



TOWN OF GLASTONBURY OTHER POST-EMPLOYMENT BENEFITS PROGRAM

**Actuarial Valuation as of July 1, 2019
To Determine Funding for Fiscal Year 2020-21**

Prepared by

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Certification

We have performed an actuarial valuation of the Plan as of July 1, 2019 to determine funding for fiscal year 2020-21. This report presents the results of our valuation.

The ultimate cost of an Other Post-Employment Benefits (OPEB) plan is the total amount needed to provide benefits for plan members and beneficiaries and to pay the expenses of administering the plan. OPEB 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 actuarial standards of practice. In addition, this report provides:

- A valuation of plan assets and liabilities to review the year-to-year progress of funding.
- Review of plan experience since the previous valuation 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.

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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.

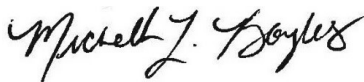
Certification

The calculations reported herein have been made on a basis consistent with our understanding of the plan provisions. Additional determinations may be needed for purposes other than determining funding amounts, 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. 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 actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The undersigned is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Michelle L. Boyles, FSA
Consulting Actuary

Section I - Executive Summary Changes Since the Prior Valuation

Demographic Changes and Plan Experience

From July 1, 2017 to July 1, 2019, the overall membership increased from 1,029 to 1,081. The number of active members increased from 861 to 932, and the total number of members and spouses/dependents receiving benefits decreased from 168 to 149.

The average age of active members decreased slightly from 48.4 to 47.8, and the average age of members receiving benefits increased from 69.6 to 70.8.

We updated expected claims costs based on our analysis of the claims experience and premium information that was provided to us for this valuation. Per capita healthcare costs increased more than expected, which increased liabilities by about \$417,000.

Plan Changes

The Board subsidy for Administrators who retire after June 30, 2018 was increased from 1,250 to 2,000. AFSCME retirees who wish to maintain coverage for ages 55-64 must pay 105% of the premium until they reach age 65. The net impact increased liabilities by about \$20,000.

Changes in Actuarial Methods and Assumptions

We have made the following assumption changes to better represent future expectations.

To reflect the provisions of the Secure Act, we have modified the medical trend assumption to no longer include a provision for the excise tax.

For Teachers and Administrators, we updated the mortality assumption to reflect the assumption used in the June 30, 2018 valuation of the Connecticut State Teachers' Retirement System. For all other employees, we updated the mortality assumption from the RP-2000 Mortality Table with generational projection per Scale BB to the Pub-2010 Mortality Table with generational projection per scale MP-2019, with employee rates before benefit commencement and healthy or disabled annuitant rates after benefit commencement. We used PubS-2010 tables for public safety groups and PubG-2010 tables for all others.

We now assume that 100% of Teachers and Administrators will either be covered by Medicare or elect coverage through the Connecticut State Teachers' Retirement System at age 65.

We decreased the discount rate from 6.625% to 6.50% for all groups to align with the expected return on assets supported by the investment policy.

These assumption changes in combination decreased the Unfunded Liability by about \$558,000.

Other Significant Changes

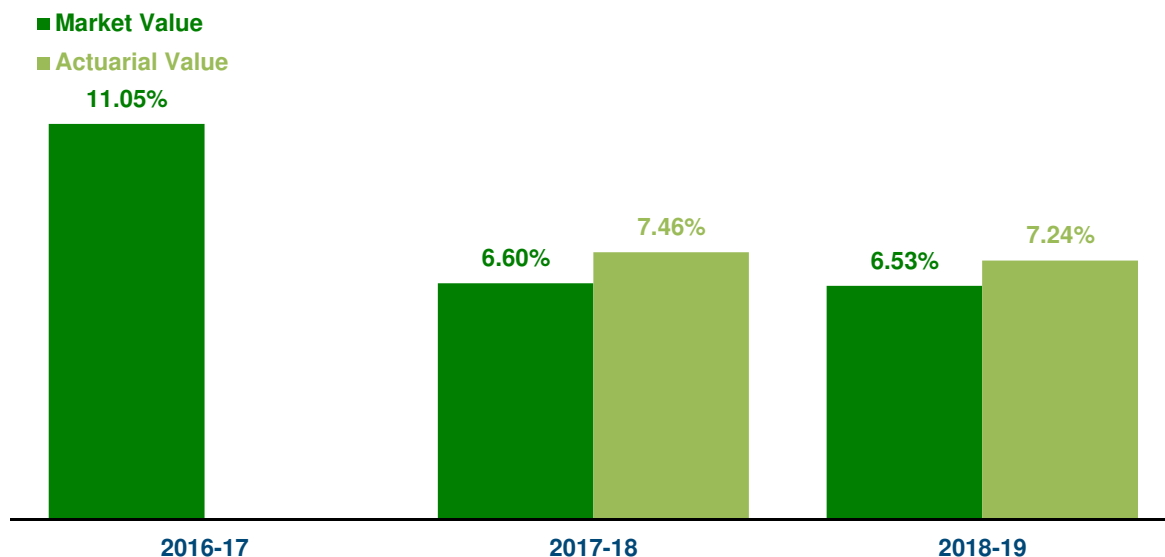
None.

Section I - Executive Summary 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 non-asymptotically over five years.

	Market	Actuarial
Value as of July 1, 2017	\$3,815,590	\$3,707,707
Town Contributions	1,392,915	1,392,915
Investment Income	274,274	302,143
Benefit Payments and Administrative Expenses	(709,707)	(709,707)
Value as of July 1, 2018	4,773,072	4,693,058
Town Contributions	1,579,962	1,579,962
Investment Income	334,069	364,471
Benefit Payments and Administrative Expenses	(891,970)	(891,970)
Value as of July 1, 2019	5,795,133	5,745,521

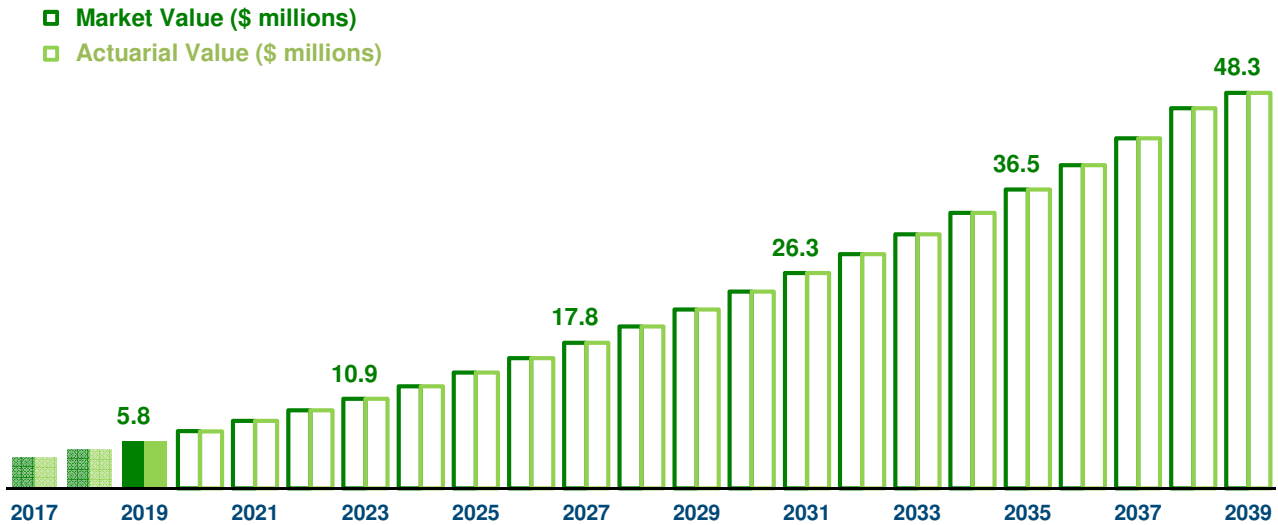
For fiscal year 2017-18, the plan's assets earned 6.60% on a Market Value basis. The actuarial assumption for this period was 6.625%; the result is an asset loss of about \$1,100. For fiscal year 2018-19, the plan's assets earned 6.53% on a Market Value basis. The actuarial assumption for this period was 6.625%; the result is an asset loss of about \$4,600. Historical rates of return are shown in the graph below.



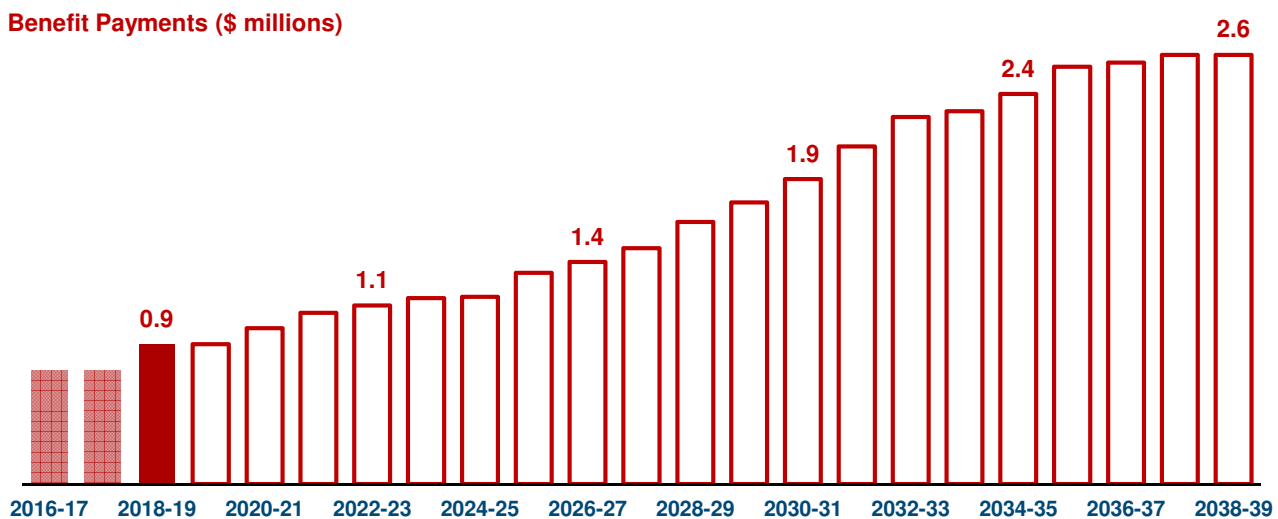
Please note that the Actuarial Value currently is less than the Market Value by \$49,600. This figure represents investment gains that will be gradually recognized in future years. This process will exert downward pressure on the Town's contribution, unless there are offsetting market losses.

Section I - Executive Summary Assets (continued)

The graph below shows how this year's asset values compare to where the plan's assets have been over the past several years and how they are projected to change over the next 20 years. For purposes of this projection, we have assumed that the Town always contributes the Actuarially Determined Contribution and the investments always earn the assumed interest rate each year.

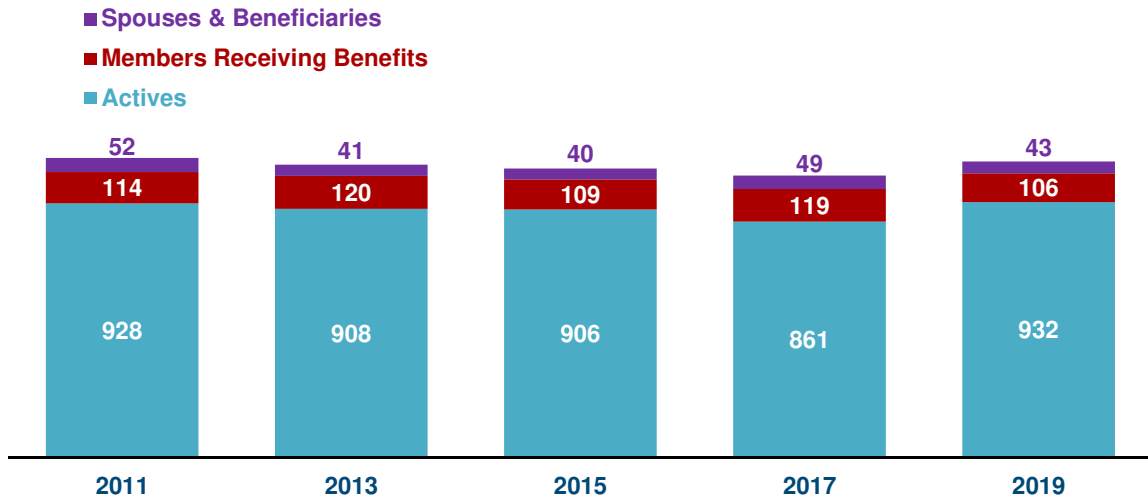


In 2018-19, the plan paid out \$0.9 million in benefits to members. Over the next 20 years, the plan is projected to pay out a total of \$35 million in benefits to members.



Section I - Executive Summary Membership

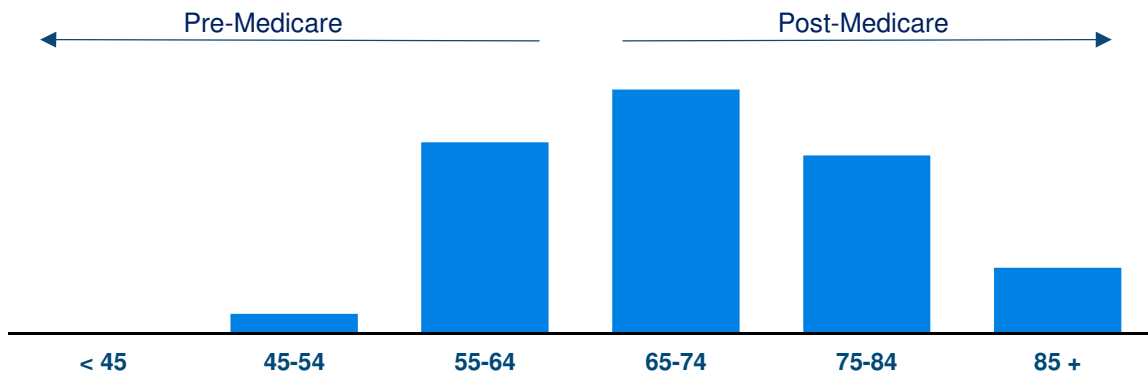
There are two basic categories of plan members included in the valuation: (1) spouses and beneficiaries of members who are receiving benefits, (2) members who are receiving benefits and (3) active employees who have met the eligibility requirements for membership.



Members Receiving Benefits on July 1, 2019

Housing Authority	1	Average Age	70.8
Town	53		
GPOA	18		
BOE Non-Certified	2		
BOE Certified	<u>32</u>		
Total	106		

As of July 1, 2019, there were 106 members receiving benefits and 43 spouses/dependents receiving benefits. The members receiving benefits fall across a wide distribution of ages:



Section I - Executive Summary Membership (continued)

Active Members on July 1, 2019

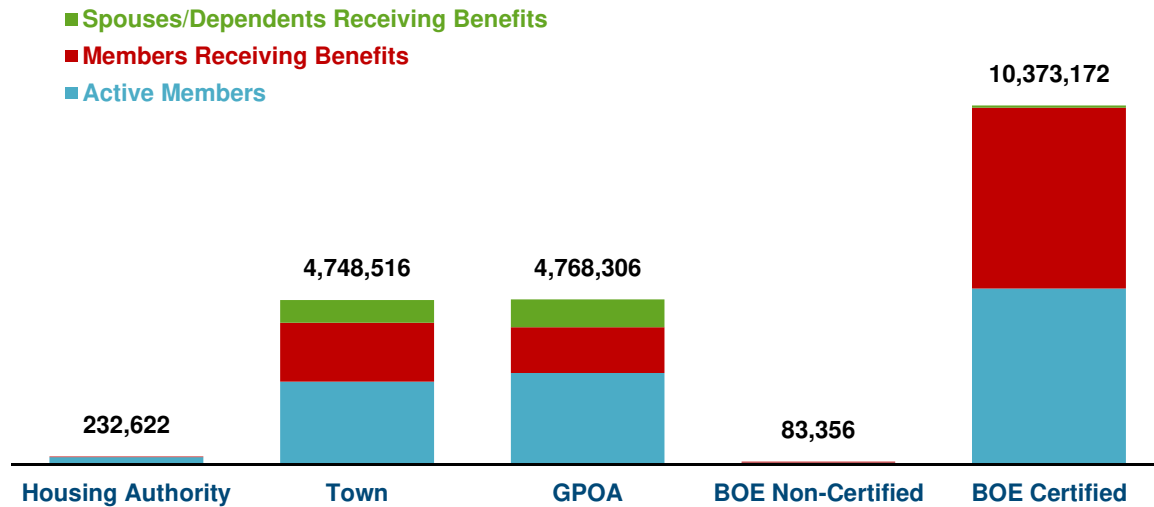
Housing Authority	13	Average Age	47.8
Town	135	Average Service	13.9
GPOA	58	Payroll	\$74,692,514
BOE Non-Certified	235	Average Payroll	80,142
BOE Certified	<u>491</u>		
Total	932		

The table below illustrates the age and years of service of the active membership:

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25	7	3						10
25-29	30	9	1					40
30-34	32	50	11					93
35-39	30	34	51	9				124
40-44	18	8	28	39	11			104
45-49	16	14	37	36	26	3	1	133
50-54	23	33	28	35	22	6	7	154
55-59	7	14	29	34	20	9	17	130
60-64	2	6	21	34	16	7	18	104
65+			4	5	14	5	12	40
Total	165	171	210	192	109	30	55	932

Section I - Executive Summary Accrued Liability

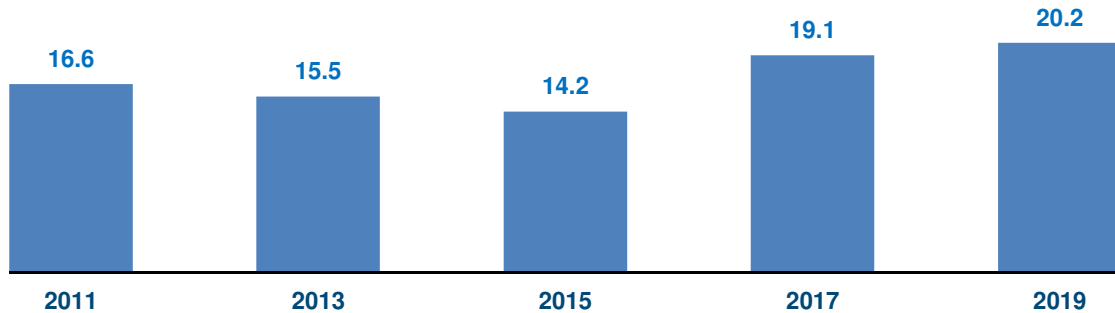
The Accrued Liability as of July 1, 2019 is \$20,205,972, which consists of the following pieces:



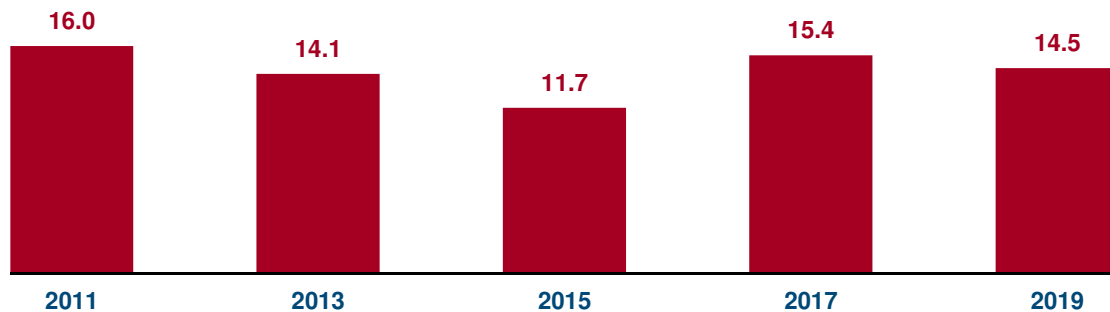
Section I - Executive Summary Funded Status

The Accrued Liability grows over time as active members earn additional benefits, and goes down over time as members receive benefits; it may also change when there are changes to the plan provisions or changes in the actuarial assumptions. The Unfunded Accrued Liability is the dollar difference between the Accrued Liability and the Actuarial Value of Assets; the Funded Ratio is the ratio of the two.

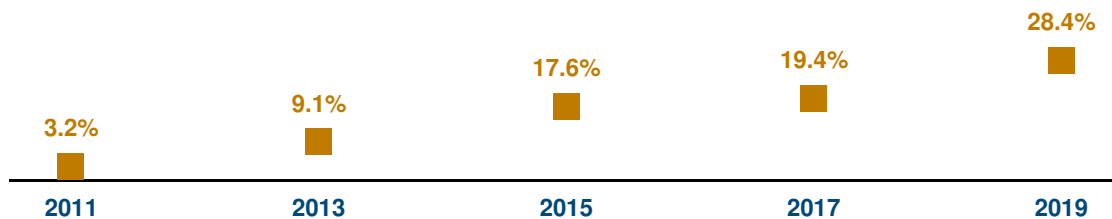
Accrued Liability (\$ millions)



Unfunded Accrued Liability (\$ millions)



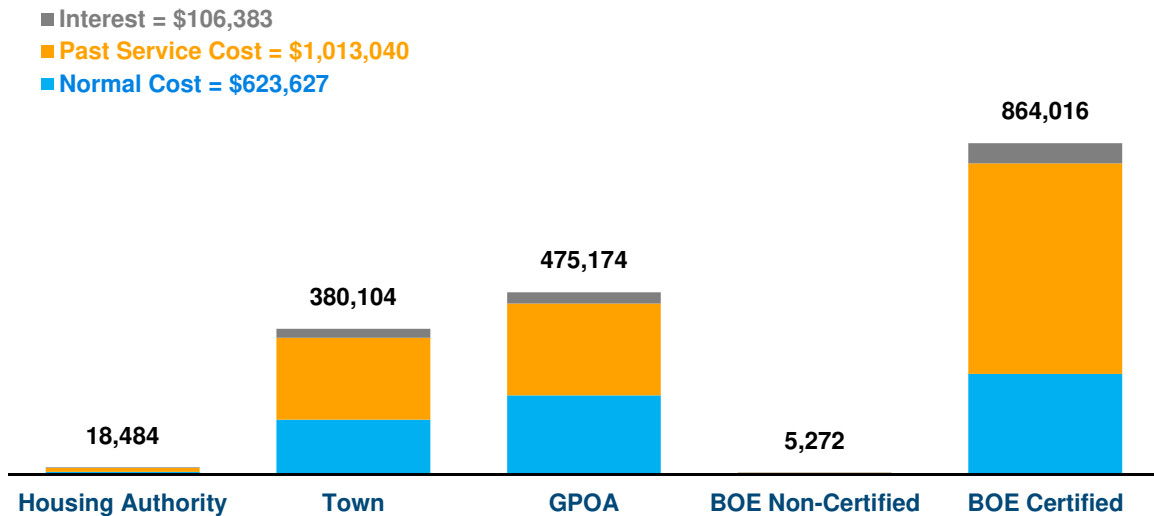
Funded Ratio



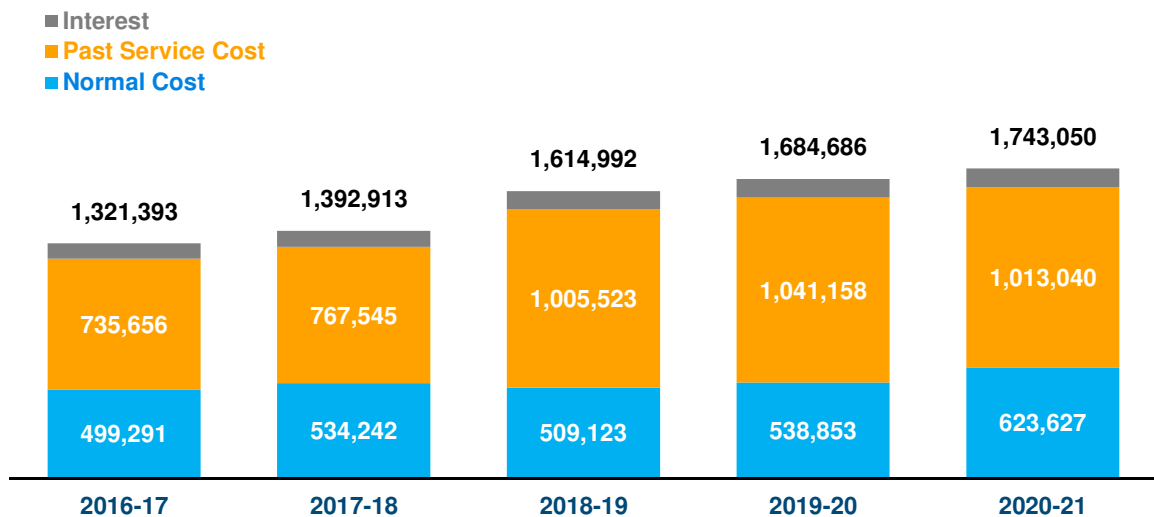
Section I - Executive Summary Actuarially Determined Contribution

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 reflect the timing of the contribution relative to the valuation date.

The Actuarially Determined Contribution for fiscal year 2020-21 is \$1,743,050, as shown graphically below.



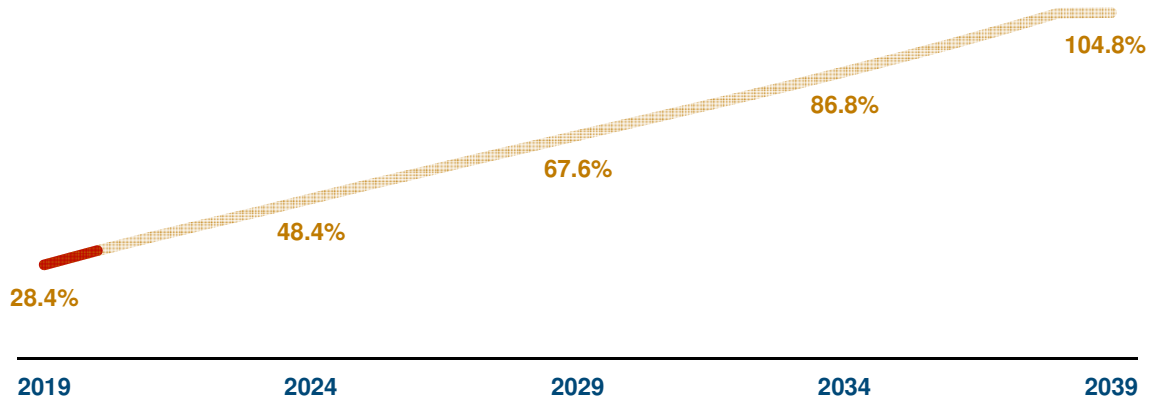
The chart below shows the Actuarially Determined Contribution for the past five fiscal years. Note that the Normal Cost is relatively consistent from year to year, whereas the Past Service Cost tends to be more volatile since it reflects the impact of asset performance.



Section I - Executive Summary Long-Range Forecast

If the Town pays the Actuarially Determined Contribution each year, the investments earn exactly the assumed interest rate each year, and there are no changes in the plan provisions or in the actuarial methods and assumptions, then we project the following changes in the plan's funded status and the long-range contribution levels:

Funded Ratio



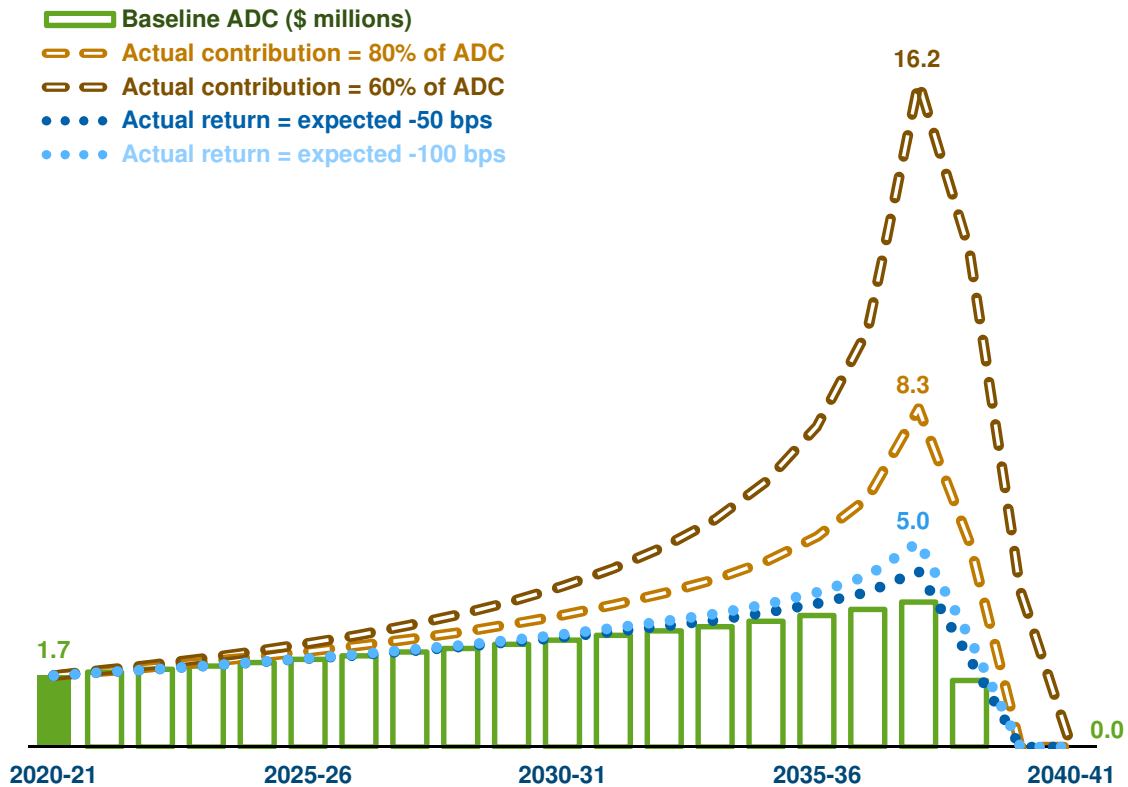
Actuarially Determined Contribution (\$ millions)



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 Long-Range Forecast (continued)

Benefits are paid for through a combination of contributions from the Town and from employees, and from investment income. If the Town pays less than the Actuarially Determined Contribution each year, or if the investments persistently earn less than the assumed interest rate, then the plan's funded status would suffer, and to compensate, the Town's contribution levels would be pushed higher. The risks of underfunding and underearning are illustrated in the hypothetical scenarios below:



The scenarios illustrated above are based on deterministic projections that assume emerging plan experience always exactly matches the actuarial assumptions; in particular that actual asset returns will be constant in every year of the projection period. Variation in asset returns, contribution amounts, and many other factors may have a significant impact on the long-term financial health of the plan, the liquidity constraints on plan assets, and the Town's future contribution levels. Stochastic projections could be prepared that would enable the Town to understand the potential range of future results based on the expected variability in asset returns and other factors. Such analysis was beyond the scope of this engagement.

Section I - Executive Summary Summary of Principal Results

Membership as of	July 1, 2017	July 1, 2019
Active Members	861	932
Members Receiving Benefits	119	106
Spouses & Beneficiaries	<u>49</u>	<u>43</u>
Total Count	1,029	1,081
 Payroll	 \$67,020,668	 \$74,692,514
 Assets and Liabilities as of	 July 1, 2017	 July 1, 2019
Market Value of Assets	\$3,815,590	\$5,795,133
Actuarial Value of Assets	3,707,707	5,745,521
Accrued Liability for Active Members	9,508,800	10,395,228
Accrued Liability for Members Receiving Benefits	<u>9,582,721</u>	<u>9,810,744</u>
Total Accrued Liability	19,091,521	20,205,972
Unfunded Accrued Liability	15,383,814	14,460,451
Funded Ratio	19.4%	28.4%
 Actuarially Determined Contribution for Fiscal Year	 2018-19	 2020-21
Normal Cost	\$509,123	\$623,627
Past Service Cost	1,005,523	1,013,040
Interest	<u>100,346</u>	<u>106,383</u>
Actuarially Determined Contribution	1,614,992	1,743,050
Allocated to Housing Authority	\$12,355	\$18,484
Allocated to Town	349,055	380,104
Allocated to GPOA	378,020	475,174
Allocated to BOE Non-Certified	1,385	5,272
Allocated to BOE Certified	<u>874,177</u>	<u>864,016</u>
Total	1,614,992	1,743,050

Section II - Plan Assets

A. Summary of Fund Transactions

Market Value as of July 1, 2017	\$3,815,590
Town Contributions	1,392,915
Net Investment Income	274,274
Benefit Payments	(698,550)
Administrative Expenses	(11,157)
 Market Value as of June 30, 2018	 4,773,072
Expected Return on Market Value of Assets, 2017-18	275,396
Market Value (Gain)/Loss, 2017-18	1,122
Approximate Rate of Return, 2017-18*	6.60%
 Market Value as of July 1, 2018	 \$4,773,072
Town Contributions	1,579,962
Net Investment Income	334,069
Benefit Payments	(860,025)
Administrative Expenses	(31,945)
 Market Value as of June 30, 2019	 5,795,133
Expected Return on Market Value of Assets, 2018-19	338,640
Market Value (Gain)/Loss, 2018-19	4,571
Approximate Rate of Return, 2018-19*	6.53%

* The rates shown here are not the dollar or time weighted investment yield rate which measures investment performance. They are an approximate net return assuming all activity occurred on average midway through the fiscal year.

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 in equal installments ('non-asymptotically') 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		\$3,815,590
	b. Town Contributions		1,392,915
	c. Benefit Payments and Administrative Expenses		(709,707)
	d. Expected Earnings Based on 6.625% Interest		<u>275,396</u>
	e. Expected Market Value of Assets as of July 1, 2018		4,774,194
2.	Actual Market Value of Assets as of July 1, 2018		4,773,072
3.	Market Value (Gain)/Loss: (1e) - (2)		1,122
4.	Delayed Recognition of Market (Gains)/Losses		
		Percent Not	Amount Not
	Plan Year End	(Gain)/Loss	Recognized
	06/30/2018	\$1,122	80%
	06/30/2017	(134,854)	60%
	06/30/2016	N/A	40%
	06/30/2015	N/A	20%
			(80,014)
5.	Actuarial Value of Assets as of July 1, 2018: (2) + (4)		4,693,058
6.	Return on Actuarial Value of Assets		302,143
7.	Approximate Rate of Return on Actuarial Value of Assets		7.46%
8.	Actuarial Value (Gain)/Loss		(33,891)

Section II - Plan Assets

B. Development of Actuarial Value of Assets

The Actuarial Value of Assets as of July 1, 2019 is determined below.

1.	Expected Market Value of Assets:		
	a. Market Value of Assets as of July 1, 2018		\$4,773,072
	b. Town Contributions		1,579,962
	c. Benefit Payments and Administrative Expenses		(891,970)
	d. Expected Earnings Based on 6.625% Interest		<u>338,640</u>
	e. Expected Market Value of Assets as of July 1, 2019		5,799,704
2.	Actual Market Value of Assets as of July 1, 2019		5,795,133
3.	Market Value (Gain)/Loss: (1e) - (2)		4,571
4.	Delayed Recognition of Market (Gains)/Losses		
		Percent Not	Amount Not
	Plan Year End	(Gain)/Loss	Recognized
	06/30/2019	\$4,571	80%
	06/30/2018	1,122	60%
	06/30/2017	(134,854)	40%
	06/30/2016	N/A	20%
			(49,612)
5.	Actuarial Value of Assets as of July 1, 2019: (2) + (4)		5,745,521
6.	Return on Actuarial Value of Assets		364,471
7.	Approximate Rate of Return on Actuarial Value of Assets		7.24%
8.	Actuarial Value (Gain)/Loss		(30,776)

Section III - Development of Contribution

A. Summary of Liabilities

We have calculated the Accrued Liability separately for 5 groups, who are eligible for different OPEB benefits. We have broken the accrued liability into several pieces: benefits that are expected to be paid prior to age 65 (i.e. prior to Medicare) and after age 65 (i.e. after Medicare) to current active members and their covered dependents after retirement, and the same figures for members who have already retired and are currently receiving benefits. In all cases, the Accrued Liability only reflects benefits that are paid for by the Town, taking into account any implicit rate subsidies.

	Housing Authority	Town	GPOA	BOE Non- Certified	BOE Certified	Total
Current active members						
Members Under Age 65	\$19,468	\$244,106	\$1,468,457	\$45,900	\$4,527,693	\$6,305,624
Members Over Age 65	138,389	1,519,052	475,669	0	0	2,133,110
Spouses/Dependents Under Age 65	7,547	124,044	567,623	7,440	559,667	1,266,321
Spouses/Dependents Over Age 65	<u>46,592</u>	<u>509,476</u>	<u>134,105</u>	<u>0</u>	<u>0</u>	<u>690,173</u>
Total	211,996	2,396,678	2,645,854	53,340	5,087,360	10,395,228
Current members receiving benefits						
Members Under Age 65	0	115,788	708,896	30,016	524,494	1,379,194
Members Over Age 65	20,626	1,579,044	608,830	0	4,698,216	6,906,716
Spouses/Dependents Under Age 65	0	43,215	556,310	0	63,102	662,627
Spouses/Dependents Over Age 65	<u>0</u>	<u>613,791</u>	<u>248,416</u>	<u>0</u>	<u>0</u>	<u>862,207</u>
Total	20,626	2,351,838	2,122,452	30,016	5,285,812	9,810,744
Total Accrued Liability	232,622	4,748,516	4,768,306	83,356	10,373,172	20,205,972
Accrued Liability Sensitivity						
	1% Decrease		Baseline		1% Increase	
Discount Rate	22,621,326		20,205,972		18,148,831	
Trend Rate	17,867,384		20,205,972		23,023,827	

Section III - Development of Contribution

B. Actuarially Determined Contribution

The Actuarially Determined Contribution (ADC) for the OPEB program consists of three pieces: a **Normal Cost** (the cost of benefits earned each year should be accrued in that year) plus a **Past Service Cost** (a catch-up accrual to amortize the Unfunded Accrued Liability) plus **Interest** to reflect the timing lag between the valuation date and the fiscal year.

The amortization method produces annual payments that will increase by 3.50% annually. On this basis, the ADC is determined as follows:

	Housing Authority	Town	GPOA	BOE Non- Certified	BOE Certified	Total
Accrued Liability	\$232,622	\$4,748,516	\$4,768,306	\$83,356	\$10,373,172	\$20,205,972
Actuarial Value of Assets	88,829	1,700,795	1,352,334	65,764	2,537,799	5,745,521
Unfunded Accrued Liability	143,793	3,047,721	3,415,972	17,592	7,835,373	14,460,451
Funded Ratio	38.2%	35.8%	28.4%	78.9%	24.5%	28.4%
Amortization Period	18	18	18	18	18	18
Amortization Growth Rate	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Past Service Cost	10,074	213,511	239,309	1,232	548,914	1,013,040
Normal Cost	6,787	133,921	199,332	3,352	248,235	591,627
Expenses	495	9,473	7,532	366	14,134	32,000
Employer Normal Cost	7,282	143,394	206,864	3,718	262,369	623,627
Interest	1,128	23,199	29,001	322	52,733	106,383
ADC for FY 2020-21	18,484	380,104	475,174	5,272	864,016	1,743,050
Expected Benefit Payouts	(6,734)	(232,104)	(238,877)	(11,501)	(469,738)	(958,954)
Net Budget Impact	11,750	148,000	236,297	(6,229)	394,278	784,096

Section III - Development of Contribution C. Long Range Forecast

This forecast is based on the results of the July 1, 2019 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	Values as of the Valuation Date				Fiscal Year	Cash Flows Projected to the Following Fiscal Year			
	Accrued Liability	Actuarial Value of Assets	Unfunded Accrued Liability	Funded Ratio		Town Contributions	Member Contributions	Benefit Payments	Net Cash Flows
7/1/2019	\$20,205,972	\$5,745,521	\$14,460,451	28.4%	2020-21	\$1,743,050	\$0	(\$958,954)	\$784,096
7/1/2020	21,262,000	6,965,000	14,297,000	32.8%	2021-22	1,826,000	0	(1,054,000)	772,000
7/1/2021	22,332,000	8,220,000	14,112,000	36.8%	2022-23	1,897,000	0	(1,100,000)	797,000
7/1/2022	23,404,000	9,514,000	13,890,000	40.7%	2023-24	1,978,000	0	(1,145,000)	833,000
7/1/2023	24,536,000	10,917,000	13,619,000	44.5%	2024-25	2,058,000	0	(1,153,000)	905,000
7/1/2024	25,731,000	12,449,000	13,282,000	48.4%	2025-26	2,140,000	0	(1,301,000)	839,000
7/1/2025	27,031,000	14,153,000	12,878,000	52.4%	2026-27	2,223,000	0	(1,367,000)	856,000
7/1/2026	28,299,000	15,898,000	12,401,000	56.2%	2027-28	2,316,000	0	(1,452,000)	864,000
7/1/2027	29,623,000	17,773,000	11,850,000	60.0%	2028-29	2,403,000	0	(1,613,000)	790,000
7/1/2028	30,982,000	19,778,000	11,204,000	63.8%	2029-30	2,508,000	0	(1,734,000)	774,000
7/1/2029	32,314,000	21,835,000	10,479,000	67.6%	2030-31	2,611,000	0	(1,877,000)	734,000
7/1/2030	33,654,000	24,008,000	9,646,000	71.3%	2031-32	2,724,000	0	(2,078,000)	646,000
7/1/2031	34,987,000	26,279,000	8,708,000	75.1%	2032-33	2,833,000	0	(2,260,000)	573,000
7/1/2032	36,245,000	28,605,000	7,640,000	78.9%	2033-34	2,940,000	0	(2,294,000)	646,000
7/1/2033	37,439,000	31,007,000	6,432,000	82.8%	2034-35	3,073,000	0	(2,402,000)	671,000
7/1/2034	38,742,000	33,637,000	5,105,000	86.8%	2035-36	3,213,000	0	(2,569,000)	644,000
7/1/2035	40,080,000	36,464,000	3,616,000	91.0%	2036-37	3,359,000	0	(2,593,000)	766,000
7/1/2036	41,387,000	39,444,000	1,943,000	95.3%	2037-38	3,539,000	0	(2,641,000)	898,000
7/1/2037	42,816,000	42,742,000	74,000	99.8%	2038-39	1,621,000	0	(2,642,000)	(1,021,000)
7/1/2038	44,360,000	46,390,000	(2,030,000)	104.6%	2039-40	0	0	(2,767,000)	(2,767,000)

Section III - Development of Contribution D. History of Funded Status

Valuation Date	Actuarial Value of Assets	Accrued Liability	Unfunded Accrued Liability	Funded Ratio
July 1, 2011	\$537,000	\$16,558,000	\$16,021,000	3.2%
July 1, 2013	1,405,088	15,478,492	14,073,404	9.1%
July 1, 2015	2,486,174	14,156,020	11,669,846	17.6%
July 1, 2017	3,707,707	19,091,521	15,383,814	19.4%
July 1, 2019	5,745,521	20,205,972	14,460,451	28.4%

Section III - Development of Contribution

E. History of Town Contributions

Fiscal Year	Actuarially Determined Contribution	Actual Town Contribution	Contribution Deficiency (Excess)
2012-13	\$1,478,000	\$1,141,000	\$337,000
2013-14	1,556,000	1,088,000	468,000
2014-15	1,528,458	1,381,616	146,842
2015-16	1,634,197	1,522,386	111,811
2016-17	1,321,393	925,241	396,152
2017-18	1,392,913	1,392,915	(2)
2018-19	1,614,992	1,579,962	35,030
2019-20	1,684,686	TBD	TBD
2020-21	1,743,050	TBD	TBD

Section IV - Membership Data

A. Statistics of Active Membership

		As of July 1, 2017	As of July 1, 2019
Number of Active Members	Housing Authority	8	13
	Town	149	135
	GPOA	53	58
	BOE Non-Certified	194	235
	BOE Certified	<u>457</u>	<u>491</u>
	Total	861	932
Average Age	Housing Authority	57.0	49.5
	Town	51.6	51.2
	GPOA	41.2	39.0
	BOE Non-Certified	54.2	52.8
	BOE Certified	<u>45.7</u>	<u>45.5</u>
	Total	48.4	47.8
Average Service	Housing Authority	18.2	14.7
	Town	15.8	14.3
	GPOA	12.5	10.9
	BOE Non-Certified	15.0	13.5
	BOE Certified	<u>13.9</u>	<u>14.3</u>
	Total	14.4	13.9

Section IV - Membership Data

B. Distribution of Active Members

Housing Authority

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

Town

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25								0
25-29	4	1						5
30-34	8	2						10
35-39	11	2	1	1				15
40-44	4	1	2	1	1			9
45-49	4		2	4				10
50-54	10	2	6	4	3	2	3	30
55-59	2	2	3	4	3	3	6	23
60-64		5	5	8	1	1	7	27
65+					1	1	4	6
Total	43	15	19	22	9	7	20	135

GPOA

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25	1							1
25-29	11	1						12
30-34	4	4	2					10
35-39	3	1	7	3				14
40-44	1	1	1	1				4
45-49	1		2	1	1		1	6
50-54		1		6	1			8
55-59					1			2
60-64							1	1
65+								0
Total	21	8	12	11	3	0	3	58

Section IV - Membership Data

B. Distribution of Active Members

BOE Non-Certified

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25	4	3						7
25-29	1	3	1					5
30-34	7	5	1					13
35-39	5	3	4					12
40-44	5	1	1	1	1			9
45-49	6	6	4	3	2	1		22
50-54	8	19	10	6	1			44
55-59	4	9	17	17	4	2	4	57
60-64	2	1	9	14	9	4	6	45
65+			3	4	8	2	4	21
Total	42	50	50	45	25	9	14	235

BOE Certified

Age	Years of Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
< 25	2							2
25-29	13	4						17
30-34	11	38	8					57
35-39	11	28	39	5				83
40-44	8	5	24	36	9			82
45-49	5	7	29	27	23	1		92
50-54	5	10	12	19	17	4	3	70
55-59	1	3	9	13	12	3	6	47
60-64			7	11	6	2	4	30
65+				1	5	1	4	11
Total	56	95	128	112	72	11	17	491

Section IV - Membership Data

C. Information on Members Receiving Benefits

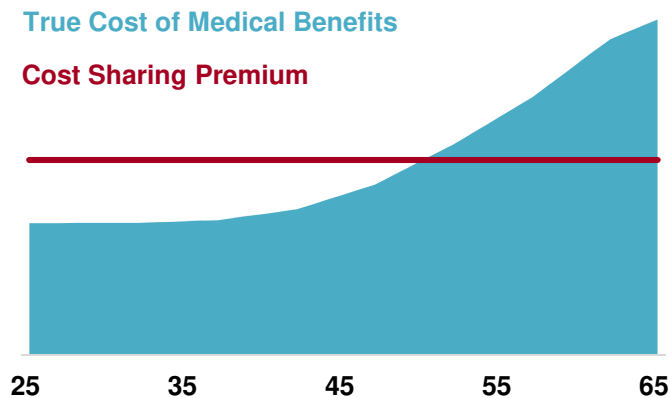
	As of July 1, 2017	As of July 1, 2019
Members Receiving Benefits		
Number		
Housing Authority	1	1
Town	56	53
GPOA	17	18
BOE Non-Certified	2	2
BOE Certified	<u>43</u>	<u>32</u>
Total	119	106
Average Age		
Housing Authority	81.9	83.9
Town	74.2	75.0
GPOA	64.6	66.3
BOE Non-Certified	63.4	63.2
BOE Certified	<u>65.5</u>	<u>66.1</u>
Total	69.6	70.8
Spouses/Dependents Receiving Benefits		
Number		
Housing Authority	0	0
Town	26	27
GPOA	12	12
BOE Non-Certified	1	0
BOE Certified	<u>10</u>	<u>4</u>
Total	49	43
Average Age		
Housing Authority	N/A	N/A
Town	72.5	72.9
GPOA	60.7	57.7
BOE Non-Certified	64.7	N/A
BOE Certified	<u>62.7</u>	<u>59.7</u>
Total	67.5	67.3

Section V - Healthcare Information

A. Introduction

In many cases, the cost sharing premium is lower than the true cost of providing the medical benefits, for two reasons:

- The cost sharing premium is usually a fixed amount such as a COBRA premium that does not take into account the age of the retiree and his/her dependents. Since medical costs generally increase with age, the cost sharing premium is often lower than the true cost of the medical benefits:



- The cost sharing premium is usually a blended rate that takes into account the cost of medical benefits for active employees as well as retirees. Medical costs are generally higher for retirees than for active employees of the same age. This means that, again, the cost sharing premium is often lower than the true cost of the medical benefits.

Because of these two factors, a retiree who is paying 100% of the cost sharing premium is most likely not paying 100% of the true cost of the medical benefits. This situation is known as an "implicit rate subsidy." GASB 74 and 75 require the plan sponsor to measure the liability for this subsidy; that is, the difference between the true cost of the medical benefits and the cost sharing premiums paid by the retiree. To do this, our valuation consists of several steps:

First, we calculate the liability for the true cost of medical benefits expected to be received by retirees and their dependents. This liability is based on factors developed by Milliman's health actuaries that reflect how the cost of medical benefits varies by age and gender, as well as the other assumptions discussed in Appendix B. We term this amount the "gross liability."

Next, we calculate the liability for the future premiums expected to be paid by the retiree for their own and their dependents' coverage. This liability is based on the current premium rates without adjustment for age or gender. It also is based on the terms of the Other Post-Employment Benefits Program – different retirees pay different percentages based on their union, date of retirement, age at retirement, and other factors. We term this amount the "offset liability."

Finally, the net liability for the Town is calculated as the difference between the gross liability and the offset liability.

Section V - Healthcare Information

B. Current Premiums

The annual medical premiums are shown below.

Pre-65 Medical Plan	Employee	Spouse	Effective Date
Police Officers	\$975.91	\$1,171.09	7/1/2019
Town	961.69	1,154.04	7/1/2019
BOE	866.18	1,039.42	7/1/2019
 Post-65 Medical Plan			
Medicare Eligible	166.97	166.97	7/1/2019
Non-Medicare Eligible	866.18	1,039.42	7/1/2019

Section V - Healthcare Information

C. Expected Healthcare Costs

Milliman's Health Cost Guidelines were used to develop the expected true cost of healthcare benefits by age and gender, separately for employees and spouses. Representative healthcare cost factors are shown in the table below. These factors were then applied to the plan's healthcare rates for the year beginning July 1, 2019 to arrive at the expected annual per capita claims costs for a 65-year-old, which are also shown below.

Town & Police

Age	Employee	Spouse
45	0.470323	0.485500
55	0.619954	0.670796
65	1.000000	1.000000
75	1.299883	1.291546
85	1.483168	1.462348

Age 65 per capita claims cost

Pre-Medicare

Town	\$22,639.08	\$20,825.57
Police	22,766.82	20,892.36

Medicare

Town	1,672.01	1,707.83
Police	1,669.88	1,703.07

BOE

Age	Employee	Spouse
45	0.553000	0.416068
55	0.668792	0.620821
65	1.000000	1.000000
75	1.438226	1.460712
85	1.920794	1.958956

Age 65 per capita claims cost

Pre-Medicare	19,835.54	19,531.68
Medicare	21,141.71	21,739.41

Appendix A - Actuarial Funding Method

The actuarial funding method used in the valuation of this Plan is known as the Entry Age Normal Method. The Actuarially Determined Contribution consists of three pieces: Normal Cost plus a Past Service Cost payment to gradually eliminate the Unfunded Accrued Liability plus Interest to reflect the timing of the contribution relative to the valuation date.

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 Accrued Liability 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 over a closed 30 year period starting July 1, 2007.

The Actuarial Value of Assets is determined by recognizing market gains and losses non-asymptotically over a five year period.

The long-range forecasts included in this report have been developed by assuming that members will terminate, retire, become disabled, and die according to the actuarial assumptions with respect to these causes of decrement, and that pay increases, cost of living adjustments, and so forth will likewise occur according to the actuarial assumptions. For those unions whose new employees are eligible to participate in this plan, members who are projected to leave active employment are assumed to be replaced by new active members with the same age, service, gender, and pay characteristics as those hired in the past few years.

Appendix B - Actuarial Assumptions

Each of the assumptions used in this valuation was set based on a formal study of the Town of Glastonbury Retirement Income Plan's experience for the period July 1, 2008 to June 30, 2013, 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. Please see the report dated September 5, 2014 for details concerning the applicable information, analysis, and conclusions from the formal study of the Town of Glastonbury Retirement Income Plan's 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.

Discount Rate	6.50% (Prior: 6.625%)
Inflation Rate	2.70%
Amortization Growth Rate	3.50%
Medical Trend	5.30% - 4.50% over 52 years (Prior: 5.48% - 4.50% over 56 years)

Salary Scale

Teachers and Administrators#:

Service	Rate
0-1	6.50%
2-9	6.25%
10-11	5.50%
12-14	5.00%
15	4.75%
16	4.50%
17	4.25%
18	4.00%
19	3.75%
20	3.50%
21+	3.25%

All Others:

Graded salary growth with an ultimate rate of 3.00%.

Age	Police	Town/BOE
25	6.50%	6.25%
30	6.00%	5.75%
35	4.75%	4.50%
40	3.75%	4.25%
45	3.50%	4.00%
50	3.50%	3.50%
55	3.25%	3.25%
60+	3.00%	3.00%

Appendix B - Actuarial Assumptions

Mortality

Teachers and Administrators[#]: For healthy retirees and beneficiaries, the RPH-2014 White Collar Mortality table with employee and annuitant rates blended from ages 50 to 80 projected to the year 2020 using the BB improvement scale and further adjusted to grade in increases (5% for females and 8% for males) to rates over age 80. This assumption includes a margin for mortality improvement beyond the valuation date.

Police: PubS-2010 Mortality Table with generational projection per the MP-2014 ultimate scale, with employee rates before benefit commencement and healthy or disabled annuitant rates after benefit commencement. This assumption includes a margin for improvements in longevity beyond the valuation date.

All Others: PubG-2010 Mortality Table with generational projection per the MP-2014 ultimate scale, with employee rates before benefit commencement and healthy or disabled annuitant rates after benefit commencement. This assumption includes a margin for improvements in longevity beyond the valuation date.

Prior:

Teachers and Administrators[#]: RP-2000 Combined Healthy Mortality Table for males and females projected forward 19 years using scale AA, with a two-year age setback.

Police and All Others: RP-2000 Healthy Mortality Table for males and females with full generational projection per Scale AA, with separate tables for active employees and annuitants. This assumption includes a margin for mortality improvement beyond the valuation date.

Appendix B - Actuarial Assumptions

Turnover

Teachers and Administrators[#]: rates based on gender and length of service for the first ten years and gender and age thereafter:

Service	Male	Female
0-1	14.00%	12.00%
1-2	11.00%	10.50%
2-3	8.00%	8.75%
3-4	6.50%	7.50%
4-5	4.50%	6.75%
5-6	3.50%	6.00%
6-7	3.00%	5.25%
7-8	2.75%	4.75%
8-9	2.50%	4.25%
10+	2.50%	4.00%

Age	Male	Female
25	1.50%	4.00%
35	1.50%	3.50%
45	1.59%	1.50%
55	3.44%	2.50%

Police: None

All Others:

Age	Rate
20	13.95%
25	10.20%
30	7.58%
35	5.93%
40	4.88%
45	4.13%
50	3.38%
55	2.33%
60+	0.00%

Appendix B - Actuarial Assumptions

Retirement

Teachers and Administrators[#]: rates based on age, eligibility for pension benefits, and gender:

Age	Unreduced		Proratable		Reduced	
	Male	Female	Male	Female	Male	Female
50	27.50%	27.50%			1.00%	1.00%
51	27.50%	27.50%			1.00%	1.25%
52	27.50%	27.50%			1.00%	1.75%
53	27.50%	27.50%			2.00%	2.25%
54	27.50%	27.50%			3.00%	2.75%
55	38.50%	27.50%			4.00%	4.75%
56	38.50%	27.50%			6.00%	6.25%
57	38.50%	27.50%			7.00%	6.75%
58	38.50%	27.50%			8.00%	7.25%
59	38.50%	27.50%			11.00%	8.50%
60	22.00%	27.50%	6.00%	5.50%		
61	25.30%	27.50%	6.00%	6.50%		
62	25.30%	27.50%	9.00%	7.50%		
63	27.50%	27.50%	11.00%	7.50%		
64	27.50%	27.50%	10.00%	8.00%		
65	36.30%	32.50%	13.00%	12.50%		
66-67	27.50%	32.50%	20.00%	12.50%		
68	27.50%	32.50%	20.00%	12.00%		
69	27.50%	32.50%	30.00%	14.50%		
70-73	100.00%	32.50%	30.00%	14.50%		
74-79	100.00%	32.50%	30.00%	18.00%		
80	100.00%	100.00%	100.00%	100.00%		

Housing Authority, Town, Dispatchers and Animal Control Officers:

Age	Rate
60	3%
61-64	15%
65	50%
66-69	30%
70	100%

BOE Non-Certified:

Age	Rate
63-64	10%
65	50%
66-69	30%
70	100%

Appendix B - Actuarial Assumptions

Retirement

Police:

Hired before January 1, 2013:

Service	Rate
20	10%
21	15%
22	30%
23-24	15%
25-29	30%
30	100%

Minimum assumed retirement age is 50. 100% assumed to retire at age 60.

Hired on or after January 1, 2013:

Service	Rate
25	50%
26-29	20%
30	100%

Minimum assumed retirement age is 50. 100% assumed to retire at age 60.

Disability

Teachers and Administrators[#]: Rates based on age and gender:

Age	Male	Female
20	0.0341%	0.0500%
30	0.0341%	0.0410%
40	0.0536%	0.0720%
50	0.2438%	0.2630%
60	0.9604%	0.5000%

All Others:

50% of the 1985 Disability Pension Table Class 1 Rates.

Appendix B - Actuarial Assumptions

Future Retiree Coverage Current active members are assumed to elect coverage at retirement as follows:

Group	Percent
Teachers and Administrators	90%
BOE Custodians and Non-Contract Personnel	10%
BOE (Others)	50%
GPOA, Housing Authority and Town	58%

Future Dependent Coverage Current active members are assumed to elect dependent coverage at retirement as follows. All female spouses are assumed to be three years younger than males.

Group	Male	Female
Teachers	30%	30%
Administrators	40%	40%
BOE (Others)	25%	25%
GPOA, Housing Authority and Town	Pre-65: 40%	Pre-65: 40%
	Post-65: 50%	Post-65: 50%

Future Post-65 Coverage **Teachers and Administrators:** 100% of current actives and pre-65 retirees are assumed to either be Medicare eligible or enroll in retiree health coverage through the Connecticut State Teachers' Retirement System at age 65.

BOE Non-Certified: No current actives and pre-65 retirees are assumed to continue coverage beyond age 65.

All Others: All current actives and pre-65 retirees are assumed to continue coverage beyond age 65.

Valuation of Dental Benefits It is assumed that there is no implicit rate subsidy associated with dental benefits.

Valuation of Benefits for Children Benefits attributed to children have been excluded from this valuation for all groups, as they were determined to be de minimis.

Certain actuarial demographic assumptions for Teachers and Administrators are based on the assumptions used in the June 30, 2018 valuation of the Connecticut State Teachers' Retirement System.

Appendix C - Summary of Plan Provisions

This summary is intended only to describe our understanding of the essential features of the benefits that will be provided to future retirees based on copies of bargaining agreements, applicable personnel rules and the benefits being currently provided to retired members. All eligibility requirements and benefit amounts shall be determined in strict accordance with the relevant plan documents. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

Eligibility

BOE Certified (Teachers and Administrators):

Employees who retire from Glastonbury Public Schools are eligible for retiree medical and dental benefits. Administrators must have at least 15 years of continuous service with Glastonbury Public Schools, and Teachers must attain at least the earliest of age 60 with 10 years of service, any age with 25 years of service, or age 55 with 20 years of service.

GPOA (Police, Dispatchers and Animal Control Officers):

Police Officers who separate their service with the Town on or after reaching Normal Retirement Age, and who are at least age 50 with at least 10 years of continuous service, are eligible for retiree medical benefits. Normal Retirement is the earlier of 25 years of service (20 years of service, if hired prior to January 1, 2013) or age 55.

Dispatchers and **Animal Control Officers** who separate their service with the Town, and who are at least age 55 with at least 10 years of continuous service, are eligible for retiree medical benefits.

Housing Authority and Town (AFSCME, IOUE and Non-Affiliated):

Employees who separate their service with the Town, and who are at least age 55 with at least 10 years of continuous service, are eligible for retiree medical and dental benefits.

BOE Non-Certified (Secretaries, Paraprofessionals, Nurses, Custodians and Non-Contract Personnel):

Employees who retire from Glastonbury Public Schools are eligible for retiree medical and dental benefits. Nurses and Non-Contract Personnel must have at least 15 years of continuous service with Glastonbury Public Schools.

Appendix C - Summary of Plan Provisions

Cost Sharing

Teachers:

Retirees pay 100% of the premium less \$1,320 annual Connecticut Teachers' Retirement Board (TRB) subsidy until they reach age 65 (subsidy is pre-65 only). Retiree health insurance coverage ends at age 65.

Administrators:

If retired before July 1, 1991:

The Board pays \$1,000 per year towards the cost of the retiree health insurance premium, and the retiree pays the remainder of the cost. The Board payment and retiree health insurance coverage ends at age 65.

If retired on or after July 1, 1991:

The Board pays \$1,250 per year towards the cost of the retiree health insurance premium, and the retiree pays the remainder of the cost. The Board payment and retiree health insurance coverage ends at age 65.

If retired on or after July 1, 2018:

The Board pays \$2,000 per year towards the cost of the retiree health insurance premium, and the retiree pays the remainder of the cost. The Board payment and retiree health insurance coverage ends at age 65.

BOE Superintendent:

In addition to the benefits provided to Administrators, the Superintendent and spouse shall be provided with health insurance at the Board's expense less any TRB contribution for a period of 10 years (120 months for two people or 240 months for one person). If one of the two should die prior to reaching 120 months, the other will continue to receive this benefit for twice the remaining number of months less any TRB contribution. This benefit has been excluded from this valuation, as it was determined to be de minimis.

Appendix C - Summary of Plan Provisions

Cost Sharing

Police Officers:

If hired before January 1, 2013

A retiree who was employed prior to January 1, 2013 shall be eligible to participate in the Anthem PPO, ConnectiCare Flex or ConnectiCare HMO or equal plans. The retiree's co-pay shall be 30% of the benchmark plan (defined as the plan with the lowest premium cost of the plans described in Section 29.1(a) of the Glastonbury Police Officers Association agreement for the period June 30, 2010 - June 30, 2016). If the retiree chooses any of the other available health insurance plans, other than the benchmark plan, the retiree in addition shall pay the difference between the total benchmark plan premium and the higher premium of any alternative health plan selected. Spousal coverage does not continue after the death of the retiree.

The above benefits shall exclude dental coverage.

If hired after January 1, 2013

Employees hired after January 1, 2013 shall be eligible to participate in the Anthem PPO, ConnectiCare Flex or ConnectiCare HMO or equal plans. The retiree's co-pay shall be sixty six and two thirds percent (66-2/3%) of the benchmark plan. If the retiree chooses any of the other available health insurance plans, other than the benchmark plan, the retiree in addition shall pay the difference between the total benchmark plan premium and the higher premium of any alternative health plan selected. Spousal coverage does not continue after the death of the retiree.

The above benefits shall exclude dental coverage.

For all retirees

At age 65, the Town will provide to bargaining unit members the Anthem Low Option Medical Supplement Plan. The cost of any insurance plan in excess of the Anthem Low Option Plan shall be paid in full by the retiree.

Appendix C - Summary of Plan Provisions

Cost Sharing

Dispatchers and Animal Control Officers:

Retirees ages 55-64 pay 100% of the premium until they reach age 65. At age 65, the Town will provide to bargaining unit members the Anthem Low Option Medical Supplement Plan. The cost of any insurance plan in excess of the Anthem Low Option Plan shall be paid in full by the retiree.

The above benefits shall exclude dental coverage.

Housing Authority and Town (IOUE and Non-Affiliated):

Retirees ages 55-64 pay 100% of the premium until they reach age 65. At age 65, the Town will provide Blue Cross 65 with the Town paying 100% for such coverage.

Town (AFSCME):

Retirees ages 55-64 pay 105% of the premium until they reach age 65. At age 65, the Town will provide Blue Cross 65 with the Town paying 100% for such coverage.

BOE Non-Certified (Secretaries, Paraprofessionals, Nurses, Custodians and Non-Contract Personnel):

Retirees pay 100% of the premium until they reach age 65. Retiree health insurance coverage ends at age 65.

Appendix D - Glossary

Actuarial Cost Method - This is a procedure for determining the Actuarial Present Value of Benefits and allocating it to time periods to produce the Actuarial Accrued Liability and the Normal Cost.

Accrued Liability - This is the portion of the Actuarial Present Value of Benefits attributable to periods prior to the valuation date by the Actuarial Cost Method (i.e., that portion not provided by future Normal Costs).

Actuarial Assumptions - With any valuation of future benefits, assumptions of anticipated future events are required. If actual events differ from the assumptions made, the actual cost of the plan will vary as well. Some examples of key assumptions include the interest rate, salary scale, and rates of mortality, turnover and retirement.

Actuarial Present Value of Benefits - This is the present value, as of the valuation date, of future payments for benefits and expenses under the Plan, where each payment is: a) multiplied by the probability of the event occurring on which the payment is conditioned, such as the probability of survival, death, disability, termination of employment, etc.; and b) discounted at the assumed interest rate.

Actuarial Value of Assets - This is the value of cash, investments and other property belonging to the plan, typically adjusted to recognize investment gains or losses over a period of years to dampen the impact of market volatility on the Actuarially Determined Contribution.

Actuarially Determined Contribution (“ADC”) - This is the employer’s periodic contributions to a defined benefit plan, calculated in accordance with actuarial standards of practice.

Attribution Period - The period of an employee’s service to which the expected benefit obligation for that employee is assigned. The beginning of the attribution period is the employee’s date of hire and costs are spread across all employment.

Interest Rate - This is the long-term expected rate of return on any investments set aside to pay for the benefits. In a financial reporting context (e.g., GASB 68) this is termed the Discount Rate.

Normal Cost - This is the portion of the Actuarial Present Value of Benefits allocated to a valuation year by the Actuarial Cost Method.

Past Service Cost - This is a catch-up payment to fund the Unfunded Accrued Liability over time (generally 10 to 30 years). A closed amortization period is a specific number of years counted from one date and reducing to zero with the passage of time; an open amortization period is one that begins again or is recalculated at each valuation date. Also known as the Amortization Payment.

Return on Plan Assets - This is the actual investment return on plan assets during the fiscal year.

Unfunded Accrued Liability - This is the excess of the Accrued Liability over the Actuarial Value of Assets.