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# **TOWN OF NEWINGTON POLICE OFFICERS' PENSION PLAN**

**Actuarial Valuation as of July 1, 2018  
For Fiscal Year 2019-20**

**Prepared by**

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## **Certification**

We have performed an actuarial valuation of the Plan as of July 1, 2018 for fiscal year 2019-20. 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.

## 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.

We further certify that, in our 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; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of 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.

The signing actuary is independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



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Consulting Actuary



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## Section I - Executive Summary

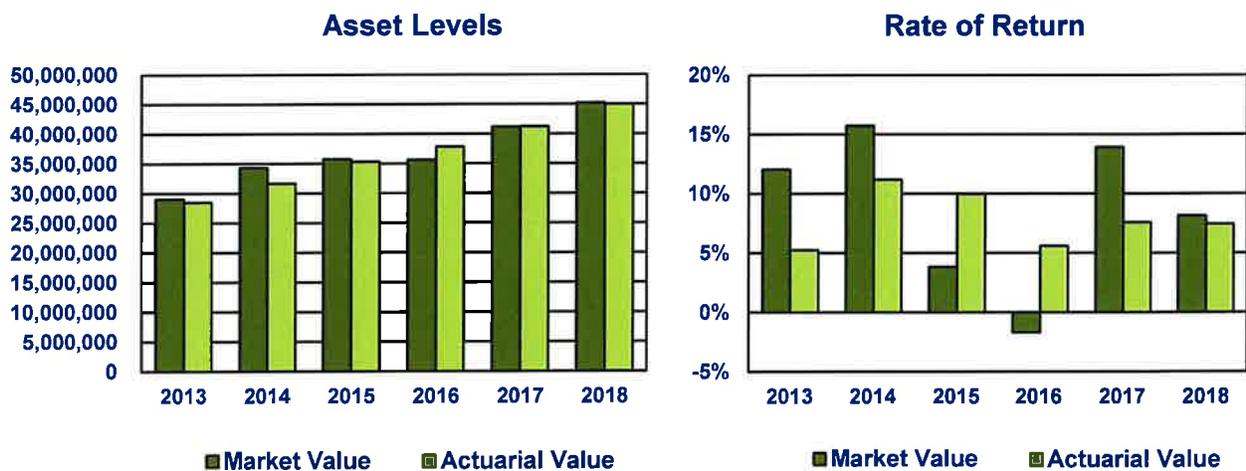
### A. Highlights

#### 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.

	<b>Market</b>	<b>Actuarial</b>
Value as of July 1, 2017	\$41,206,263	\$41,264,222
Employer and Employee Contributions	4,181,335	4,181,335
Investment Income	3,385,746	3,101,583
Benefit Payments and Administrative Expenses	(3,554,351)	(3,554,351)
Value as of July 1, 2018	45,218,993	44,992,789

For fiscal year 2017-18, the plan's assets earned 8.155% on a Market Value basis and 7.460% on an Actuarial Value basis. The actuarial assumption for this period was 7.125%; the result is an asset gain of \$427,600 on a Market Value basis and a gain of \$139,300 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.



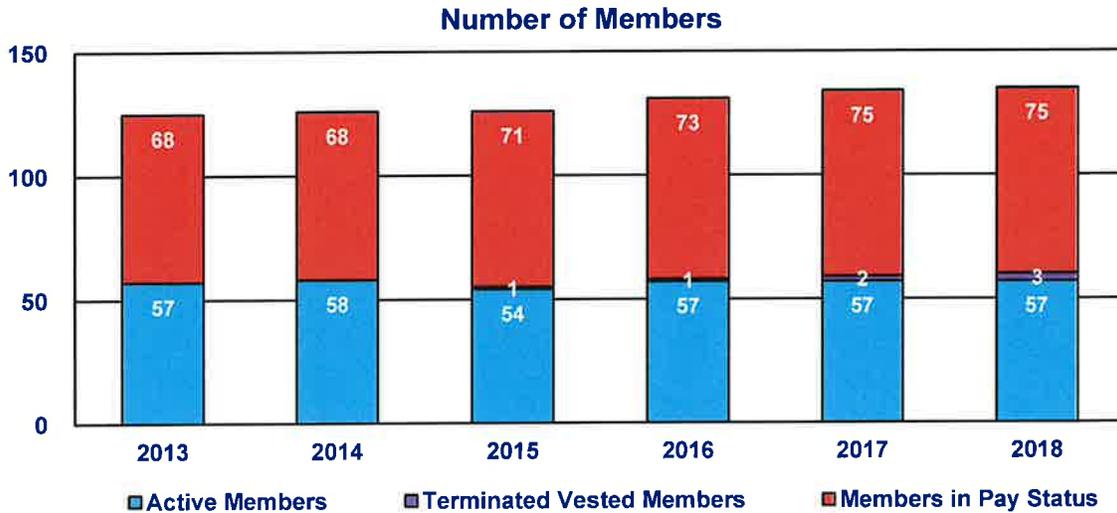
Please note that the Actuarial Value currently is less than the Market Value by \$226,200. This figure represents investment gains that will be gradually recognized over the next five years. This process will exert downward pressure on the Town's contribution, unless there are offsetting market losses.

## Section I - Executive Summary

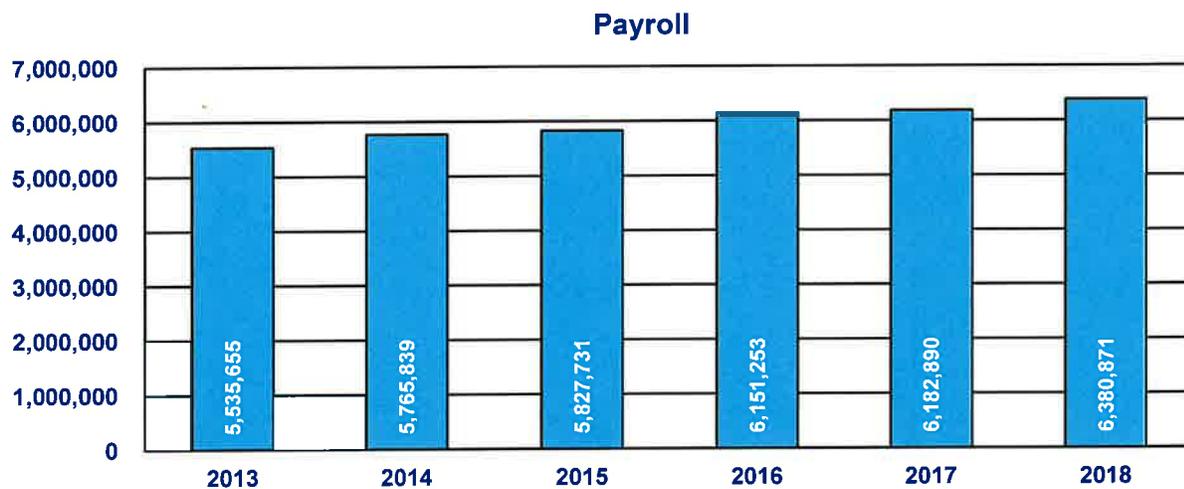
### A. Highlights

#### 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, 2017 to July 1, 2018, the overall membership increased from 134 to 135. During this period, there were 3 new active members, 1 active member terminated and is due a return of employee contributions, 2 active members were paid a refund, and 1 member died with a beneficiary. Notably, we did not see the expected shift of active members from pre-2007 hires with more generous benefits to post-2013 hires with less generous benefits. This caused the liability and the Actuarially Determined Contribution to increase more than expected.



## Section I - Executive Summary

### A. Highlights

#### Plan Changes

None.

#### Changes in Actuarial Methods or Assumptions

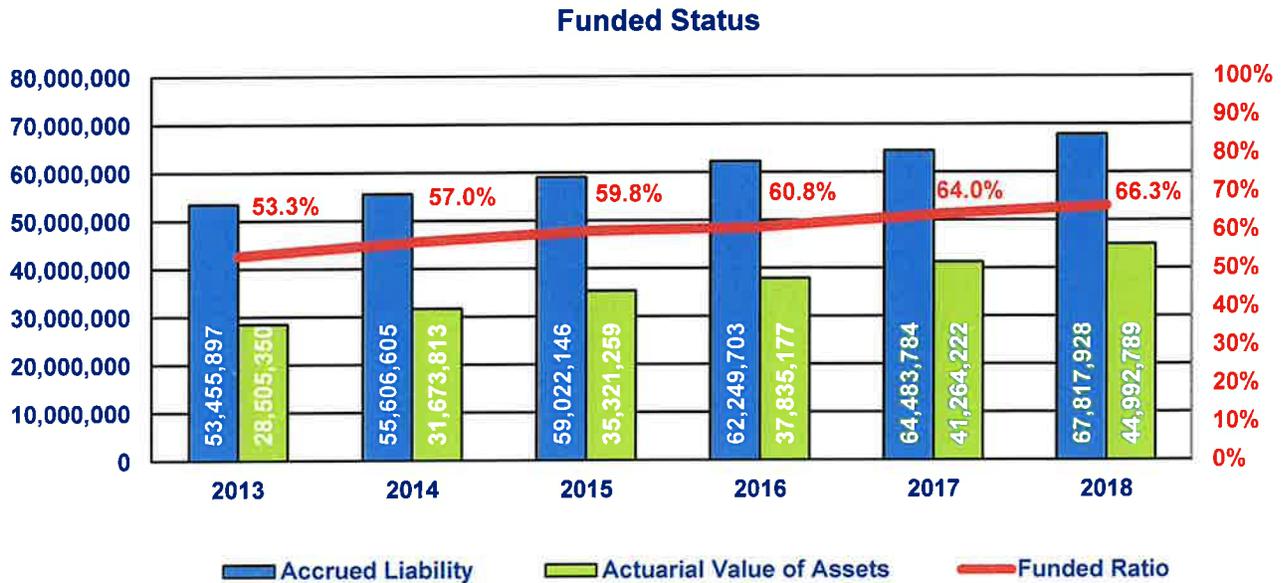
In order to better anticipate future market returns, we have lowered the interest rate assumption from 7.125% to 7.000%. This change increased the Unfunded Accrued Liability by \$964,000 and increased the Actuarially Determined Contribution by \$138,100. We will continue to reduce the interest rate assumption by increments over the next several years.

## Section I - Executive Summary

### A. Highlights

#### Funded Status

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



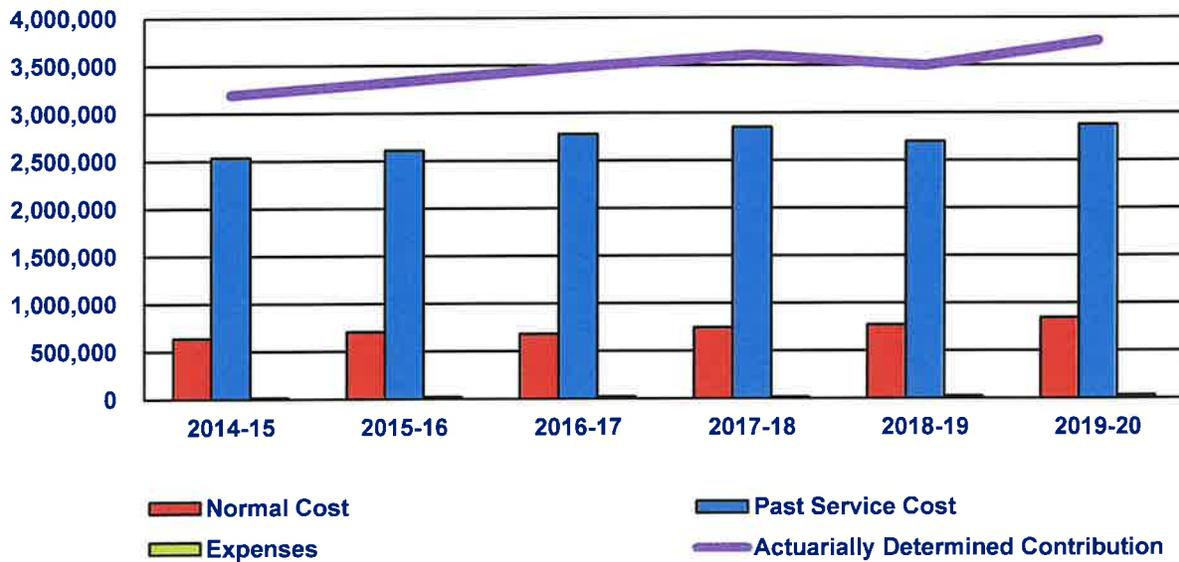
## Section I - Executive Summary

### A. Highlights

#### 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 **Expenses** expected to be paid from plan assets. 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.



## Section I - Executive Summary

### A. Highlights

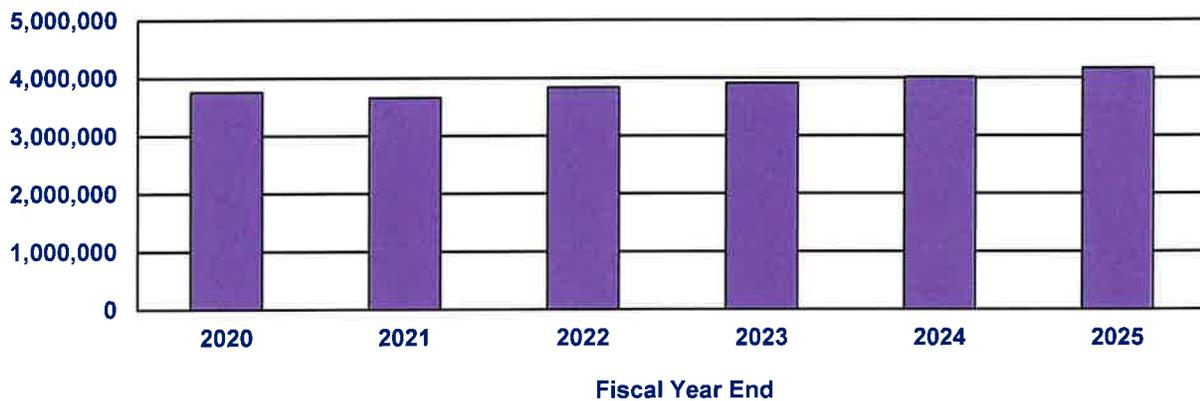
#### Long Range Forecast

The Town intends to reduce the interest rate assumption gradually over the next several years. This will depress the funded ratio and increase the Actuarially Determined Contribution while that process is underway.

**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.

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

<b>Membership</b>	<b>July 1, 2017</b>	<b>July 1, 2018</b>
Active Members	57	57
Terminated Vested Members	2	3
Members in Pay Status	75	75
Payroll	\$6,182,890	\$6,380,871
<b>Assets and Liabilities</b>	<b>July 1, 2017</b>	<b>July 1, 2018</b>
Market Value of Assets	\$41,206,263	\$45,218,993
Actuarial Value of Assets	41,264,222	44,992,789
Accrued Liability for Active Members	\$21,035,832	\$23,793,597
Accrued Liability for Terminated Vested Members	183,078	208,284
Accrued Liability for Members in Pay Status	43,264,874	43,816,047
Total Accrued Liability	64,483,784	67,817,928
Unfunded Accrued Liability	23,219,562	22,825,139
Funded Ratio	64.0%	66.3%
<b>Actuarially Determined Contribution for Fiscal Year</b>	<b>2018-19</b>	<b>2019-20</b>
Normal Cost	\$773,388	\$848,023
Past Service Cost	2,697,804	2,877,204
Expenses	24,900	33,200
Actuarially Determined Contribution	3,496,092	3,758,427

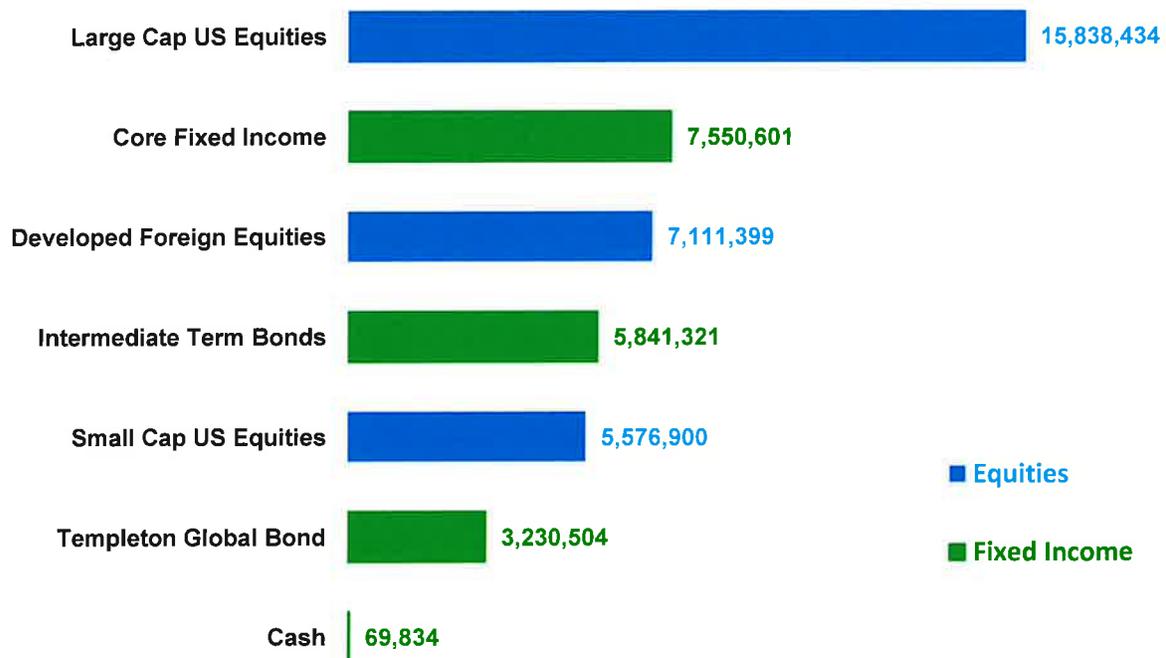
## Section II - Plan Assets

### A. Summary of Fund Transactions

<b>Market Value as of July 1, 2017</b>	<b>\$41,206,263</b>
Employer Contributions	3,613,092
Employee Contributions	568,243
Benefit Payments	(3,522,105)
Net Investment Income	3,385,746
Administrative Expenses	(32,246)
 <b>Market Value as of July 1, 2018</b>	 <b>45,218,993</b>
 <b>Approximate Rate of Return</b>	 <b>8.155%</b>

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 as of July 1, 2018



**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, 2018 is determined below.

1.	Expected Market Value of Assets:																					
	a. Market Value of Assets as of July 1, 2017	\$41,206,263																				
	b. Employer and Employee Contributions	4,181,335																				
	c. Benefit Payments and Administrative Expenses	(3,554,351)																				
	d. Expected Investment Return Based on 7.125% Interest	<u>2,958,117</u>																				
	e. Expected Market Value of Assets as of July 1, 2018	44,791,364																				
2.	Actual Market Value of Assets as of July 1, 2018	45,218,993																				
3.	Market Value (Gain)/Loss: (1e) - (2)	(427,629)																				
4.	Delayed Recognition of Market (Gains)/Losses:																					
	<table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Plan Year End</th> <th style="text-align: left;">(Gain)/Loss</th> <th style="text-align: left;">Percent Not Recognized</th> <th style="text-align: left;">Amount Not Recognized</th> </tr> </thead> <tbody> <tr> <td>06/30/2018</td> <td style="text-align: right;">(\$427,629)</td> <td style="text-align: right;">80%</td> <td style="text-align: right;">(\$342,103)</td> </tr> <tr> <td>06/30/2017</td> <td style="text-align: right;">(2,399,467)</td> <td style="text-align: right;">60%</td> <td style="text-align: right;">(1,439,680)</td> </tr> <tr> <td>06/30/2016</td> <td style="text-align: right;">3,261,544</td> <td style="text-align: right;">40%</td> <td style="text-align: right;">1,304,618</td> </tr> <tr> <td>06/30/2015</td> <td style="text-align: right;">1,254,807</td> <td style="text-align: right;">20%</td> <td style="text-align: right;"><u>250,961</u></td> </tr> </tbody> </table>	Plan Year End	(Gain)/Loss	Percent Not Recognized	Amount Not Recognized	06/30/2018	(\$427,629)	80%	(\$342,103)	06/30/2017	(2,399,467)	60%	(1,439,680)	06/30/2016	3,261,544	40%	1,304,618	06/30/2015	1,254,807	20%	<u>250,961</u>	(226,204)
Plan Year End	(Gain)/Loss	Percent Not Recognized	Amount Not Recognized																			
06/30/2018	(\$427,629)	80%	(\$342,103)																			
06/30/2017	(2,399,467)	60%	(1,439,680)																			
06/30/2016	3,261,544	40%	1,304,618																			
06/30/2015	1,254,807	20%	<u>250,961</u>																			
5.	Actuarial Value of Assets as of July 1, 2018: (2) + (4)	44,992,789																				
6.	Approximate Rate of Return on Actuarial Value of Assets	7.460%																				
7.	Actuarial Value (Gain)/Loss	(139,280)																				

## 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 10 years.

	<b>July 1, 2017</b>	<b>July 1, 2018</b>		
1. Accrued Liability				
Active Members	\$21,035,832	\$23,793,597		
Terminated Vested Members	183,078	208,284		
Retired Members	37,258,533	37,193,768		
Disabled Members	1,081,022	1,101,439		
Beneficiaries of Deceased Members	<u>4,925,319</u>	<u>5,520,840</u>		
Total	64,483,784	67,817,928		
2. Actuarial Value of Assets (see Section II B)	41,264,222	44,992,789		
3. Funded Ratio: (2) / (1)	64.0%	66.3%		
4. Unfunded Accrued Liability: (1) - (2)	23,219,562	22,825,139		
5. Amortization Bases Established in Prior Years				
	<b>(a) Outstanding</b>	<b>Years</b>	<b>(b) Annual</b>	
<b>Date</b>	<b>Original</b>	<b>Balance at</b>	<b>Remaining</b>	<b>Amortization</b>
<b>Established</b>	<b>Amount</b>	<b>July 1, 2018</b>	<b>July 1, 2018</b>	<b>Payment</b>
July 1, 2017	\$23,219,562	<u>\$21,983,933</u>	9	<u>\$2,779,948</u>
Total		21,983,933		2,779,948
6. New Amortization Base Established July 1, 2018: (4) - (5a Total)				841,206
7. Amortization Growth Rate				3.50%
8. Amortization Payment for July 1, 2018 Base: (6) amortized over 10 years				97,256
9. Total Past Service Cost: (5b Total) + (8)				2,877,204

**Section III - Development of Contribution**  
**B. Actuarially Determined Contribution**

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	<b>Fiscal Year 2018-19</b>	<b>Fiscal Year 2019-20</b>
1. Total Normal Cost	\$1,329,629	\$1,410,424
2. Expected Employee Contributions	556,241	562,401
3. Expected Expenses	24,900	33,200
4. Net Normal Cost: (1) - (2) + (3)	798,288	881,223
5. Past Service Cost (see Section III A)	2,697,804	2,877,204
6. Actuarially Determined Contribution: (4) + (5)	3,496,092	3,758,427

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**Milliman Actuarial Valuation**

**Section III - Development of Contribution  
C. Long Range Forecast**

This forecast is based on the results of the July 1, 2018 actuarial valuation and assumes that the Town will pay the Actuarially Determined Contribution each year, the assets will return the assumed interest rate 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 time will yield different values, reflecting the actual experience of the plan membership and assets.

Valuation Date	Interest Rate	Accrued Liability	Actuarial Value of Assets	Values as of the Valuation Date			Cash Flows Projected to the Following Fiscal Year				
				Accrued Liability	Unfunded Accrued Liability	Funded Ratio	Fiscal Year Ending	Town Contributions	Employee Contributions	Benefit Payments	Net Cash Flows
7/1/2018	7.000%	\$67,817,928	\$44,992,789	\$22,825,139	66.3%	2020	\$3,758,427	\$564,000	(\$3,867,000)	\$455,427	
7/1/2019	6.875%	68,159,000	48,225,000	19,934,000	70.8%	2021	3,661,000	558,000	(4,140,000)	79,000	
7/1/2020	6.750%	71,109,000	51,928,000	19,181,000	73.0%	2022	3,839,000	565,000	(4,330,000)	74,000	
7/1/2021	6.750%	73,204,000	56,089,000	17,115,000	76.6%	2023	3,910,000	565,000	(4,516,000)	(41,000)	
7/1/2022	6.750%	75,216,000	60,006,000	15,210,000	79.8%	2024	4,015,000	570,000	(4,687,000)	(102,000)	
7/1/2023	6.750%	77,141,000	63,975,000	13,166,000	82.9%	2025	4,167,000	574,000	(4,873,000)	(132,000)	
7/1/2024	6.750%	79,001,000	68,148,000	10,853,000	86.3%	2026	4,310,000	580,000	(5,032,000)	(142,000)	
7/1/2025	6.750%	80,781,000	72,570,000	8,211,000	89.8%	2027	4,461,000	582,000	(5,194,000)	(151,000)	
7/1/2026	6.750%	82,513,000	77,279,000	5,234,000	93.7%	2028	4,634,000	586,000	(5,389,000)	(169,000)	
7/1/2027	6.750%	84,166,000	82,294,000	1,872,000	97.8%	2029	1,024,000	601,000	(5,491,000)	(3,866,000)	
7/1/2028	6.750%	85,708,000	87,630,000	(1,922,000)	102.2%	2030	485,000	603,000	(5,630,000)	(4,542,000)	
7/1/2029	6.750%	87,265,000	89,503,000	(2,238,000)	102.6%	2031	670,000	612,000	(5,816,000)	(4,534,000)	
7/1/2030	6.750%	88,771,000	90,800,000	(2,029,000)	102.3%	2032	545,000	623,000	(5,935,000)	(4,767,000)	
7/1/2031	6.750%	90,191,000	92,194,000	(2,003,000)	102.2%	2033	566,000	627,000	(6,088,000)	(4,895,000)	
7/1/2032	6.750%	91,592,000	93,438,000	(1,846,000)	102.0%	2034	552,000	632,000	(6,280,000)	(5,096,000)	
7/1/2033	6.750%	92,922,000	94,632,000	(1,710,000)	101.8%	2035	492,000	646,000	(6,404,000)	(5,266,000)	
7/1/2034	6.750%	94,146,000	95,698,000	(1,552,000)	101.6%	2036	415,000	659,000	(6,488,000)	(5,414,000)	
7/1/2035	6.750%	95,341,000	96,659,000	(1,318,000)	101.4%	2037	346,000	677,000	(6,526,000)	(5,503,000)	
7/1/2036	6.750%	96,458,000	97,530,000	(1,072,000)	101.1%	2038	269,000	683,000	(6,628,000)	(5,676,000)	
7/1/2037	6.750%	97,734,000	98,367,000	(633,000)	100.6%	2039	208,000	690,000	(6,819,000)	(5,921,000)	

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.

**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:

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<b>Valuation Date</b>	July 1, 2018
<b>Actuarial Cost Method</b>	Entry Age Normal
<b>Amortization Method</b>	Level percent
<b>Amortization Period</b>	Layered 10 year bases from July 1, 2017
<b>Asset Valuation Method</b>	5 Year Smoothed Market Value
<b>Actuarial Assumptions</b>	
Investment Rate of Return	7.00%
Projected Salary Increases	3.50%
Amortization Growth Rate	3.50%
Inflation	2.75%
Cost-of-Living Adjustments	1.50%

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**Section IV - Accounting Information**  
**B. Historical Schedule of Funding Progress**

Actuarial Valuation Date	For Fiscal Year	(1)	(2)	(3)	(4)	(5)	(6)
		Actuarial Value of Assets	Accrued Liability	Unfunded Accrued Liability (UAAL)	Funded Ratio (1) / (2)	Payroll	UAAL as a Percentage of Payroll (3) / (5)
07/01/2009	2010-11	\$27,947,368	\$43,198,720	\$15,251,352	64.7%	\$5,237,052	291.2%
07/01/2010	2011-12	27,902,613	45,387,810	17,485,197	61.5%	5,247,720	333.2%
07/01/2011	2012-13	26,699,832	46,584,532	19,884,700	57.3%	5,828,742	341.1%
07/01/2012	2013-14	26,840,306	48,223,073	21,382,767	55.7%	5,561,136	384.5%
07/01/2013	2014-15	28,505,350	53,455,897	24,950,547	53.3%	5,535,655	450.7%
07/01/2014	2015-16	31,673,813	55,606,605	23,932,792	57.0%	5,765,839	415.1%
07/01/2015	2016-17	35,321,259	59,022,146	23,700,887	59.8%	5,827,731	406.7%
07/01/2016	2017-18	37,835,177	62,249,703	24,414,526	60.8%	6,151,253	396.9%
07/01/2017	2018-19	41,264,222	64,483,784	23,219,562	64.0%	6,182,890	375.5%
07/01/2018	2019-20	44,992,789	67,817,928	22,825,139	66.3%	6,380,871	357.7%

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

Fiscal Year Ending June 30	(1) Actuarially Determined Contribution	(2) Contribution in Relation to the Actuarially Determined Contribution	(3) Contribution Deficiency/ (Excess) (1) - (2)	(4) Payroll	(5) Contribution as a Percentage of Payroll (2) / (4)
2011	\$1,799,656	\$1,799,656	\$0	\$5,237,052	34.4%
2012	2,064,999	2,064,999	0	5,247,720	39.4%
2013	2,426,210	2,804,586	(378,376)	5,828,747	48.1%
2014	2,661,462	2,661,462	0	5,561,136	47.9%
2015	3,195,093	3,195,093	0	5,535,655	57.7%
2016	3,338,285	3,338,285	0	5,765,839	57.9%
2017	3,486,256	3,515,356	(29,100)	5,827,731	60.3%
2018	3,613,092	3,613,092	0	6,151,253	58.7%
2019	3,496,092	TBD	TBD	6,182,890	TBD
2020	3,758,427	TBD	TBD	6,380,871	TBD

**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.

	<b>As of July 1, 2017</b>	<b>As of July 1, 2018</b>
1. Value of Vested Benefits		
Active Members	\$15,881,931	\$18,877,835
Terminated Vested Members	183,078	208,284
Retired Members	37,258,533	37,193,768
Disabled Members	1,081,022	1,101,439
Beneficiaries of Deceased Members	<u>4,925,319</u>	<u>5,520,840</u>
Total Value of Vested Benefits	59,329,883	62,902,166
2. Value of Non-Vested Benefits	1,037,066	676,440
3. Total Value of Accrued Benefits: (1) + (2)	60,366,949	63,578,606
4. Market Value of Assets	41,206,263	45,218,993
5. Vested Funded Ratio: (4) / (1)	69.5%	71.9%
6. Accrued Funded Ratio: (4) / (3)	68.3%	71.1%

**Section IV - Accounting Information**  
**E. Statement of Changes in Accrued Plan Benefits**

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**Increase/(Decrease) during the 2017-2018 plan year attributable to:**

Increase for interest due to the decrease in the discount period	\$4,177,829
Benefits Accumulated/(Forfeited)	1,641,050
Benefit Payments	(3,522,105)
Plan Amendments	0
Changes in Actuarial Assumptions	914,883
Net Increase/(Decrease)	3,211,657

**Value of Accrued Plan Benefits:**

July 1, 2018	\$63,578,606
July 1, 2017	60,366,949
Net Increase/(Decrease)	3,211,657

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**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.

	Active	Term. Vested	Retirees	Disabled	Bene- ficiaries	Total
<b>Count as of July 1, 2017</b>	57	2	59	3	13	134
Terminated not vested	-	-	-	-	-	0
Terminated, benefits due	(1)	1	-	-	-	0
Retired	-	-	-	-	-	0
Died, with beneficiary	-	-	(1)	-	1	0
Died, no beneficiary	-	-	-	-	-	0
Paid refund	(2)	-	-	-	-	(2)
New member	3	-	-	-	-	3
New beneficiary	-	-	-	-	-	0
QDRO alternate payee	-	-	-	-	-	0
Correction	-	-	-	-	-	0
<b>Count as of July 1, 2018</b>	57	3	58	3	14	135

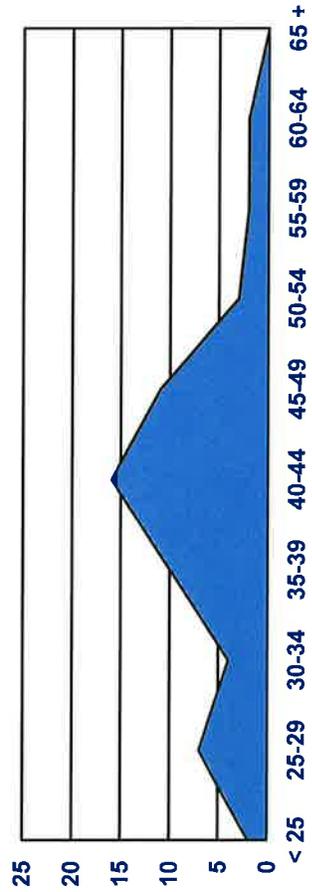
**Section V - Membership Data**  
**B. Statistics of Membership**

	As of July 1, 2017	As of July 1, 2018
<b>Active Members</b>		
Number	57	57
Average Age	40.0	40.7
Average Service	11.0	11.9
Total Payroll	\$6,182,890	\$6,380,871
Average Payroll	108,472	111,945
<b>Terminated Vested Members</b>		
Number	2	3
Total Annual Benefit	\$22,674	\$22,674
Average Annual Benefit	11,337	7,558
Average Age	34.5	23.7
<b>Retired Members</b>		
Number	59	58
Total Annual Benefit	\$2,928,176	\$2,936,928
Average Annual Benefit	49,630	50,637
Average Age	64.1	65.1
<b>Disabled Members</b>		
Number	3	3
Total Annual Benefit	\$91,961	\$93,929
Average Annual Benefit	30,654	31,309
Average Age	55.0	56.0
<b>Beneficiaries of Deceased Members</b>		
Number	13	14
Total Annual Benefit	\$440,264	\$503,806
Average Annual Benefit	33,866	35,986
Average Age	69.0	70.1

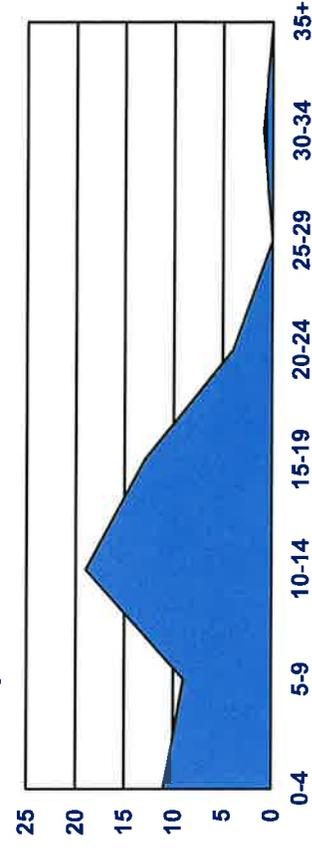
**Section V - Membership Data**  
**C. Distribution of Active Members as of July 1, 2018 - Count**

Age	Years of Service										Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	35+	Total	
< 25	2	0	0	0	0	0	0	0	0	0	2
25-29	5	2	0	0	0	0	0	0	0	0	7
30-34	1	3	0	0	0	0	0	0	0	0	4
35-39	1	2	7	0	0	0	0	0	0	0	10
40-44	1	1	5	9	0	0	0	0	0	0	16
45-49	1	1	4	3	2	0	0	0	0	0	11
50-54	0	0	1	1	1	0	0	0	0	0	3
55-59	0	0	1	0	1	0	0	0	0	0	2
60-64	0	0	1	0	0	0	1	0	0	0	2
65 +	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>11</b>	<b>9</b>	<b>19</b>	<b>13</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>57</b>

Distribution By Age



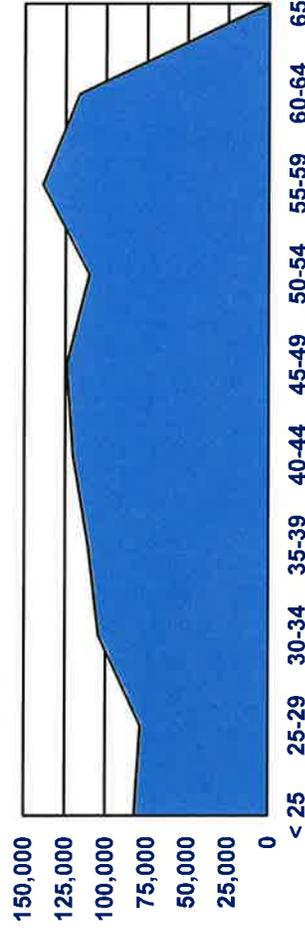
Distribution by Years of Service



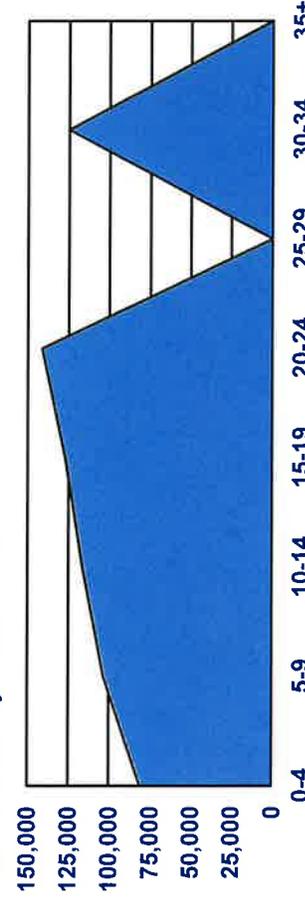
**Section V - Membership Data**  
**D. Distribution of Active Members as of July 1, 2018 - Average Pay**

Age	Years of Service										Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	35+	Total	
< 25	82,272	0	0	0	0	0	0	0	0	0	82,272
25-29	74,701	89,166	0	0	0	0	0	0	0	0	78,834
30-34	85,376	110,938	0	0	0	0	0	0	0	0	104,547
35-39	75,979	98,182	119,647	0	0	0	0	0	0	0	110,987
40-44	99,022	121,356	115,977	124,888	0	0	0	0	0	0	120,266
45-49	94,061	103,230	120,644	140,020	134,873	0	0	0	0	0	124,516
50-54	0	0	99,608	110,310	121,280	0	0	0	0	0	110,399
55-59	0	0	103,317	0	174,729	0	0	0	0	0	139,023
60-64	0	0	108,136	0	0	0	125,124	0	0	0	116,630
65 +	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>81,135</b>	<b>103,566</b>	<b>116,371</b>	<b>127,259</b>	<b>141,439</b>	<b>0</b>	<b>125,124</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>111,945</b>

**Distribution By Age**



**Distribution by Years of Service**



**Section V - Membership Data**  
**E. Distribution of Inactive Members as of July 1, 2018**

	Age	Number	Annual Benefits
<b>Terminated Vested Members /</b>	< 30	0	\$0
<b>Members Due Refunds</b>	30 - 39	2	22,674
	40 - 49	0	0
	50 - 59	0	0
	60 - 64	0	0
	65 +	0	0
	Total	2	22,674
<b>Retired Members</b>	< 50	3	\$167,027
	50 - 59	20	1,152,268
	60 - 69	13	576,770
	70 - 79	14	749,431
	80 - 89	8	291,432
	90 +	0	0
	Total	58	2,936,928
<b>Disabled Members</b>	< 50	1	\$44,706
	50 - 59	0	0
	60 - 69	2	49,223
	70 - 79	0	0
	80 - 89	0	0
	90 +	0	0
	Total	3	93,929
<b>Beneficiaries of Deceased Members</b>	< 50	1	\$6,827
	50 - 59	1	62,122
	60 - 69	3	150,080
	70 - 79	7	264,212
	80 - 89	2	20,565
	90 +	0	0
	Total	14	503,806

## 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 with ten-year layered amortization beginning July 1, 2017.

The **Actuarial Value of Assets** is determined by recognizing asset gains and losses over **five** years.

## Appendix B - Actuarial Assumptions

Each of the assumptions used in this valuation was set based on industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, and our professional judgment regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

<b>Interest</b>	Current: 7.00%
	Prior: 7.125%
<b>Salary Scale</b>	3.50%
<b>Amortization Growth Rate</b>	3.50%
<b>Expenses</b>	Administrative expenses paid in the prior year, increased by 3% and rounded to the nearest \$100.
<b>Healthy Mortality</b>	RP-2000 Combined Healthy Mortality Table, Male and Female, with generational projection of future mortality improvements per Scale AA. This assumption includes a margin for improvements in longevity beyond the valuation date.
<b>Turnover</b>	None.
<b>Retirement</b>	50% in the first year eligible for Normal Retirement. 15% in each following year. 100% at age 65. For employees hired after October 1, 2013, no retirements are assumed prior to the completion of 25 years of service.
<b>Disability</b>	11th Railroad Retirement Board Disability Rates.
<b>Disabled Mortality</b>	RP-2000 Disabled Mortality Table, Male and Female. This assumption does not include a margin for improvements in longevity beyond the valuation date.
<b>Marital Status</b>	80% of members are assumed to be married with wives 3 years younger than husbands.
<b>Cost of Living Adjustment</b>	1.50%
<b>Worker's Compensation</b>	10% of Final Average Earnings.

## 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.

<b>Eligibility</b>	Employed for twenty or more hours a week for more than 5 months per calendar year.
<b>Employee Contributions</b>	8% of after tax earnings, 8.5% of after tax earnings effective July 1, 2015 and 9% of after tax earnings effective July 1, 2016. Interest is credited at 4% per annum.  Refund of Employee Contributions with interest to date of termination of employment or death, unless the employee is eligible for a deferred retirement income.
<b>Continuous Service</b>	The period of continuous employment with the Police Department beginning with the first of the month following date of employment measured in years and full months.
<b>Final Average Earnings</b>	Highest average earnings received in any three full calendar years.
<b>Normal Retirement Date</b>	Hired prior to January 1, 2007: the earlier of age 50 or the completion of 20 years of service.  Hired after January 1, 2007 but before October 1, 2013: the later of age 45 and the completion of 20 years of service; in order to be eligible for cost of living adjustments and retiree insurance benefits, the later of age 50 and the completion of 25 years of service.  Hired after October 1, 2013: the later of age 45 and the completion of 20 years of service; in order to be eligible for cost of living adjustments and retiree insurance benefits, the later of age 50 and the completion of 25 years of service.
<b>Normal Retirement Benefit</b>	2.5% of Final Average Earnings multiplied by Continuous Service. For employees hired after January 1, 2007 the benefit is capped at the lesser of 70% of base compensation in the year prior to retirement and 62.5% of Final Average Earnings.

## Appendix C - Summary of Plan Provisions

<b>Early Retirement Date</b>	Age 45 and 10 years of Continuous Service.
<b>Early Retirement Benefit</b>	Benefit is based on Continuous Service and Final Average Earnings to actual retirement date actuarially reduced for early commencement.
<b>Deferred Retirement Date</b>	Members may continue to work beyond Normal Retirement.
<b>Deferred Retirement Benefit</b>	Benefit based on Continuous Service and Final Average Earnings to actual date of retirement.
<b>Death Benefit Eligibility</b>	Married Member (for at least one year) or with minor children. Age 25 with 1 year of Aggregate Service.
<b>Death Benefit</b>	35% of benefit accrued to date of death.
<b>Disability Retirement</b>	Members not covered under the Long Term Disability Contract.
<b>Disability Retirement Benefit</b>	60% of earnings at the time of disability, less Worker's Compensation.
<b>Termination Benefit Eligibility</b>	Ten years of Continuous Service.
<b>Termination Benefit</b>	Benefit accrued to date of termination with payment commencing on Normal Retirement Date.
<b>Cost of Living Adjustment</b>	One half of active salary increases.