefit	Net
Date	Liability	Assets	Liability	Ratio	Ending	Contributions	Contributions	Payments	<b>Cash Flows</b>
7/1/2015	\$27,771,291	\$14,844,801	\$12,926,490	53.5%	2017	\$1,316,046	\$16,000	(\$1,575,000)	(\$242,954)
7/1/2016	28,206,000	15,759,000	12,447,000	55.9%	2018	1,316,000	9,000	(1,643,000)	(318,000)
7/1/2017	28,549,000	16,625,000	11,924,000	58.2%	2019	1,312,000	6,000	(1,690,000)	(372,000)
7/1/2018	28,805,000	17,399,000	11,406,000	60.4%	2020	1,332,000	5,000	(1,727,000)	(390,000)
7/1/2019	29,012,000	18,010,000	11,002,000	62.1%	2021	1,385,000	5,000	(1,762,000)	(372,000)
7/1/2020	29,189,000	18,823,000	10,366,000	64.5%	2022	1,426,000	5,000	(1,796,000)	(365,000)
7/1/2021	29,343,000	19,709,000	9,634,000	67.2%	2023	1,465,000	5,000	(1,831,000)	(361,000)
7/1/2022	29,470,000	20,661,000	8,809,000	70.1%	2024	1,504,000	5,000	(1,865,000)	(356,000)
7/1/2023	29,569,000	21,682,000	7,887,000	73.3%	2025	1,544,000	1,000	(1,914,000)	(369,000)
7/1/2024	29,639,000	22,777,000	6,862,000	76.8%	2026	1,576,000	0	(1,954,000)	(378,000)
7/1/2025	29,645,000	23,933,000	5,712,000	80.7%	2027	1,607,000	0	(1,986,000)	(379,000)
7/1/2026	29,608,000	25,158,000	4,450,000	85.0%	2028	1,640,000	0	(2,017,000)	(377,000)
7/1/2027	29,536,000	26,465,000	3,071,000	89.6%	2029	1,668,000	0	(2,048,000)	(380,000)
7/1/2028	29,424,000	27,861,000	1,563,000	94.7%	2030	1,668,000	0	(2,078,000)	(410,000)
7/1/2029	29,272,000	29,350,000	(78,000)	100.3%	2031	0	0	(2,106,000)	(2,106,000)
7/1/2030	29,075,000	30,907,000	(1,832,000)	106.3%	2032	0	0	(2,134,000)	(2,134,000)
7/1/2031	28,842,000	30,816,000	(1,974,000)	106.8%	2033	0	0	(2,160,000)	(2,160,000)
7/1/2032	28,559,000	30,690,000	(2,131,000)	107.5%	2034	0	0	(2,186,000)	(2,186,000)
7/1/2033	28,234,000	30,528,000	(2,294,000)	108.1%	2035	0	0	(2,209,000)	(2,209,000)
7/1/2034	27,861,000	30,330,000	(2,469,000)	108.9%	2036	0	0	0	0

For purposes of this forecast the amortization period declines to 1 year to illustrate the progress of the plan towards becoming fully funded; in actual practice the amortization period will not be less than 10 years in order to shield the Town from contribution volatility.

### July 1, 2015 Actuarial Valuation

Town of Bristol, RI Police Retirement Plan

This work product was prepared solely for the Town for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Page 14

### SECTION IV - ACCOUNTING INFORMATION A. Notes to Required Supplementary Information

The information presented in Section IV has been determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date	July 1, 2015
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level percent
Amortization Period	Closed 20 years from July 1, 2009
Asset Valuation Method	5 Year Smoothed Market Value
Actuarial Assumptions	
Investment Rate of Return	6.75%
Projected Salary Increases	4.25%
Amortization Growth Rate	3.00%
Cost-of-Living Adjustments	3.00%

**Milliman Actuarial Valuation** 

## SECTION IV - ACCOUNTING INFORMATION B. Historical Schedule of Funding Progress

		(1)	(2)	(3)	(4)	(5)	(6) UAAL as a
Actuarial		Actuarial	Actuarial	Unfunded AAL	Funded		Percentage of
Valuation	For	Value of	Accrued	(UAAL)	Ratio	Covered	<b>Covered Payroll</b>
Date	Fiscal Year	Assets	Liability (AAL)	(2) - (1)	(1) / (2)	Payroll	(3) / (5)
07/01/2006	2007-08	\$11,575,785	\$17,184,668	\$5,608,883	67.4%	\$918,225	610.8%
07/01/2007	2008-09	12,316,696	18,091,700	5,775,004	68.1%	818,845	705.3%
07/01/2008	2009-10	13,130,907	20,456,564	7,325,657	64.2%	485,611	1508.5%
07/01/2009	2010-11	12,424,250	20,981,926	8,557,676	59.2%	432,376	1979.2%
07/01/2010	2011-12	12,148,307	20,937,357	8,789,050	58.0%	453,506	1938.0%
07/01/2011	2012-13	12,235,119	21,492,883	9,257,764	56.9%	472,541	1959.1%
07/01/2012	2013-14	12,415,633	26,521,112	14,105,479	46.8%	357,605	3944.4%
07/01/2013	2014-15	12,857,275	27,204,260	14,346,985	47.3%	300,035	4781.8%
07/01/2014	2015-16	13,838,972	27,686,705	13,847,733	50.0%	228,206	6068.1%
07/01/2015	2016-17	14,844,801	27.771.291	12.926.490	53.5%	236,091	5475.2%

July 1, 2015 Actuarial Valuation

Town of Bristol, RI Police Retirement Plan

This work product was prepared solely for the Town for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Page 16

**Milliman Actuarial Valuation** 

### Section IV - Accounting Information C. Schedule of Employer Contributions

	(1)	(2) Contribution in	(3)	(4)	(5)
		Relation to the	Contribution		<b>Contribution as a</b>
Fiscal Year	Actuarially	Actuarially	Deficiency/		Percentage of
Ending	Determined	Determined	(Excess)	Covered	<b>Covered Payroll</b>
June 30	Contribution	Contribution	(1) - (2)	Payroll	(2) / (4)
2008	\$620,203	\$789,598	(\$169,395)	\$918,225	86%
2009	640,220	735,650	(95,430)	818,845	%06
2010	770,003	770,003	0	485,611	159%
2011	784,676	784,676	0	432,376	181%
2012	828,850	958,333	(129,483)	453,506	211%
2013	899,460	899,474	(14)	472,541	190%
2014	1,288,194	1,288,194	0	357,605	360%
2015	1,341,343	1,382,578	(41,235)	300,035	461%
2016	1,327,427	TBD	TBD	228,206	TBD
2017	1.316.046	TBD	TBD	236.091	TBD

July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan This work product was prepared solely for the Town for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Page 17

### SECTION IV - ACCOUNTING INFORMATION D. Accrued and Vested Benefits

The actuarially computed Value of Accrued Benefits represents the present value of (a) the benefits based on earnings and service to date expected to become payable at future dates to present employees, (b) the benefits expected to become payable to former employees who have terminated service with vested rights or who have become inactive, and (c) the benefits currently payable to retired participants and beneficiaries.

		As of	As of
_		July 1, 2014	July 1, 2015
1	Value of Vested Benefits		
1123	Active Members	\$2,196,140	\$2,486,834
	Terminated Vested Members	0	0
	Terminated Non-Vested Due Refund	0	0
	Retired Members	21,680,976	21,443,334
	Disabled Members	2,506,937	2,550,863
	Beneficiaries of Deceased Members	<u>1,203,369</u>	<u>1,242,243</u>
	Total Value of Vested Benefits	27,587,422	27,723,274
2.	Value of Non-Vested Benefits	15,901	12,446
3.	Total Value of Accrued Benefits: (1) + (2)	27,603,323	27,735,720
4.	Market Value of Assets	14,679,057	14,791,797
5.	Vested Funded Ratio: (4) / (1)	53.2%	53.4%
6.	Accrued Funded Ratio: (4) / (3)	53.2%	53.3%

### July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan

### SECTION IV - ACCOUNTING INFORMATION E. Statement of Changes in Accrued Plan Benefits

Increase/(Decrease) during the 2014-15 plan year attributable to:	
Increase for interest due to the decrease in the discount period	\$1,814,948
Benefits Accumulated/(Forfeited)	(228,404)
Benefit Payments	(1,454,147)
Plan Amendments	0
Changes in Actuarial Assumptions	0
Net Increase/(Decrease)	132,397
Value of Accrued Plan Benefits:	
July 1, 2015	\$27,735,720
July 1, 2014	27,603,323
Net Increase/(Decrease)	132,397

### SECTION V - MEMBERSHIP DATA A. Reconciliation of Membership from Prior Valuation

Details of the changes in the Plan membership since the last valuation are shown below. Additional details on the Plan membership are provided in the remainder of Section V.

		Term.	Due			Bene-	
	Active	Vested	Refund	Retirees	Disabled	ficiaries	Tota
Count as of July 1, 2014	3	0	0	34	3	8	48
Terminated not vested		-	÷	÷			0
Terminated, benefits due	-	1	2	5	÷	-	0
Retired		-	-	2	-		0
Died, with beneficiary	- <u>-</u>	12	-	(1)	( <b>-</b>	1	0
Died, no beneficiary	2 <b>9</b> 0	127	-	×	-	(3)	(3)
New member	2043	:#:	( <del>-</del> );	-	. <del>.</del> .	-	0
New beneficiary			<del></del>	-	-	-	0
Lump sum paid	: ( <del>.</del>	-	-	=			0
Rehired	( <b>1</b>			=		<del></del>	0
New QDRO	1.5	-	-	8	(e		0
Correction			-	i.	3 <u>2</u>	125	0
Count as of July 1, 2015	3	0	0	33	3	6	45

	As of	As of
	July 1, 2014	July 1, 2015
Number of Active Members		
Number	3	:
Average Age	46,7	47.
Average Service	19.0	20.
Total Payroll	\$228,206	\$236,09
Average Payroll	76,069	78,69
Terminated Vested Members		
Number	0	
Total Annual Benefit	\$0	\$
Average Annual Benefit	0	
Average Age	0.0	0.
erminated Nonvested Members Due Refund		
Number	0	
Retired Members		
Number	34	3
Total Annual Benefit	\$1,219,900	\$1,199,99
Average Annual Benefit	35,879	36,36
Average Age	58.9	59.
Disabled Members		
Number	3	
Total Annual Benefit	\$139,019	\$143,19
Average Annual Benefit	46,340	47,73
Average Age	50.0	51.
Beneficiaries of Deceased Members		
Number	8	
Total Annual Benefit	\$128,211	\$128,30
Average Annual Benefit	16,026	21,38
Average Age	77.1	74.

### SECTION V - MEMBERSHIP DATA B. Statistics of Membership

### July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan

This work product was prepared solely for the Town for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

Page 21

Milliman Actuarial Valuation

# C. Distribution of Active Members as of July 1, 2015 **SECTION V - MEMBERSHIP DATA**

Age 0-4 < 25 0 25-29 0 30-34 0 35-39 0 40-44 0	5-9	10 44						
		10-14	15-19	20-24	25-29	30-34	35+	Total
<b>25-29</b> 0 0 <b>30-34</b> 0 <b>35-39</b> 0 1 <b>40-44</b> 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0	0	ο	ο	0	0	0	0
<b>30-34</b> <b>35-39</b> <b>40-44</b>	0	0	0	0	0	0	0	0
35-39 0 40-44 0 45-40 0	0	0	0	0	0	0	0	0
<b>40.44</b> 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0	0	0	0	0	0	0	0
AE 40	0	0	-	-	0	0	0	2
	0	0	0	0	0	0	0	0
<b>50-54</b> 0	0	0	0	0	0	0	0	0
<b>55-59</b> 0	0	0	0	-	0	0	0	~
<b>60-64</b> 0	0	0	0	0	0	0	0	0
<b>65 +</b> 0	0	0	0	0	0	0	0	0
Total 0	0	0	-	2	0	0	0	3
			i	;				
Distribution By Age			D	stribution by Y	Distribution by Years of Service			
4				4				Γ
3			T	3				
4				1				
-								

### Town of Bristol, RI Police Retirement Plan July 1, 2015 Actuarial Valuation

This work product was prepared solely for the Town for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman work product.

Page 22

35+

30-34

25-29

20-24

15-19

10-14

6-<u>5</u>

**0** 4 0

65 +

60-64

55-59

50-54

45-49

40-44

35-39

30-34

25-29

< 25

0

### SECTION V - MEMBERSHIP DATA D. Distribution of Inactive Members as of July 1, 2015

			Annua
	Age	Number	Benefits
Terminated Vested Members	< 30	0	\$0
	30 - 39	0	0
	40 - 49	0	0
	50 - 59	0	0
	60 - 64	0	0
	65 +	0	0
	Total	0	0
Retired Members	< 50	2	\$61,849
	50 - 59	19	835,186
	60 - 69	7	154,237
	70 - 79	5	148,721
	80 - 89	0	0
	90 +	0	0
	Total	33	1,199,993
Disabled Retirees	< 50	1	\$46,947
	50 - 59	2	96,243
	60 - 69	0	0
	70 - 79	0	0
	80 - 89	0	0
	90 +	0	0
	Total	3	143,190
Beneficiaries	< 50	0	\$0
	50 - 59	õ	φ0 0
	60 - 69	0	0
	70 - 79	5	93,993
	80 - 89	1	34,307
	90 +	0	04,507
	50 + Total	6	128,300
	TULAT	0	120,300

### July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan

### **APPENDIX A - ACTUARIAL FUNDING METHOD**

The actuarial funding method used in the valuation of this Plan is known as the **Entry Age Normal Cost Method**. Recommended annual contributions until the accrued liability is completely funded will consist of two pieces: Normal Cost plus a payment towards the Unfunded Accrued Liability.

The **Normal Cost** is determined by calculating the present value of future benefits for present active Members that will become payable as the result of death, disability, retirement or termination. This cost is then spread as a level percentage of earnings from entry age to termination as an Active Member. If Normal Costs had been paid at this level for all prior years, a fund would have accumulated. Because this fund represents the portion of benefits that would have been funded to date, it is termed the **Accrued Liability**. In fact, it is calculated by adding the present value of benefits for Retired Members and Terminated Vested Members to the present value of benefits for Active Members and subtracting the present value of future Normal Cost contributions.

The funding cost of the Plan is derived by making certain specific assumptions as to rates of interest, mortality, turnover, etc. which are assumed to hold for many years into the future. Since actual experience may differ somewhat from the assumptions, the costs determined by the valuation must be regarded as estimates of the true costs of the Plan.

The unfunded liability for the plan is the excess of the Accrued Liability over the assets which have been accumulated for the plan. This Unfunded Accrued Liability is amortized as a level percent. Beginning on July 1, 2009, the amortization period is 20 years; the amortization period will decrease each year until it reaches 10 years, after which point it will remain at 10 years.

The Actuarial Value of Assets is determined by recognizing asset gains and losses over a five year period.

### **APPENDIX B - ACTUARIAL ASSUMPTIONS**

Interest	6.75%
Salary Scale	4.25%
Amortization Growth Rate	3.00%
Cost of Living Increases	3.00%
Expenses	None.
Mortality	RP-2000 Combined Healthy Mortality Table, with generational projection per Scale AA. This assumption includes a margin for future improvements beyond the valuation date.
Disabled Mortality	RP-2000 Disabled Mortality.
Statutory Limits	Applicable annual IRC Section 415 benefit limits and IRC Section 401(a)(17) compensation limits are assumed to increase by 3.50% per year.
Turnover	None.
Retirement	50% of members will retire at the completion of 20 years of service, 50% the year after, 40% the next year, and 5% each year thereafter. 100% will have retired upon attaining 29 years of service.
Disability	50% of the 1985 Pension Disability Table (DP-85 Table) Class 4 rates.
Survivor Benefit	100% of participants are assumed to have an eligible spouse. The female spouse is assumed to be three years younger than the male spouse.
Form of Annuity	Five year certain and life annuity with 67.5% joint and survivor.

### **APPENDIX C - SUMMARY OF PLAN PROVISIONS**

This exhibit summarizes the major provisions of the Plan. It is not intended to be, nor should it be interpreted as a complete statement of all plan provisions. All eligibility requirements and benefit amounts shall be determined in strict accordance with the plan document itself. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

Eligibility	All members of the Town of Bristol Police Force hired prior to March 22, 1998 are eligible. Employees hired after March 22, 1998 will enter the State Retirement System.
Final Average Earnings	Average of the two highest consecutive years of base pay plus longevity and holiday pay.
Credited Service	Full years and fractions to the nearest month.
Normal Retirement Date	Completion of 20 or more years of service.
Normal Retirement Benefit	60% of final average earnings plus 1% of final average earnings for each year of service in excess of 20 years to a maximum of 10 additional years.
Deferred Retirement	Benefit payment will be deferred to actual retirement and will equal the Normal Retirement benefit based on years of service (maximum 30) and average compensation at actual retirement date.
Early Retirement Eligibility	Vested.
Early Retirement Benefit	Accrued benefits reduced actuarially for early payment.
Severance Benefit Eligibility	Less than 10 years of service.
Severance Benefit	Greater of employee's accumulations or (2) weeks pay for year of service.
Vested Benefit Eligibility	10 years of service.
Vested Benefit	Greater of:
	Normal Retirement Benefit reduced by ratio of actual years of service at date of termination over total years of service the participant would have worked had the participant continued working to Normal Retirement Date.
	Greater of 3 weeks pay for each year of service or the total of the participant's own contributions to the fund with interest at 3% is payable as a lump sum.

July 1, 2015 Actuarial Valuation Town of Bristol, RI Police Retirement Plan Page 26

### **APPENDIX C - SUMMARY OF PLAN PROVISIONS**

Pre-Retirement Survivor Benefit Eligibility	Death as a result of performance of duties or completed at least 5 years of service.
Pre-Retirement Survivor Benefit	Spouse is entitled to 67 ½% of "Accrued Benefit" (assuming constant future earnings to normal retirement date) and children to 22 ½% (i.e. one-third of 67 ½%) until the earliest of 22nd birthday, ceases to attend school unless disabled, or marriage of child. If spouse is more than 3 years younger than participant, then the survivor's benefit is reduced to the actuarial equivalent of a survivor's benefit where spouse is precisely 3 years younger (except for children where it's calculated without actuarial reduction). A maximum of three children are eligible to receive benefits for each death claim. If no survivor benefit is payable to a spouse or surviving children, the beneficiary will receive employee contributions with 3.5% interest.
Lump Sum Death Benefit	\$2,500 if death occurs after actual Retirement Date, otherwise \$8,000.
Post-Retirement Survivor Benefit Eligibility	Death of participant after retirement.
Post-Retirement Survivor Benefit	Spouse is entitled to 67 $\frac{1}{2}$ % of "Normal Retirement Benefit" and children to 22 $\frac{1}{2}$ % (i.e. one-third of 67 $\frac{1}{2}$ %) until the earliest of 22nd birthday, ceases to attend school unless disabled, or marriage of child. If spouse is more than 3 years younger than participant, then the survivor's benefit is reduced to the actuarial equivalent of a survivor's benefit where spouse is precisely 3 years younger. A maximum of three children are eligible to receive benefits for each death claim.
Accidental Disability Eligibility	Injuries sustained in the performance of duties.
Accidental Disability Benefit	72% of annual salary at the time of disability.
Ordinary Disability Eligibility	10 years of service.
Ordinary Disability Benefit	50% of final average earnings.

### **APPENDIX C - SUMMARY OF PLAN PROVISIONS**

Cost of Living Adjustment (COLA)	All participants retiring on and after April 1, 1998 and all participants retiring on a disability pension will be eligible for an annual 3.0% Cost of Living Adjustment. The Cost of Living increase is payable July 1 of each year.
Employee Contributions	Prior to July 1, 1998: 38.5% of total cost of plan with a maximum of 9.4% of pay; the contributions are after-tax.
	On and after July 1, 1998: 11% of pay with adjustments between 13% and 9% based on funding requirements. Post June 30, 1998 contributions are pre-tax.
	Employee contributions are credited with 3.0% interest for termination and 3.5% for survivor benefits; compounded from each April 1.
Town Contributions	Prior to July 1, 1998: 61.5% of total cost of plan with a maximum of 15% of pay.
	On and after July 1, 1998: 24% of pay with adjustments up or down based on funding requirements.