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February 26, 2018

***PERSONAL & CONFIDENTIAL***

Old Saybrook Pension & Benefits Board  
P.O. Box 408  
Old Saybrook, CT 06475-1741

Re: Town of Old Saybrook Retirement Plan

Dear Members of the Board:

We have performed an actuarial valuation of the Town of Old Saybrook Retirement Plan as of July 1, 2017 to determine the Actuarially Determined Contribution for Fiscal Year 2018-19. The results of the valuation are contained in the following report. We have enclosed 10 copies of the report; please let me know if you need additional copies.

Respectfully submitted,

A handwritten signature in blue ink that reads 'Becky'.

Rebecca A. Sielman, FSA  
Consulting Actuary

RAS:dlc 10

cc: Suzanne Taylor  
Lee Ann Palladino



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## **TOWN OF OLD SAYBROOK RETIREMENT PLAN**

**Actuarial Valuation as of July 1, 2017  
For Fiscal Year 2018-19**

**Prepared by**

**Rebecca A. Sielman, FSA**  
Consulting Actuary

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## Certification

We have performed an actuarial valuation of the Plan as of July 1, 2017 for fiscal year 2018-19. 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

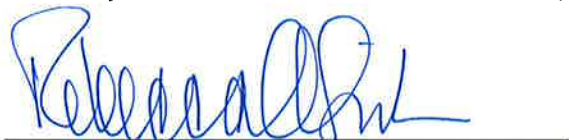
The calculations reported herein have been made on a basis consistent with our understanding of ERISA and the related sections of the tax code. Additional determinations may be needed for purposes other than meeting funding requirements, such as judging benefit security at plan termination or meeting 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.

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.



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Rebecca A. Sielman, FSA  
Consulting Actuary

## Section I - Executive Summary

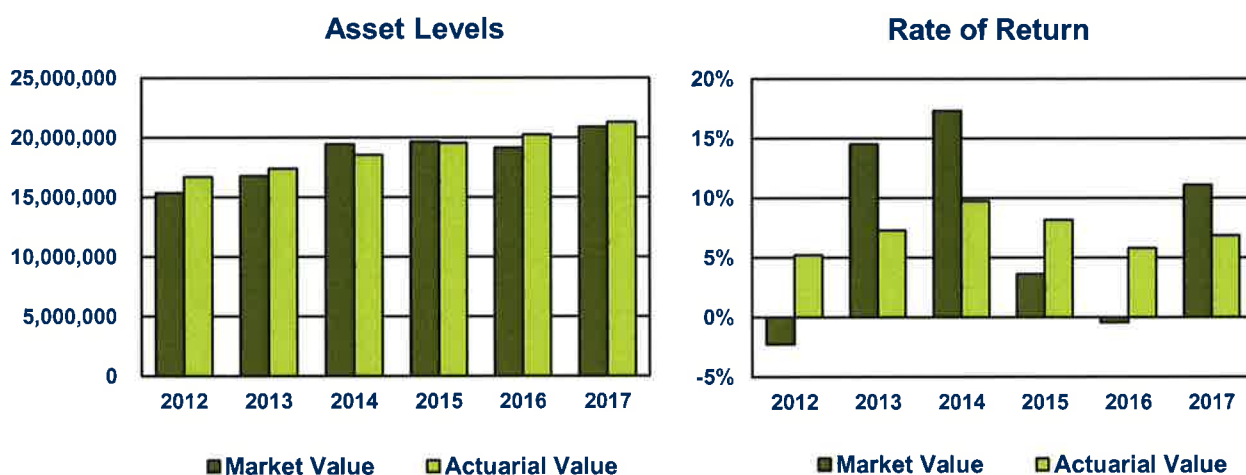
### A. Highlights

#### 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 four years.

	Market	Actuarial
Value as of July 1, 2016	\$19,138,000	\$20,258,042
Contributions	866,151	866,151
Investment Income	2,106,063	1,376,635
Benefit Payments	(1,205,958)	(1,205,958)
Value as of July 1, 2017	20,904,256	21,294,870

For fiscal year 2016-17, the plan's assets earned 11.10% on a Market Value basis and 6.85% on an Actuarial Value basis. The actuarial assumption for this period was 7.50%; the result is an asset gain of \$683,000 on a Market Value basis and a loss of \$130,200 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 \$390,600. This figure represents investment losses that will be gradually recognized over the next four years. This process will exert upward pressure on the Town's contribution, unless there are offsetting market gains.

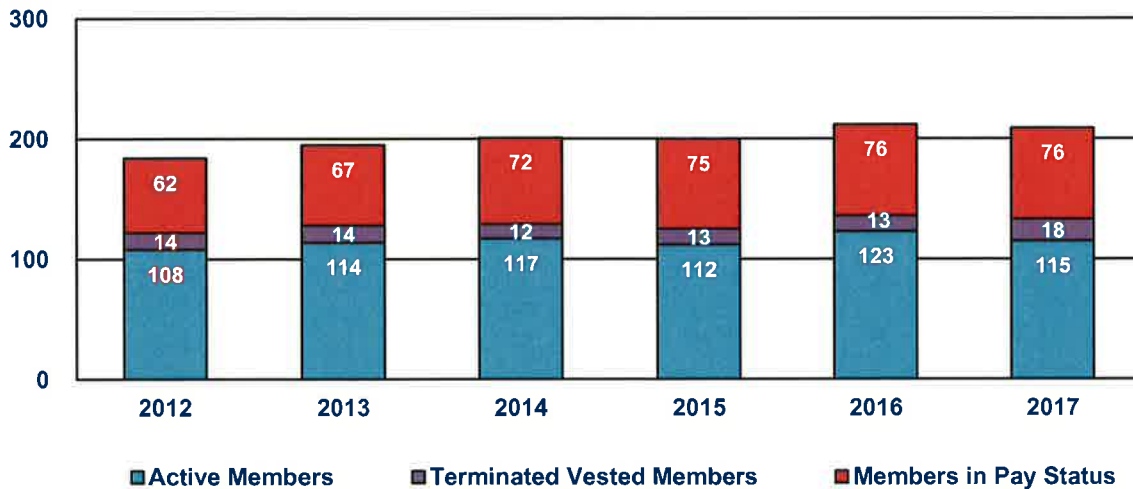
## Section I - Executive Summary

### A. Highlights

#### Membership

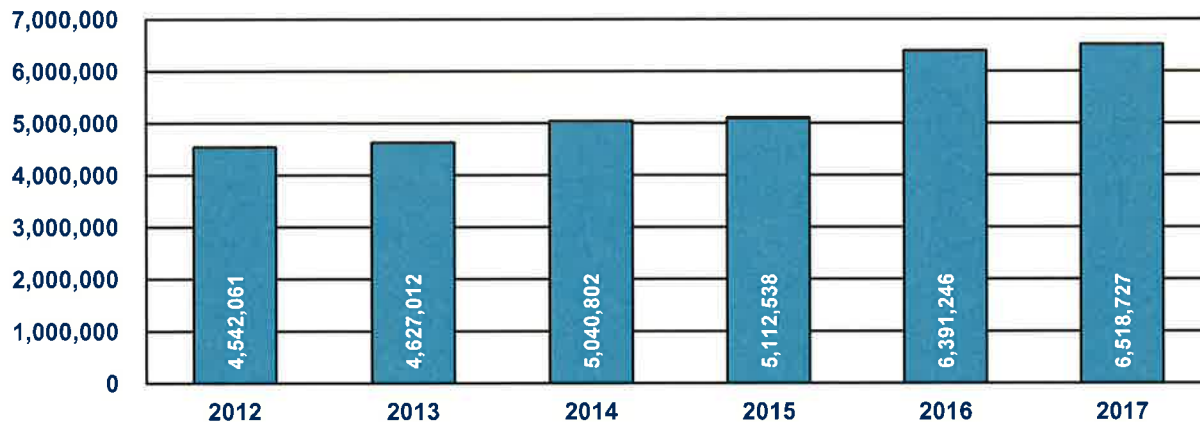
There are three basic categories of plan members included in the actuarial valuation: (1) active employees who have met the eligibility requirements for membership, (2) former employees who have a vested right to benefits but have not yet started collecting, and (3) members who are receiving monthly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

**Number of Members**



From July 1, 2016 to July 1, 2017, the overall membership decreased from 212 to 209. During this period, there were 6 new members, 3 active members who terminated with vested benefits, 3 active members who terminated but were not vested, and 3 active members who terminated and received a refund of their contributions. A total of 6 members retired during the year, and 8 members in pay status died.

**Covered Payroll**



## **Section I - Executive Summary**

### **A. Highlights**

#### **Plan Changes**

None.

#### **Changes in Actuarial Methods and Assumptions**

Certain administrative expenses are now being paid out of plan assets rather than out of Town funds. To reflect this change, we have added an expense component to the Normal Cost to anticipate the administrative expenses that will be paid in the coming year. Each year's expense "load" is calculated by starting with the administrative expenses that were actually paid during the prior year, increasing that amount by 3% to reflect inflation, and then rounding to the nearest \$100.

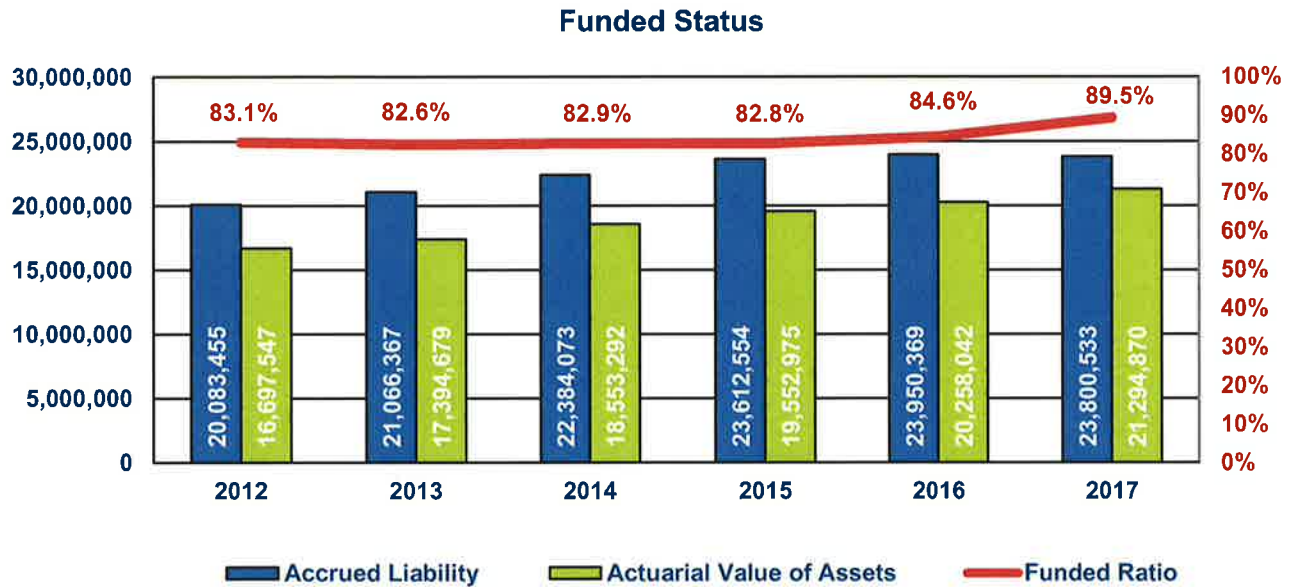


## Section I - Executive Summary

### A. Highlights

#### Funded Status

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



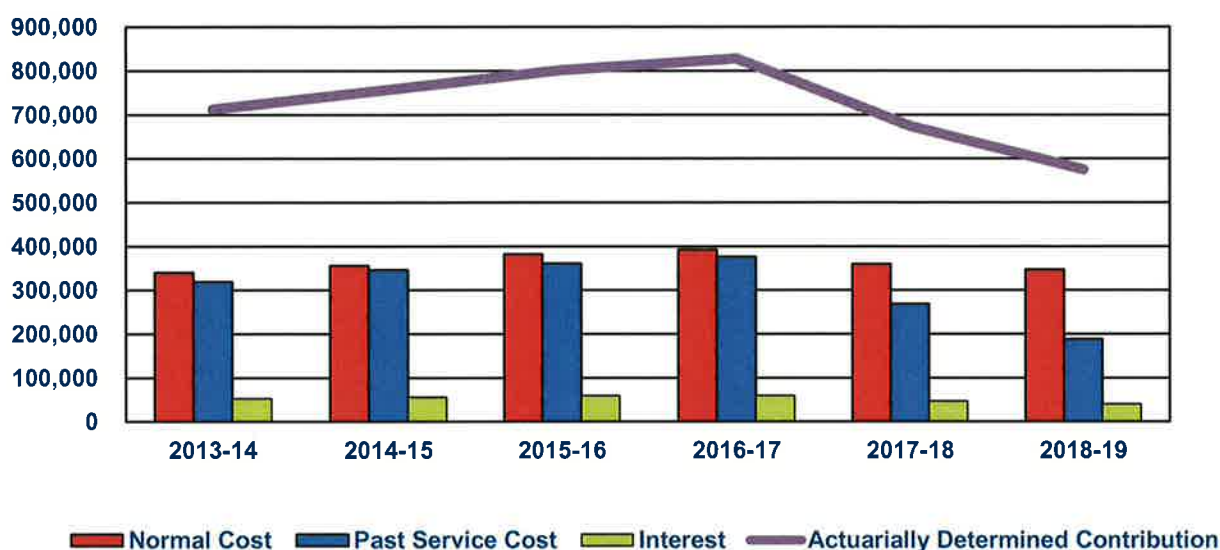
## Section I - Executive Summary

### 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 **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 several fiscal years are shown below.

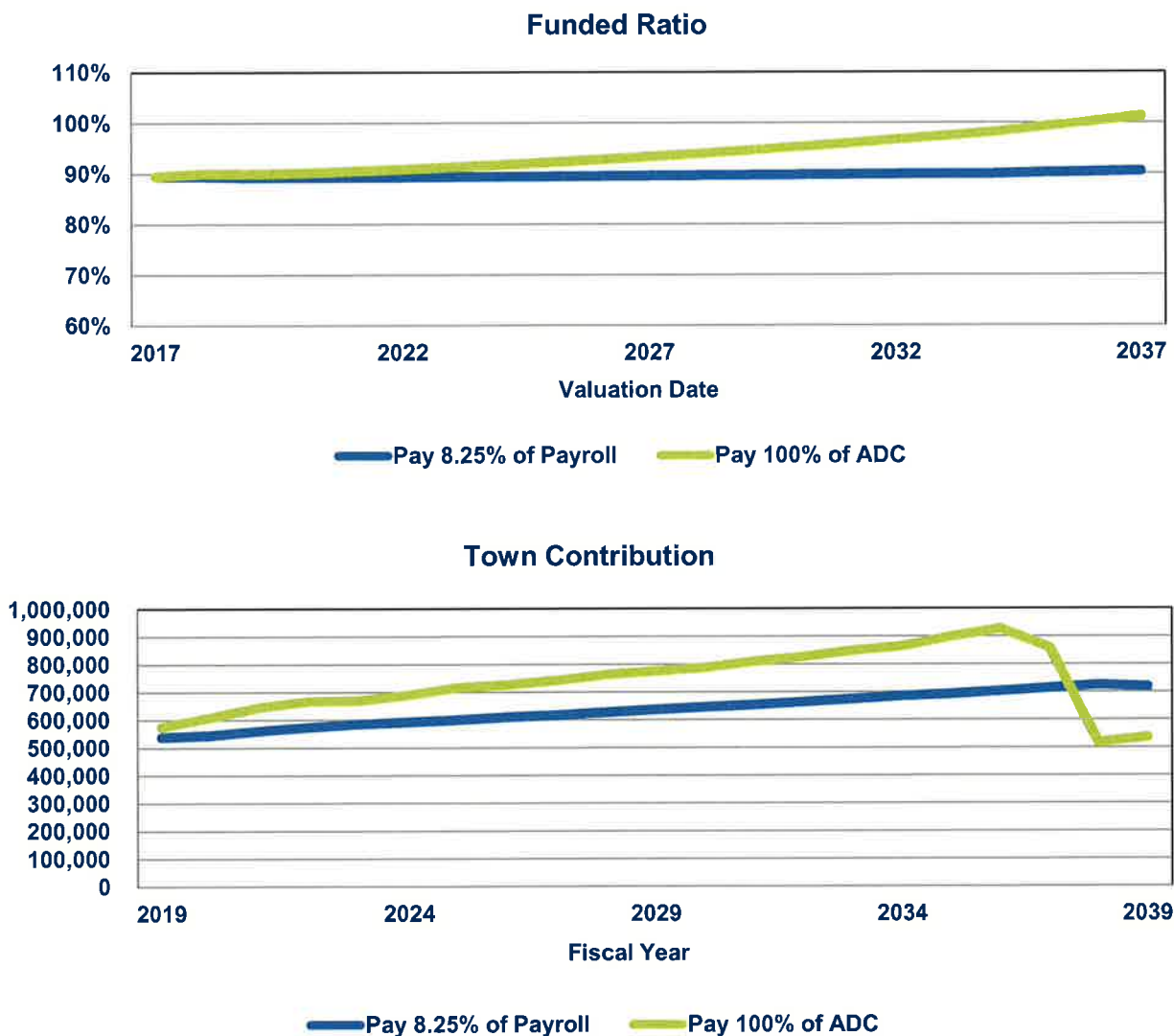


## Section I - Executive Summary

### A. Highlights

#### Long Range Forecast

Based on the results of the July 1, 2017 valuation, we prepared long range forecasts under two scenarios: in blue below, we assume the Town continues its current practice and contributes 8.25% of payroll each year; in green below, we assume the Town pays 100% of the Actuarially Determined Contribution (ADC).



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, 2016</b>	<b>July 1, 2017</b>
Active Members	123	115
Terminated Vested Members	13	18
Members in Pay Status	76	76
Payroll	\$7,066,572	\$6,518,727
<b>Assets and Liabilities</b>	<b>July 1, 2016</b>	<b>July 1, 2017</b>
Market Value of Assets	\$19,138,000	\$20,904,256
Actuarial Value of Assets	20,258,042	21,294,870
Accrued Liability for Active Members	\$11,850,084	\$11,478,121
Accrued Liability for Terminated Vested Members	316,781	618,691
Accrued Liability for Members in Pay Status	11,783,504	11,703,721
Total Accrued Liability	23,950,369	23,800,533
Unfunded Accrued Liability	3,692,327	2,505,663
Funded Ratio	84.6%	89.5%
<b>Actuarially Determined Contribution for Fiscal Year</b>	<b>2017-18</b>	<b>2018-19</b>
Normal Cost	\$359,320	\$346,973
Past Service Cost	268,890	188,566
Interest	47,116	40,165
Actuarially Determined Contribution	675,326	575,704

## Section II - Plan Assets

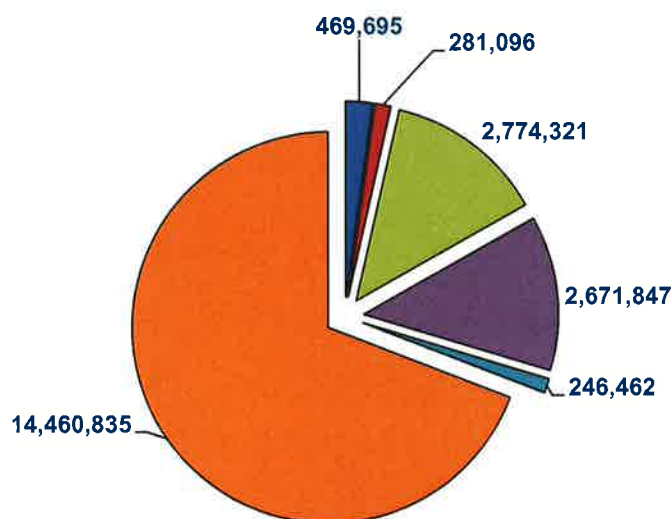
### A. Summary of Fund Transactions

<b>Market Value as of July 1, 2016</b>	<b>\$19,138,000</b>
Employer Contributions	500,830
Employee Contributions	365,321
Benefit Payments	(1,205,958)
Investment Income	2,112,454
Administrative Expenses	(6,391)
<b>Market Value as of July 1, 2017</b>	<b>20,904,256</b>
<b>Approximate Rate of Return</b>	<b>11.10%</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

- Interest Bearing Cash
- Non-Interest Bearing Cash
- US Government Securities
- Corporate Fixed Income
- New Unsettled Purchases/Sales
- Common Stocks



## 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 four year period. The Actuarial Value of Assets as of July 1, 2017 is determined below.

---

1. Expected Actuarial Value of Assets:	
a. Actuarial Value of Assets as of July 1, 2016	\$20,258,042
b. Employer and Employee Contributions	866,151
c. Benefit Payments	(1,205,958)
d. Expected Investment Return Based on 7.50% Interest	<u>1,506,840</u>
e. Expected Actuarial Value of Assets as of July 1, 2017	21,425,075
2. Actual Market Value of Assets as of July 1, 2017	20,904,256
3. Actuarial Value of Assets as of July 1, 2017: 75% of (1e) + 25% of (2)	21,294,870
4. Approximate Rate of Return on Actuarial Value of Assets	6.85%
5. Actuarial Value (Gain)/Loss	130,205

---

## Section III - Development of Contribution

### A. Past Service Cost

Starting with the July 1, 2016 valuation, for determining the Past Service Cost, the Unfunded Accrued Liability is amortized as a level percent over a closed period of 20 years.

	July 1, 2016	July 1, 2017
1. Accrued Liability		
Active Members	\$11,850,084	\$11,478,121
Terminated Vested Members	316,781	618,691
Retired Members	11,262,561	11,226,490
Disabled Members	0	0
Beneficiaries of Deceased Members	<u>520,943</u>	<u>477,231</u>
Total	23,950,369	23,800,533
2. Actuarial Value of Assets (see Section II B)	20,258,042	21,294,870
3. Unfunded Accrued Liability: (1) - (2)	3,692,327	2,505,663
4. Funded Ratio: (2) / (1)	84.6%	89.5%
5. Amortization Period	20	19
6. Amortization Growth Rate	3.00%	3.00%
7. Past Service Cost: (3) amortized over (5)	268,890	188,566

## Section III - Development of Contribution

### B. Actuarially Determined Contribution

	Fiscal Year 2017-18	Fiscal Year 2018-19
1. Total Normal Cost	\$676,360	\$639,146
2. Expected Employee Contributions	317,040	298,773
3. Expected Administrative Expenses	N/A	6,600
4. Net Normal Cost: (1) - (2) + (3)	359,320	346,973
5. Past Service Cost (see Section III A)	268,890	188,566
6. Interest on (4) + (5) to start of next fiscal year	47,116	40,165
7. Actuarially Determined Contribution: (4) + (5) + (6)	675,326	575,704
8. Payroll	6,391,246	6,518,727
9. Actuarially Determined Contribution as a Percent of Payroll: (7) / (8)	10.57%	8.83%



## Milliman Actuarial Valuation

### Section III - Development of Contribution C. Long Range Forecast - Town Contributes 8.25% of Payroll

This forecast is based on the results of the July 1, 2017 actuarial valuation and assumes that the Town will contribute 8.25% of payroll each year, the assets will return 7.50% on a market value basis each year, and there are no 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.

Values as of the Valuation Date					Cash Flows Projected to the Following Fiscal Year				
Valuation Date	Accrued Liability	Actuarial Value of Assets	Unfunded		Fiscal Year Ending	Town Contributions	Employee Contributions	Benefit Payments	Net Cash Flows
			Accrued Liability	Funded Ratio					
7/1/2017	\$23,800,533	\$21,294,870	\$2,505,663	89.5%	2019	\$545,298	\$322,656	(\$1,643,174)	(\$775,220)
7/1/2018	24,622,000	22,025,000	2,597,000	89.5%	2020	561,000	337,000	(1,689,000)	(791,000)
7/1/2019	25,533,000	22,785,000	2,748,000	89.2%	2021	574,000	346,000	(1,747,000)	(827,000)
7/1/2020	26,453,000	23,601,000	2,852,000	89.2%	2022	586,000	344,000	(1,866,000)	(936,000)
7/1/2021	27,393,000	24,452,000	2,941,000	89.3%	2023	592,000	350,000	(1,963,000)	(1,021,000)
7/1/2022	28,295,000	25,264,000	3,031,000	89.3%	2024	601,000	363,000	(1,992,000)	(1,028,000)
7/1/2023	29,154,000	26,057,000	3,097,000	89.4%	2025	610,000	363,000	(2,085,000)	(1,112,000)
7/1/2024	30,103,000	26,908,000	3,195,000	89.4%	2026	616,000	372,000	(2,128,000)	(1,140,000)
7/1/2025	31,021,000	27,740,000	3,281,000	89.4%	2027	627,000	380,000	(2,158,000)	(1,151,000)
7/1/2026	31,982,000	28,611,000	3,371,000	89.5%	2028	637,000	385,000	(2,204,000)	(1,182,000)
7/1/2027	32,996,000	29,537,000	3,459,000	89.5%	2029	646,000	386,000	(2,304,000)	(1,272,000)
7/1/2028	34,049,000	30,503,000	3,546,000	89.6%	2030	654,000	391,000	(2,333,000)	(1,288,000)
7/1/2029	35,071,000	31,452,000	3,619,000	89.7%	2031	665,000	397,000	(2,397,000)	(1,335,000)
7/1/2030	36,164,000	32,455,000	3,709,000	89.7%	2032	675,000	398,000	(2,444,000)	(1,371,000)
7/1/2031	37,283,000	33,486,000	3,797,000	89.8%	2033	685,000	402,000	(2,522,000)	(1,435,000)
7/1/2032	38,449,000	34,558,000	3,891,000	89.9%	2034	693,000	412,000	(2,572,000)	(1,467,000)
7/1/2033	39,666,000	35,644,000	4,022,000	89.9%	2035	703,000	417,000	(2,616,000)	(1,496,000)
7/1/2034	40,907,000	36,780,000	4,127,000	89.9%	2036	714,000	424,000	(2,613,000)	(1,475,000)
7/1/2035	42,121,000	37,971,000	4,150,000	90.1%	2037	725,000	410,000	(2,831,000)	(1,696,000)
7/1/2036	43,509,000	39,273,000	4,236,000	90.3%	2038	718,000	414,000	(2,925,000)	(1,793,000)

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.

## Section III - Development of Contribution

### C. Long Range Forecast - Town Contributors 100% of Actuarially Determined Contribution

This forecast is based on the results of the July 1, 2017 actuarial valuation and assumes that the Town will contribute 100% of the Actuarially Determined Contribution each year, the assets will return 7.50% on a market value basis each year, and there are no 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	Values as of the Valuation Date				Cash Flows Projected to the Following Fiscal Year				
	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio	Fiscal Year Ending	Town Contributions	Employee Contributions	Benefit Payments	Net Cash Flows
7/1/2017	\$23,800,533	\$21,294,870	\$2,505,663	89.5%	2019	\$575,704	\$322,656	(\$1,643,174)	(\$744,814)
7/1/2018	24,622,000	22,168,000	2,454,000	90.0%	2020	610,000	337,000	(1,689,000)	(742,000)
7/1/2019	25,533,000	22,970,000	2,563,000	90.0%	2021	647,000	346,000	(1,747,000)	(754,000)
7/1/2020	26,453,000	23,850,000	2,603,000	90.2%	2022	668,000	344,000	(1,866,000)	(854,000)
7/1/2021	27,393,000	24,796,000	2,597,000	90.5%	2023	670,000	350,000	(1,963,000)	(943,000)
7/1/2022	28,295,000	25,719,000	2,576,000	90.9%	2024	690,000	363,000	(1,992,000)	(939,000)
7/1/2023	29,154,000	26,626,000	2,528,000	91.3%	2025	717,000	363,000	(2,085,000)	(1,005,000)
7/1/2024	30,103,000	27,614,000	2,489,000	91.7%	2026	726,000	372,000	(2,128,000)	(1,030,000)
7/1/2025	31,021,000	28,610,000	2,411,000	92.2%	2027	744,000	380,000	(2,158,000)	(1,034,000)
7/1/2026	31,982,000	29,659,000	2,323,000	92.7%	2028	763,000	385,000	(2,204,000)	(1,056,000)
7/1/2027	32,996,000	30,785,000	2,211,000	93.3%	2029	777,000	386,000	(2,304,000)	(1,141,000)
7/1/2028	34,049,000	31,976,000	2,073,000	93.9%	2030	788,000	391,000	(2,333,000)	(1,154,000)
7/1/2029	35,071,000	33,170,000	1,901,000	94.6%	2031	810,000	397,000	(2,397,000)	(1,190,000)
7/1/2030	36,164,000	34,443,000	1,721,000	95.2%	2032	827,000	398,000	(2,444,000)	(1,219,000)
7/1/2031	37,283,000	35,774,000	1,509,000	96.0%	2033	849,000	402,000	(2,522,000)	(1,271,000)
7/1/2032	38,449,000	37,176,000	1,273,000	96.7%	2034	865,000	412,000	(2,572,000)	(1,295,000)
7/1/2033	39,666,000	38,629,000	1,037,000	97.4%	2035	899,000	417,000	(2,616,000)	(1,300,000)
7/1/2034	40,907,000	40,167,000	740,000	98.2%	2036	928,000	424,000	(2,613,000)	(1,261,000)
7/1/2035	42,121,000	41,816,000	305,000	99.3%	2037	859,000	410,000	(2,831,000)	(1,562,000)
7/1/2036	43,509,000	43,628,000	(119,000)	100.3%	2038	519,000	414,000	(2,925,000)	(1,992,000)

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.

## 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:

---

<b>Valuation Date</b>	July 1, 2017
<b>Actuarial Cost Method</b>	Entry Age Normal
<b>Amortization Method</b>	Level percent
<b>Amortization Period</b>	Closed 20 years from July 1, 2016
<b>Asset Valuation Method</b>	75% of Expected Actuarial Value plus 25% of Actual Market Value
<b>Actuarial Assumptions</b>	
Investment Rate of Return	7.50%
Amortization Growth Rate	3.00%
Projected Salary Increases	Age-based graded scale
Inflation	3.00%

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**Milliman Actuarial Valuation**

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

	(1)	(2)	(3)	(4)	(5)	(6)
Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAAL) (2) - (1)	Funded Ratio (1) / (2)	Payroll	UAAAL as a Percentage of Payroll (3) / (5)
	Fiscal Year					
07/01/2008	2009-10	\$17,863,894	\$15,600,920	114.5%	\$3,574,134	0.0%
07/01/2009	2010-11	15,330,433	16,824,391	91.1%	3,852,237	38.8%
07/01/2010	2011-12	15,741,445	18,323,182	85.9%	3,737,359	69.1%
07/01/2011	2012-13	16,333,130	19,249,102	84.9%	4,140,391	70.4%
07/01/2012	2013-14	16,697,547	20,083,455	83.1%	4,542,061	74.5%
07/01/2013	2014-15	17,394,679	21,066,367	82.6%	4,627,012	79.4%
07/01/2014	2015-16	18,553,292	22,384,073	82.9%	5,040,802	76.0%
07/01/2015	2016-17	19,552,975	23,612,554	82.8%	5,112,538	79.4%
07/01/2016	2017-18	20,258,042	23,950,369	84.6%	6,391,246	57.8%
07/01/2017	2018-19	21,294,870	23,800,533	89.5%	6,518,727	38.4%

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

	(1)	(2)	(3)	(4)	(5)
Fiscal Year Ending June 30	Actuarially Determined Contribution	Contribution in Relation to the Actuarially Determined Contribution	Contribution Deficiency/ (Excess) (1) - (2)	Payroll	Contribution as a Percentage of Payroll (2) / (4)
2010	\$66,305	\$287,259	(\$220,954)	\$3,574,134	8.04%
2011	475,358	298,579	176,779	3,852,237	7.75%
2012	574,829	302,965	271,864	3,737,359	8.11%
2013	675,246	359,336	315,910	4,140,391	8.68%
2014	712,919	411,211	301,708	4,542,061	9.05%
2015	758,105	437,437	320,668	4,627,012	9.45%
2016	802,803	475,113	327,690	5,040,802	9.43%
2017	828,573	500,830	327,743	5,112,538	9.80%
2018	675,326	TBD	TBD	6,391,246	TBD
2019	575,704	TBD	TBD	6,518,727	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.

	As of July 1, 2016	As of July 1, 2017
1. Value of Vested Benefits		
Active Members	\$8,615,789	\$8,319,372
Terminated Vested Members	316,781	618,691
Retired Members	11,262,561	11,226,490
Disabled Members	0	0
Beneficiaries of Deceased Members	<u>520,943</u>	<u>477,231</u>
Total Value of Vested Benefits	20,716,074	20,641,784
2. Value of Non-Vested Benefits	536,947	569,787
3. Total Value of Accrued Benefits: (1) + (2)	21,253,021	21,211,571
4. Market Value of Assets	19,138,000	20,904,256
5. Vested Funded Ratio: (4) / (1)	92.4%	101.3%
6. Accrued Funded Ratio: (4) / (3)	90.0%	98.6%

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

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**Increase/(Decrease) during the 2016-2017 plan year attributable to:**

Increase for interest due to the decrease in the discount period	\$1,549,571
Benefits Accumulated/(Forfeited)	(385,063)
Benefit Payments	(1,205,958)
Plan Amendments	0
Changes in Actuarial Assumptions	0
Net Increase/(Decrease)	(41,450)

**Value of Accrued Plan Benefits:**

July 1, 2017	\$21,211,571
July 1, 2016	21,253,021
Net Increase/(Decrease)	(41,450)

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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, 2016</b>	123	13	70	0	6	212
Terminated not vested	(3)	2	1	-	-	0
Terminated, benefits due	(3)	3	-	-	-	0
Retired	(5)	-	5	-	-	0
Died, with beneficiary	-	-	(2)	-	2	0
Died, no beneficiary	-	-	(5)	-	(1)	(6)
Paid refund	(3)	-	-	-	-	(3)
New member	6	-	-	-	-	6
New beneficiary	-	-	-	-	-	0
Correction	-	-	1	-	(1)	0
<b>Count as of July 1, 2017</b>	115	18	70	0	6	209



## Section V - Membership Data

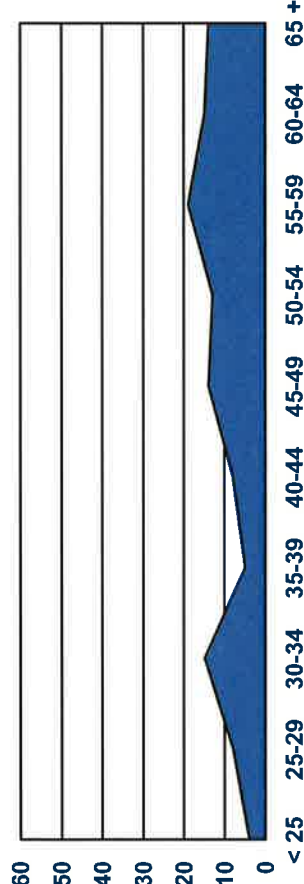
### B. Statistics of Membership

	As of July 1, 2016	As of July 1, 2017
<b>Active Members</b>		
Number	123	115
Average Age	48.2	48.8
Average Service	10.5	10.8
Payroll	\$7,066,572	\$6,518,727
Average Payroll	57,452	56,685
<b>Terminated Vested Members</b>		
Number	13	18
Total Annual Benefit	\$43,947	\$108,099
Average Annual Benefit	3,381	6,006
Average Age	51.4	48.5
<b>Retired Members</b>		
Number	70	70
Total Annual Benefit	\$1,253,199	\$1,271,095
Average Annual Benefit	17,903	18,159
Average Age	71.6	72.1
<b>Disabled Members</b>		
Number	0	0
Total Annual Benefit	\$0	\$0
Average Annual Benefit	0	0
Average Age	0.0	0.0
<b>Beneficiaries of Deceased Members</b>		
Number	6	6
Total Annual Benefit	\$59,588	\$43,245
Average Annual Benefit	9,931	7,208
Average Age	71.8	62.5

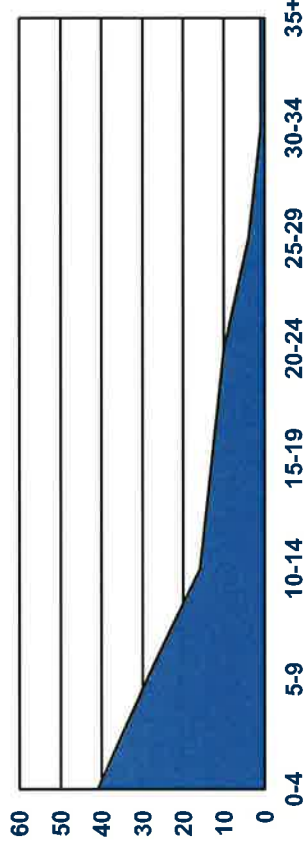
**Section V - Membership Data**  
**C. Distribution of Active Members as of July 1, 2017 - Count - Total**

Age	Years of Service								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
< 25	3	1	0	0	0	0	0	0	4
25-29	5	3	0	0	0	0	0	0	8
30-34	7	7	1	0	0	0	0	0	15
35-39	2	1	2	0	0	0	0	0	5
40-44	1	0	2	4	1	0	0	0	8
45-49	7	1	1	2	3	0	0	0	14
50-54	4	2	1	2	3	1	0	0	13
55-59	6	4	5	2	1	0	1	0	19
60-64	3	6	2	2	1	1	0	0	15
65 +	3	4	2	1	1	2	0	1	14
Total	41	29	16	13	10	4	1	1	115

Distribution By Age



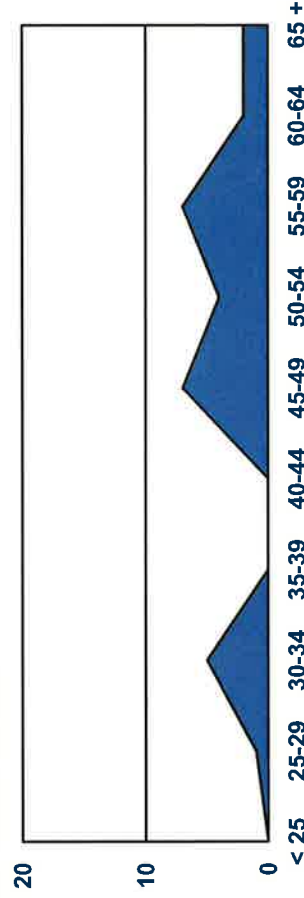
Distribution by Years of Service



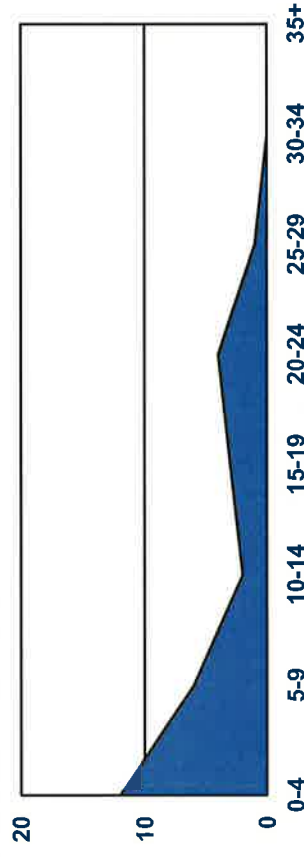
**Section V - Membership Data**  
**C. Distribution of Active Members as of July 1, 2017 - Count - Board of Education**

Age	Years of Service								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
<25	0	0	0	0	0	0	0	0	0
25-29	1	0	0	0	0	0	0	0	1
30-34	3	2	0	0	0	0	0	0	5
35-39	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0
45-49	2	1	0	1	3	0	0	0	7
50-54	2	0	1	1	0	0	0	0	4
55-59	3	2	1	0	1	0	0	0	7
60-64	1	0	0	1	0	0	0	0	2
65 +	0	1	0	0	0	1	0	0	2
Total	12	6	2	3	4	1	0	0	28

Distribution By Age



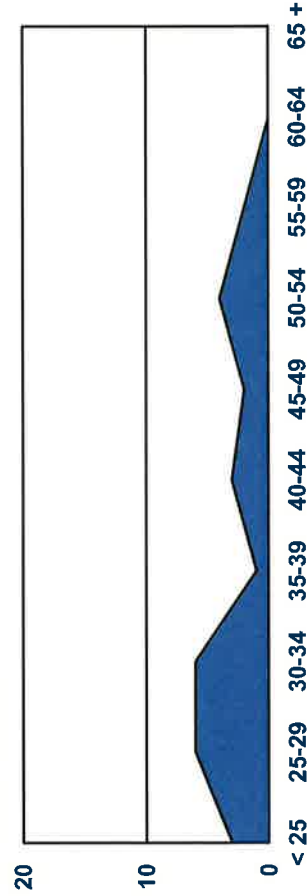
Distribution by Years of Service



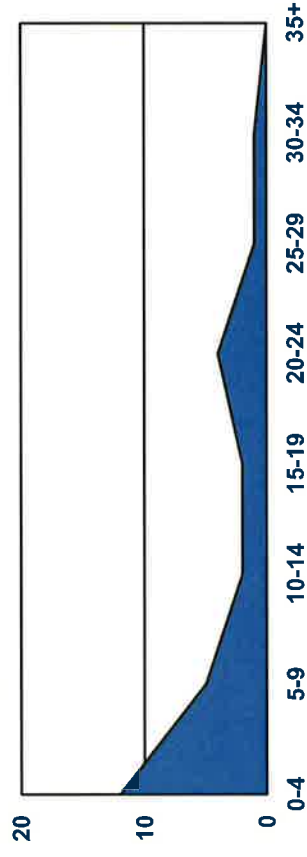
**Section V - Membership Data**  
**C. Distribution of Active Members as of July 1, 2017 - Count - Police**

Age	Years of Service								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
< 25	3	0	0	0	0	0	0	0	3
25-29	4	2	0	0	0	0	0	0	6
30-34	3	3	0	0	0	0	0	0	6
35-39	1	0	0	0	0	0	0	0	1
40-44	0	0	0	2	1	0	0	0	3
45-49	1	0	1	0	0	0	0	0	2
50-54	0	0	0	0	3	1	0	0	4
55-59	0	0	1	0	0	0	1	0	2
60-64	0	0	0	0	0	0	0	0	0
65 +	0	0	0	0	0	0	0	0	0
Total	12	5	2	2	4	1	1	0	27

Distribution By Age



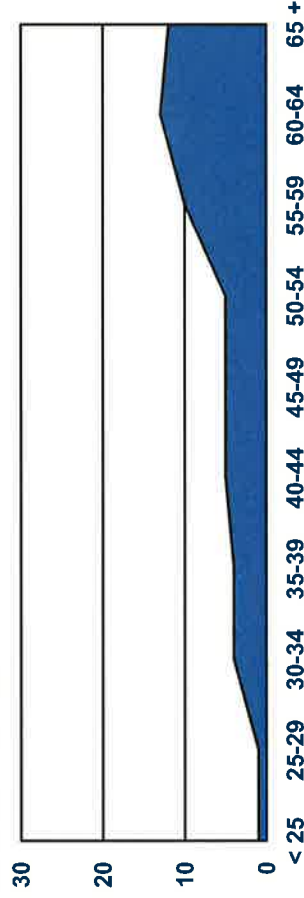
Distribution by Years of Service



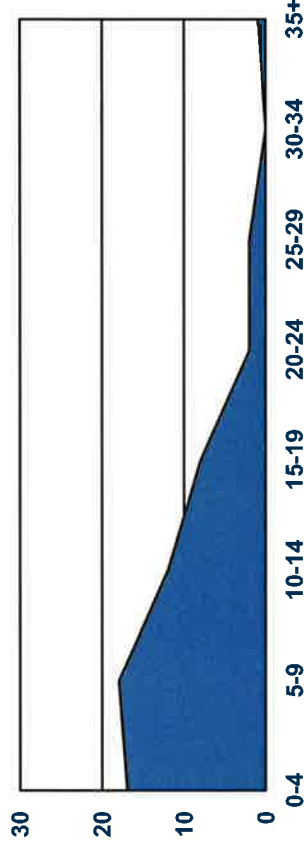
**Section V - Membership Data**  
**C. Distribution of Active Members as of July 1, 2017 - Count - Town**

Age	Years of Service								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
< 25	0	1	0	0	0	0	0	0	1
25-29	0	1	0	0	0	0	0	0	1
30-34	1	2	1	0	0	0	0	0	4
35-39	1	1	2	0	0	0	0	0	4
40-44	1	0	2	2	0	0	0	0	5
45-49	4	0	0	1	0	0	0	0	5
50-54	2	2	0	1	0	0	0	0	5
55-59	3	2	3	2	0	0	0	0	10
60-64	2	6	2	1	1	1	0	0	13
65 +	3	3	2	1	1	1	0	1	12
Total	17	18	12	8	2	2	0	1	60

**Distribution By Age**



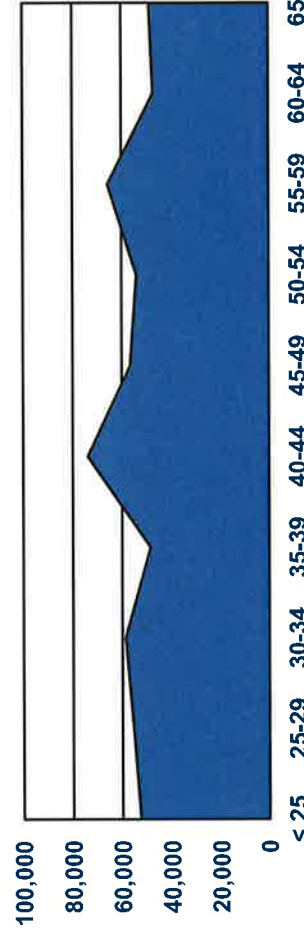
**Distribution by Years of Service**



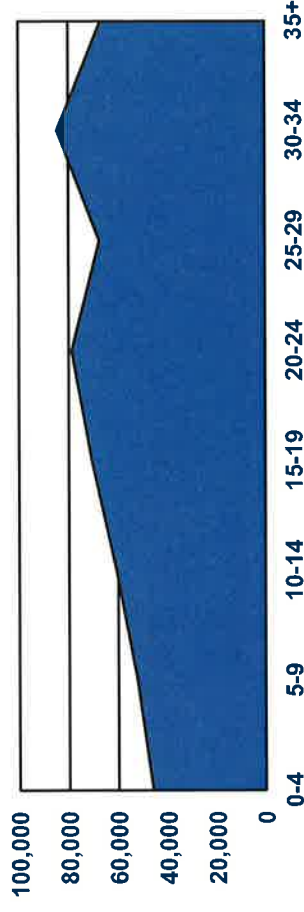
**Section V - Membership Data**  
**D. Distribution of Active Members as of July 1, 2017 - Average Pay - Total**

Age	Years of Service								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
< 25	52,800	52,794	0	0	0	0	0	0	52,799
25-29	54,234	57,803	0	0	0	0	0	0	55,572
30-34	55,547	61,604	63,718	0	0	0	0	0	58,918
35-39	37,002	70,990	49,176	0	0	0	0	0	48,669
40-44	27,041	0	54,634	76,892	148,501	0	0	0	74,047
45-49	40,542	56,023	81,185	76,883	73,274	0	0	0	56,756
50-54	30,671	36,620	71,162	59,999	75,218	92,183	0	0	54,225
55-59	54,555	67,210	71,420	76,531	60,164	0	84,680	0	65,851
60-64	37,748	46,919	49,763	55,360	51,682	52,689	0	0	47,291
65 +	41,176	28,665	46,880	75,201	83,744	62,771	0	66,976	48,815
Total	46,098	52,507	60,879	70,793	78,957	67,603	84,680	66,976	56,685

Distribution By Age



Distribution by Years of Service



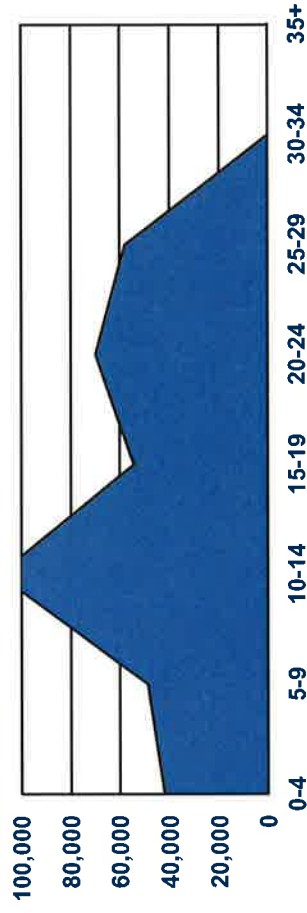
**Section V - Membership Data**  
**D. Distribution of Active Members as of July 1, 2017 - Average Pay - Board of Education**

Age	Years of Service								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
<25	0	0	0	0	0	0	0	0	0
25-29	24,404	0	0	0	0	0	0	0	24,404
30-34	60,134	56,144	0	0	0	0	0	0	58,538
35-39	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	0	0	0	0	0
45-49	33,176	56,023	0	58,906	73,274	0	0	0	57,300
50-54	31,495	0	71,162	56,848	0	0	0	0	47,750
55-59	42,153	51,707	147,506	0	60,164	0	0	0	62,506
60-64	46,596	0	0	47,568	0	0	0	0	47,082
65 +	0	22,264	0	0	0	57,953	0	0	40,109
Total	42,267	48,998	109,334	54,441	69,997	57,953	0	0	54,326

**Distribution By Age**



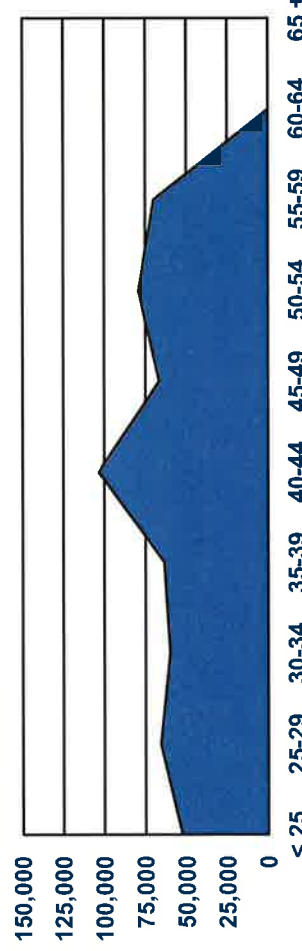
**Distribution by Years of Service**



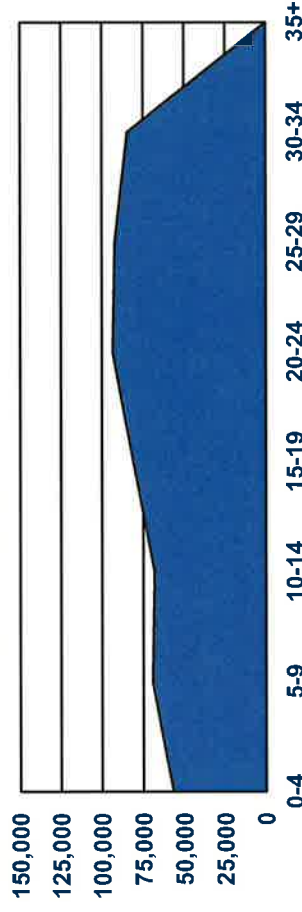
**Section V - Membership Data**  
**D. Distribution of Active Members as of July 1, 2017 - Average Pay - Police**

Age	Years of Service										Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+			
< 25	52,800	0	0	0	0	0	0	0			52,800
25-29	61,691	73,923	0	0	0	0	0	0			65,768
30-34	53,514	66,503	0	0	0	0	0	0			60,009
35-39	63,505	0	0	0	0	0	0	0			63,505
40-44	0	0	0	81,185	148,501	0	0	0			103,624
45-49	52,000	0	81,185	0	0	0	0	0			66,593
50-54	0	0	55,120	0	75,218	92,183	0	0			79,459
55-59	0	0	0	0	0	0	84,680	0			69,900
60-64	0	0	0	0	0	0	0	0			0
65 +	0	0	0	0	0	0	0	0			0
Total	56,768	69,471	68,153	81,185	93,539	92,183	84,680	0			69,565

**Distribution By Age**



**Distribution by Years of Service**

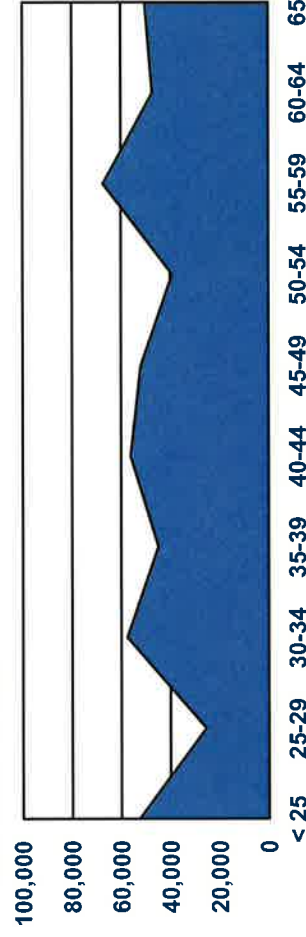




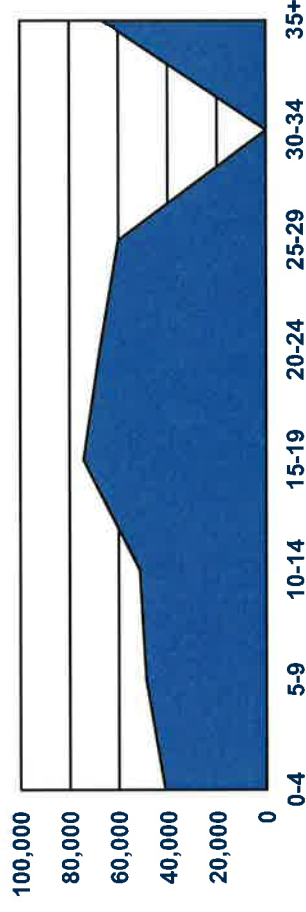
**Section V - Membership Data**  
**D. Distribution of Active Members as of July 1, 2017 - Average Pay - Town**

Age	Years of Service								Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+	
< 25	0	52,794	0	0	0	0	0	0	52,794
25-29	0	25,563	0	0	0	0	0	0	25,563
30-34	47,882	59,714	63,718	0	0	0	0	0	57,757
35-39	10,498	70,990	49,176	0	0	0	0	0	44,960
40-44	27,041	0	54,634	72,599	0	0	0	0	56,301
45-49	41,360	0	0	94,859	0	0	0	0	52,060
50-54	29,848	36,620	0	63,149	0	0	0	0	39,217
55-59	66,956	82,713	51,492	76,531	0	0	0	0	67,383
60-64	33,324	46,919	49,763	63,151	51,682	52,689	0	0	47,324
65 +	41,176	30,799	46,880	75,201	83,744	67,588	0	66,976	50,266
Total	41,271	48,964	51,592	74,328	67,713	60,139	0	66,976	51,989

Distribution By Age



Distribution by Years of Service



## Section V - Membership Data

### E. Distribution of Inactive Members as of July 1, 2017

	Age	Number	Annual Benefits
<b>Terminated Vested Members /</b>	< 30	3	\$0
<b>Members Due Refunds</b>	30 - 39	0	0
	40 - 49	6	53,745
	50 - 59	6	40,602
	60 - 64	3	13,752
	65 +	0	0
	Total	18	108,099
<b>Retired Members</b>	< 50	0	\$0
	50 - 59	8	250,526
	60 - 69	22	411,446
	70 - 79	26	456,636
	80 - 89	9	106,419
	90 +	5	46,068
	Total	70	1,271,095
<b>Disabled Members</b>	< 50	0	\$0
	50 - 59	0	0
	60 - 69	0	0
	70 - 79	0	0
	80 - 89	0	0
	90 +	0	0
	Total	0	0
<b>Beneficiaries</b>	< 50	2	\$22,720
	50 - 59	0	0
	60 - 69	1	7,774
	70 - 79	2	9,535
	80 - 89	1	3,216
	90 +	0	0
	Total	6	43,245

## 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. Beginning July 1, 2016, the **Unfunded Accrued Liability** is amortized as a level percent over 20 years. The amortization period will decrease each year until it reaches 10 years, after which time it will remain at 10 years.

The **Actuarial Value of Assets** is equal to 75% of the expected Actuarial Value of Assets (based on actual cash flows and assumed investment return) plus 25% of the actual market value.

## 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.

**Interest Rate** 7.50%

**Amortization Growth Rate** 3.00%

**Expenses** Current: Prior year actual administrative expenses increased by 3% and rounded to the nearest \$100. (Prior: None)

Salary Scale	Age	Rate
	25	5.50%
	30	4.75%
	35	4.25%
	40	4.00%
	45	3.75%
	50	3.50%
	55	3.25%
	60+	3.00%

**Healthy Mortality** 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.

**Disabled Mortality** RP-2000 Disabled Life Mortality Table, Male and Female. This assumption does not assume any improvements in longevity beyond the valuation date.

**Percent Married** All members are assumed to have an eligible spouse with females 3 years younger than males.

Disability	Age	Police	All Others
	25	0.13%	0.06%
	30	0.19%	0.06%
	35	0.28%	0.08%
	40	0.41%	0.12%
	45	0.63%	0.23%
	50	1.02%	0.52%
	55	1.74%	0.00%
	60+	2.42%	0.00%

## Appendix B - Actuarial Assumptions

### Turnover

Service	Rate
0-5	8.00%
6-9	4.00%
10+	2.00%

### Retirement

Police: 100% are assumed to retire at the earlier of age 60 or the completion of 25 years of service.

All Others:

Age	Rate
55	5%
56-61	3%
62	30%
63-64	15%
65	30%
66-69	25%
70+	100%

All members older than the assumed retirement age as of the valuation date are assumed to retire immediately.

## 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>	Any individual employed by the Town of Old Saybrook who has completed 6 months (12 months prior to January 1, 2008) of continued employment and who elects to make the necessary contributions. The contributions begin as of the date the participant enters the Plan. The individuals covered include those individuals employed by the Town of Old Saybrook, the Board of Education, and Police.
<b>Employee Contributions</b>	<p>5% of Earnings.</p> <p>No contributions will be required after 35 years of service or after Normal Retirement Date.</p> <p>Employee Contributions will be credited with interest at the rate of 5% per year.</p> <p>A refund of Employee Contributions with interest to the date of termination of employment or death is paid, unless the employee is eligible for a deferred retirement benefit.</p>
<b>Credited Service</b>	Whole years and full months from date of hire and while contributing, else from date of participation, but not greater than 35 years.
<b>Final Average Earnings</b>	Highest average earnings received in any 3 years.
<b>Normal Retirement Date</b>	<p>Police - The earlier of age 60 or 25 years of Credited Service.</p> <p>All Others - The earlier of age 62 or 5 years of Credited Service.</p>
<b>Normal Retirement Benefit</b>	<p>Police - 2% of Final Average Earnings multiplied by Credited Service up to 35 years. If completes less than 25 years of Credited Service, benefit is based on 2% between age 60 to age 62 and then 1½% after age 62.</p> <p>All Others - 1½% of Final Average Earnings multiplied by Credited Service prior to July 1, 1988 plus 2% of Final Average Earnings multiplied by Credited Service after July 1, 1988. Total Credited Service is limited to 35 years with service after July 1, 1988 counted first.</p>

## Appendix C - Summary of Plan Provisions

<b>Early Retirement Date</b>	The later of age 55 and the completion of 15 years of Credited Service.
<b>Early Retirement Benefit</b>	Benefit is based on Credited Service and Final Average Earnings to actual retirement date reduced by 6% for each year by which Early Retirement Date precedes Normal Retirement Date.
<b>Deferred Retirement Date</b>	Members may continue to work beyond Normal Retirement.
<b>Deferred Retirement Benefit</b>	Benefit based on Credited Service and Final Average Earnings to actual date of retirement.
<b>Normal Form of Annuity</b>	Modified Cash Refund.
<b>Preretirement Death Benefit</b>	A monthly survivor benefit payable on behalf of a member who has attained age 55 and completed 15 years of Credited Service, and who has a surviving spouse to whom the member has been married at least one year. The benefit will be 50% of the monthly retirement benefit which such member would have received had he or she retired on the day before death and elected a 50% Joint & Survivor Annuity.
<b>Disability Eligibility</b>	Police - 5 years of Credited Service.  All Others - 15 years of Credited Service.
<b>Disability Benefit</b>	Benefit calculated using Credited Service and Final Average Earnings through Date of Disability, reduced by any payments received under the Worker's Compensation Act.
<b>Vesting</b>	A member is 100% vested after 10 years of Credited Service or upon attainment of Normal Retirement.
<b>Termination Benefit</b>	Normal Retirement Benefit calculated using Credited Service and Final Average Earnings through Date of Termination.  All benefits are forfeited upon withdrawal of Employee Contributions.