



**TOWN OF GLASTONBURY
OTHER POST-EMPLOYMENT BENEFITS PROGRAM**

July 1, 2017 Actuarial Valuation

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Certification

We have performed an actuarial valuation of the Town of Glastonbury Other Post-Employment Benefits Program as of July 1, 2017. The results of this valuation, along with supporting data, are set forth in the following report.

The ultimate cost of an 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 any plan assets. The principal purpose of this report is to set forth an actuarial determination of plan liabilities. In addition, this report provides:

- Information needed to meet disclosure requirements
- Review of plan experience since the last 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 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. No attempt is being made to offer any accounting opinion or advice. The calculations reported herein have been made on a basis consistent with our understanding of the plan provisions. Additional determinations may be needed for other purposes.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law or accounting standards. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

In preparing this report, we relied on employee census data, asset information, claims and premium information as of the valuation date, furnished by the Town. We performed a limited review of the information 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 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

In our opinion, each assumption used is individually reasonable (taking into account the experience of the plan and reasonable expectations) and, in combination, offer our best estimate of anticipated experience under the plan. On the basis of the foregoing, we hereby certify that to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board and the Code of Professional Conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries.

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.

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

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

August 24, 2018



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Discussion of Experience

This valuation reflects a number of changes relative to the July 1, 2015 valuation:

Demographic Changes from 2015 to 2017

From July 1, 2015 to July 1, 2017, the overall membership decreased from 1,055 to 1,029. The total number of active members decreased from 906 to 861, and the total number of retirees and spouses of retirees increased from 149 to 168.

The average age of active members increased from 48.2 to 48.4, and the average age of retired members decreased from 70.6 to 69.6.

Actuarial Assumptions and Method Changes

Discount Rate: We lowered the discount rate from 7.00% to 6.625% to better reflect the long-term expected investment return on OPEB trust assets. The change in discount rate increased the Accrued Liability by about \$810,000 and increased the Actuarially Determined Contribution by \$65,000.

Teachers and Administrators: Certain actuarial demographic assumptions for Teachers and Administrators are based on the assumptions used in the June 30, 2016 valuation of the Connecticut State Teachers' Retirement System. Our valuation reflects the applicable assumption changes made in the June 30, 2016 valuation. The change in this assumption decreased the Accrued Liability by about \$94,000 and decreased the Actuarially Determined Contribution by \$18,000.

We changed the actuarial cost method from Projected Unit Credit to Entry Age Normal. The Entry Age Normal cost method is required starting in FY 2017 for financial reporting purposes per GASB 75; making this change provides the Town with a single set of results for all plan liability reporting purposes. The change in actuarial cost method increased the Accrued Liability by about \$1,348,000 and increased the Actuarially Determined Contribution by \$43,000.

In order to minimize the impact of market fluctuations on the contribution level, we implemented an Actuarial Value of Assets that recognizes gains and losses over a five year period. We also introduced an expense assumption to reflect that certain administrative expenses are being paid out of the OPEB trust. These changes increased the Actuarially Determined Contribution by \$12,000.

The Valuation Process

The process of determining the liability for OPEB benefits is based on many assumptions about future events. The key actuarial assumptions are:

Turnover and retirement rates: How likely is it that an employee will qualify for post-employment benefits and when will they start?

Medical trend and claims costs assumptions: When an employee starts receiving post-employment benefits many years from now, how much will be paid each year for the benefits and how rapidly will the costs grow?

Mortality assumption: How long is a retiree likely to receive the benefits?

Discount rate assumption: What is the present value of those future benefit payments in terms of today's dollars?

Since the liability is being recognized over the employee's whole career with the Town, the present value is divided into three pieces: the part that is attributed to past years (the "Accrued Liability" or "Past Service Liability"), the part that is being earned this year (the "Normal Cost"), and the part that will be earned in future years (the "Future Service Liability").

Once the Accrued Liability and the Normal Cost have been calculated, the next step is to determine an annual contribution. This consists of three pieces:

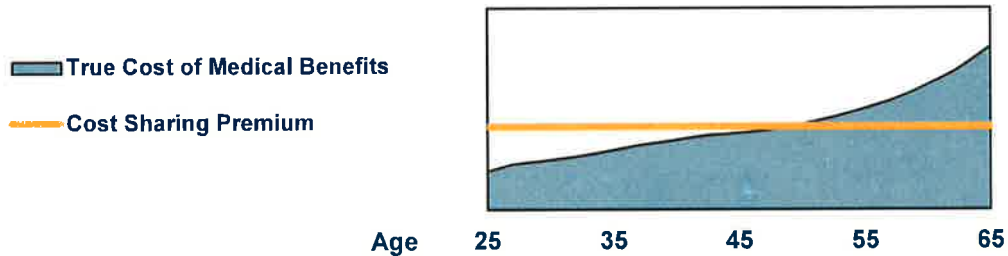
- Normal Cost – because the benefits earned each year should be paid for each year
- Past Service Cost – a catch-up payment to fund any Unfunded Accrued Liability over time
- Interest – adjusts for the time lag between the valuation date and the start of the fiscal year

The final step is to keep track going forward of how much of the contribution is actually paid. There is no requirement to actually fund these benefits, but the cumulative deficiency must be disclosed on the Town's financial statements. In addition, the Discount Rate used to calculate the liabilities must reflect the expected investment income of whatever funds are set aside to prefund the benefits; if there is no prefunding then the Discount Rate will be much lower and the liabilities significantly higher than if the benefits are prefunded.

Implicit Rate Subsidies

As part of the Other Post-Employment Benefits Program, there are situations where the cost is borne partly or entirely by retirees. In most cases, the premium that is used to split the cost 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 on the prior page. 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 retiree medical 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.

Market Value of Assets

This valuation reflects assets that are managed through irrevocable OPEB trusts. While other assets may be used to meet future OPEB liabilities, only those funds that are contributed to an appropriate trust may be reflected in the calculation of the Actuarially Determined Contribution.

Market Value as of July 1, 2015	\$2,486,174
Employer Contributions	1,522,386
Employee Contributions	0
Investment Income	29,180
Benefit Payments	(799,241)
Investment Expense	0
Administrative Expense	(20,192)
Market Value as of July 1, 2016	3,218,308
Employer Contributions	925,241
Employee Contributions	0
Investment Income	372,062
Benefit Payments	(696,124)
Investment Expense	0
Administrative Expense	(3,897)
Market Value as of July 1, 2017	3,815,590
Approximate Rate of Return for FYE 2016	0.32%
Approximate Rate of Return for FYE 2017	11.05%

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

Determination of Market Asset (Gain)/Loss

In order to minimize the impact of market fluctuations on the contribution level, we use an Actuarial Value of Assets that recognizes gains and losses over a five year period. The market (gains)/losses since the previous valuation are determined below.

Expected Market Value of Assets as of July 1, 2016	
Market Value of Assets as of July 1, 2015	\$2,486,174
Employer Contributions	1,522,386
Employee Contributions	0
Benefit Payments	(799,241)
Administrative Expense	(20,192)
Investment Expense	0
Expected Investment Return Based on 7.00% Interest	199,101
Expected Market Value of Assets as of July 1, 2016	3,408,421
Actual Market Value of Assets as of July 1, 2016	3,218,308
Market (Gain)/Loss	190,113
2016 Market Rate of Return	0.32%
Expected Market Value of Assets as of July 1, 2017	
Market Value of Assets as of July 1, 2016	\$3,218,308
Employer Contributions	925,241
Employee Contributions	0
Benefit Payments	(696,124)
Administrative Expense	(3,897)
Investment Expense	
Expected Investment Return Based on 7.00% Interest	233,311
Expected Market Value of Assets as of July 1, 2017	3,680,736
Actual Market Value of Assets as of July 1, 2017	3,815,590
Market (Gain)/Loss	(134,854)
2017 Market Rate of Return	11.05%

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

Development of Actuarial Value of Assets

The Actuarial Value of Assets as of July 1, 2017 is determined below.

1. Market Value of Assets as of July 1, 2017		3,815,590
2. Market (Gains)/Losses		
06/30/2017		(134,854)
06/30/2016		N/A
06/30/2015		N/A
06/30/2014		N/A
3. Delayed Recognition of Market (Gains)/Losses:		
06/30/2017	80% Deferred	(107,883)
06/30/2016	60% Deferred	N/A
06/30/2015	40% Deferred	N/A
06/30/2014	20% Deferred	N/A
Total Amount Deferred		(107,883)
4. Actuarial Value of Assets as of July 1, 2017: (1) + (3)		3,707,707

Summary of Liabilities

We have calculated the Accrued Liability separately for five groups of Town employees, who are eligible for different OPEB benefits. We have broken the accrued liability for each group 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						
Employees under age 65	\$13,258	\$253,989	\$1,023,941	\$31,693	\$3,312,737	\$4,635,618
Employees over age 65	100,490	1,592,213	438,238	0	931,126	3,062,067
Dependents under age 65	4,026	119,200	395,173	7,075	421,612	947,086
Dependents over age 65	<u>32,842</u>	<u>514,148</u>	<u>123,765</u>	<u>0</u>	<u>193,274</u>	<u>864,029</u>
Total	150,616	2,479,550	1,981,117	38,768	4,858,749	9,508,800
Current retired members						
Employees under age 65	0	78,766	747,801	20,593	414,520	1,261,680
Employees over age 65	20,724	1,518,137	517,243	0	4,642,117	6,698,221
Dependents under age 65	0	57,598	681,836	0	96,285	835,719
Dependents over age 65	<u>0</u>	<u>486,610</u>	<u>263,866</u>	<u>0</u>	<u>36,625</u>	<u>787,101</u>
Total	20,724	2,141,111	2,210,746	20,593	5,189,547	9,582,721
Total Accrued Liability	171,340	4,620,661	4,191,863	59,361	10,048,296	19,091,521

The following presents information regarding how sensitive the Accrued Liability is to changes in either the discount rate or the trend rate.

Discount Rate Sensitivity	1% Decrease 5.625%	Baseline 6.625%	1% Increase 7.625%
	21,530,056	19,091,521	17,040,643
Trend Rate Sensitivity	1% Decrease	Baseline	1% Increase
	16,786,578	19,091,521	21,898,416

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 time lag between the valuation date and the fiscal year.

The amortization period is 30 years starting in FY 2009. The amortization method produces annual payments that will increase by 3.50% annually. On this basis, the ADC is determined as follows:

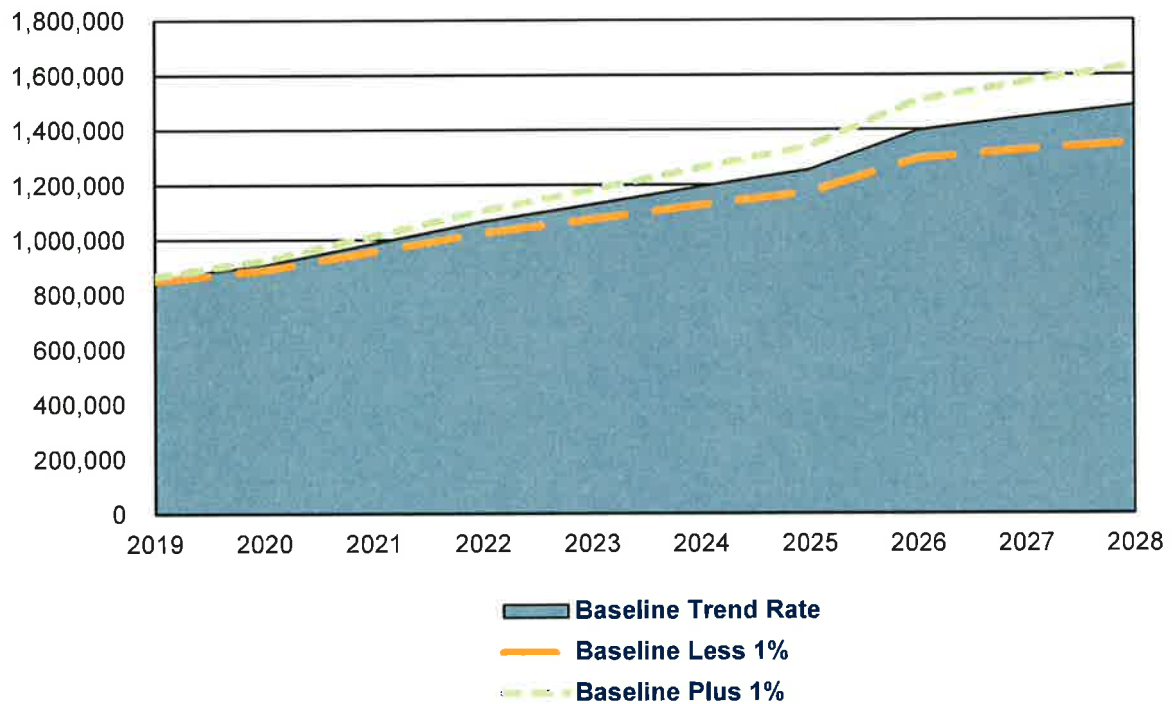
	Housing Authority	Town	GPOA	BOE Non- Certified	BOE Certified	Total
Accrued Liability	\$171,340	\$4,620,661	\$4,191,863	\$59,361	\$10,048,296	\$19,091,521
Actuarial Value of Assets	65,623	1,285,714	924,022	73,865	1,358,483	3,707,707
Unfunded Accrued Liability	105,717	3,334,947	3,267,841	(14,504)	8,689,813	15,383,814
Amortization Period	20	20	20	20	20	20
Amortization Growth Rate	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Past Service Cost	6,910	217,980	213,594	(948)	567,987	1,005,523
Total Normal Cost	4,606	108,000	139,941	2,167	250,409	505,123
Employee Contributions	0	0	0	0	0	0
Expenses	71	1,387	997	80	1,465	4,000
Net Normal Cost	4,677	109,387	140,938	2,247	251,874	509,123
Interest	768	21,688	23,488	86	54,316	100,346
ADC for FY 2019	12,355	349,055	378,020	1,385	874,177	1,614,992
Expected Benefit Payouts	5,600	216,118	216,423	10,972	410,912	860,025
Net Budget Impact	6,755	132,937	161,597	(9,587)	463,265	754,967

The Actuarially Determined Contribution is assumed to be paid at the beginning of the Fiscal Year.

Projected Payouts

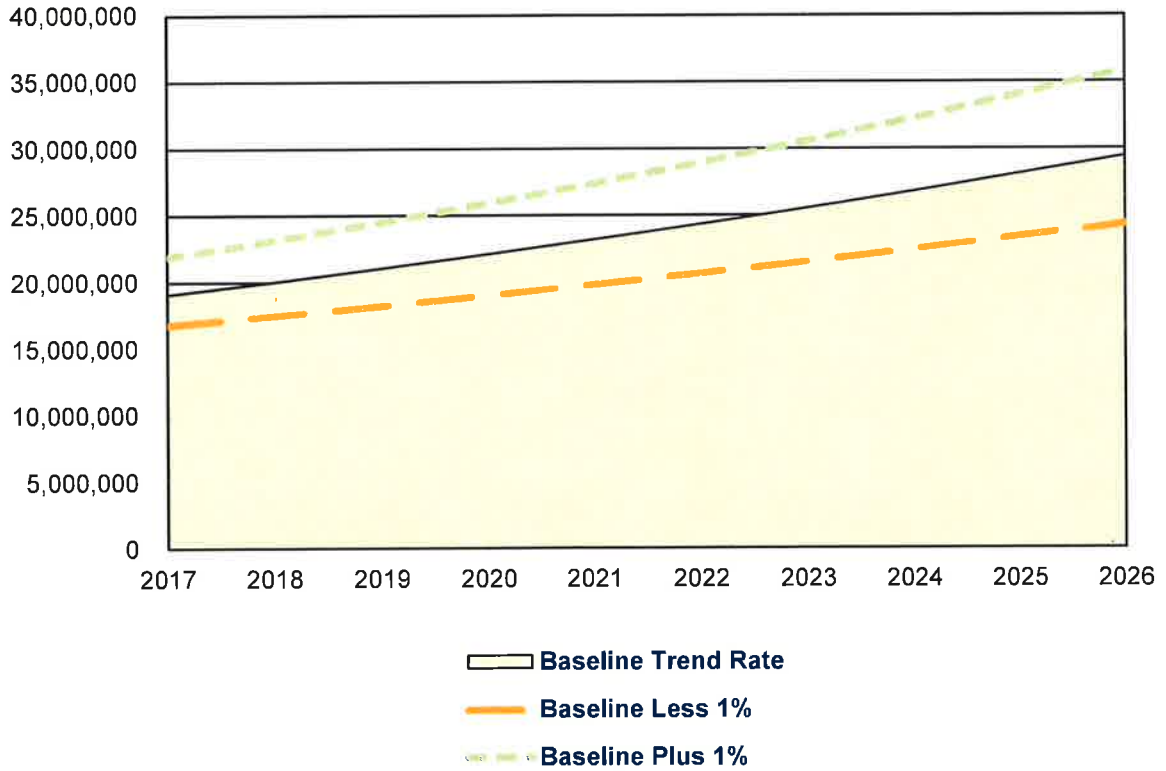
The table and graph below show the expected annual payments for OPEB benefits for the next 10 years.

Fiscal Year	Baseline Less 1%	Baseline Trend Rate	Baseline Plus 1%
2019	\$852,093	\$860,025	\$867,957
2020	891,113	907,975	924,998
2021	958,966	986,470	1,014,494
2022	1,026,150	1,065,668	1,106,318
2023	1,075,907	1,127,976	1,182,048
2024	1,127,233	1,193,093	1,262,138
2025	1,174,091	1,254,554	1,339,714
2026	1,294,950	1,396,858	1,505,742
2027	1,328,247	1,446,360	1,573,761
2028	1,354,386	1,489,025	1,635,632



Projected Liabilities

The graph below shows how the Town's accrued liability for OPEB benefits is expected to grow over the next 10 years.



History of Funding Progress

(\$ 000s)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Accrued Liability (b)	Unfunded Accrued Liability (UAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAL as a Percentage of Covered Payroll ((b - a) / c)
7/1/2007	\$0	\$12,880	\$12,880	0%	N/A	N/A
7/1/2009	228	14,286	14,058	2%	N/A	N/A
7/1/2011	537	16,558	16,021	3%	62,606	26%
7/1/2013	1,405	15,478	14,073	9%	64,192	22%
7/1/2015	2,486	14,156	11,670	18%	68,158	17%
7/1/2017	3,708	19,092	15,384	19%	67,021	23%

History of Employer Contributions

(\$ 000s)

Year Ended June 30	Actuarially Determined Contribution	Actual Contribution Made	Percentage Contributed
2009	\$1,151	\$768	66.7%
2010	1,212	776	64.0%
2011	1,264	814	64.4%
2012	1,330	1,220	91.7%
2013	1,478	1,141	77.2%
2014	1,556	1,088	69.9%
2015	1,528	1,382	90.4%
2016	1,634	1,522	93.1%
2017	1,321	925	70.0%
2018	1,393	TBD	TBD
2019	1,615	TBD	TBD

Summary of Census Data

The following were included in our analysis based on information provided as of July 1, 2017 by the Town.

	Housing Authority	Town	GPOA	BOE Non- Certified	BOE Certified	Total
Number of members						
Active	8	149	53	194	457	861
Retired members	1	56	17	2	43	119
Spouses of retirees	0	26	12	1	10	49
Total	9	231	82	197	510	1,029
Average age						
Active	57.0	51.6	41.2	54.2	45.7	48.4
Retired members	82.0	74.1	64.6	63.5	65.7	69.6
Average retirement age						
Active	67.9	62.1	55.5	64.4	60.1	61.2
Retired members	65.0	63.0	54.8	61.0	62.3	61.6
Expected lifetime						
Active [to retirement]	10.9	10.6	14.2	10.2	14.4	12.8
Retired [lifetime]	9.1	13.7	21.2	22.7	22.0	17.9

The retiree census data excludes dental-only retired members and their spouses who are paying 100% of the premium. It is assumed that there is no implicit rate subsidy associated with these benefits.

Where complete census data was not available, we have made assumptions which we believe to be reasonable.

Current Premiums

Based on information provided by the Town regarding current plan elections, the following weighted average blended actual premiums were used:

2017 - 2018 Monthly Premiums		Employee	Spouse
Medical - Police Officers	Pre-65	\$755.75	\$901.23
	Post-65	166.97	166.97
Medical - Town	Pre-65	749.94	893.40
	Post-65	166.97	166.97
Medical - BOE		750.98	901.17

Notes:

- Town:

Pre-65: Retiree has the option to select one of the following plans:

- Medical: Anthem Century Preferred PPO, Anthem HDHP, ConnectiCare Flex POS, ConnectiCare HMO, ConnectiCare HDHP.

Post-65: Retiree has the option to select one of the following medical plans:

Anthem Blue Cross/Blue Shield Low Option/Plan 81, High Option/Plan 81, Plan F; ConnectiCare Medicare Supplement Plan.

- BOE:

Retiree has the option to select one of the following plans:

- Medical: Anthem Century Preferred PPO, Anthem BlueCare HMO, Anthem HDHP, ConnectiCare HMO, ConnectiCare HDHP.

Expected Healthcare Costs

Milliman's Health Cost Guidelines were used to develop the expected true cost of health care benefits by age. Representative health care costs (per person per month) are shown below.

Age	Town		Police	
	Employee	Spouse	Employee	Spouse
40	\$630	\$578	\$630	\$577
45	692	652	691	650
50	773	765	772	763
55	912	901	911	899
60	1,128	1,081	1,127	1,078
65	139	142	139	142
70	161	164	160	163
75	181	184	181	183
80	197	199	197	198

Age	BOE (Medicare Eligible)		BOE (Non-Medicare Eligible)	
	Employee	Spouse	Employee	Spouse
40	\$749	\$502	\$749	\$502
45	792	587	792	587
50	849	716	849	716
55	958	876	958	876
60	1,146	1,085	1,146	1,085
65	N/A	N/A	1,528	1,571
70	N/A	N/A	1,838	1,905
75	N/A	N/A	2,197	2,295
80	N/A	N/A	2,555	2,679

It is assumed that there is no implicit rate subsidy associated with dental benefits. Unadjusted age premium rates were used to value these benefits.

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. The statement assumes a closed group of employees and other participants unless otherwise stated; that is, no new entrants are assumed. Six methods are permitted under GASB 45 – Unit Credit, Entry Age Normal, Attained Age, Aggregate, Frozen Entry Age, and Frozen Attained Age. Entry Age Normal is required under GASB 75.

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 discount rate, medical cost inflation, and rates of mortality, turnover and retirement.

Actuarial Present Value of Benefits - This is the value, as of the applicable 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 discount rate.

Actuarial Value of Assets - This is the value of cash, investments and other property belonging to the Plan, as used by the actuary for the purpose of an Actuarial Valuation. Gains and losses are recognized over a five year period in order to minimize the impact of market fluctuations on the contribution.

Amortization Payment - This is the amount of the contribution required to pay interest on and to amortize over a given period the Unfunded Actuarial Accrued Liability. 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 actuarial valuation date.

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

Attribution Period - The period of an employee's service to which the expected postretirement 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.

Benefit Payments - The monetary or in-kind benefits or benefit coverage to which participants may be entitled under a post-employment benefit plan, including health care benefits and life insurance not provided through a pension plan.

Glossary

Discount Rate - GASB 75 requires that the interest rate used to discount future benefit payments back to the present day be based on the expected rate of return on any investments set aside to pay for these benefits. If no funds are set aside for this purpose, the discount rate is based on a municipal bond index at the measurement date.

Implicit Rate Subsidy - This is the excess of the expected health care cost per retired member over the gross premium charged for that coverage. In most cases, the gross premium charged to a retiree is less than the expected health care cost, since the premium is a blended average rate that does not fully reflect the above-average, increasing costs by age that apply during retirement.

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

Other Post-Employment Benefits (“OPEB”) - This refers to post-employment benefits other than pension benefits, including healthcare benefits regardless of the type of plan that provides them, and all other post-employment benefits provided separately from a pension plan, excluding benefits defined as termination benefits or offers.

Past Service Cost - This is a catch-up payment to fund the Unfunded Actuarial Accrued Liability over time (generally 10 to 30 years). Also known as the Amortization Payment.

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

Substantive Plan - The terms of the postretirement benefit plan as understood by an employer that provides postretirement benefits and the employees who render services in exchange for those benefits. The substantive plan is the basis for the accounting for the plan.

Trend Rate - This is the rate at which medical or dental costs are assumed to increase over time.

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

Actuarial Method

The actuarial funding method used is the **Entry Age Normal Cost Method**. Recommended annual contributions consist of three pieces: Normal Cost plus a payment towards the Unfunded Accrued Liability plus Interest to reflect the time lag between the valuation date and the fiscal year.

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.

Beginning July 1, 2017 the **Actuarial Value of Assets** is determined by recognizing market gains and losses over five years.

The **Unfunded Accrued Liability** is the Accrued Liability less the value of any plan assets.

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 6.625% (Prior: 7.00%)

Inflation Rate 2.70%

Amortization Growth Rate 3.50%

Medical Trend 5.48% - 4.50% over 56 years (Prior: 8.02% - 4.50% over 58 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%

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%

Actuarial Assumptions

Healthy Mortality

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. This assumption includes a margin for mortality improvement beyond the valuation date.

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.

Disabled Mortality

Teachers and Administrators[#]: RP-2000 Combined Healthy Mortality Table for males and females projected forward 19 years using Scale AA, with an eight-year age set forward. This assumption includes a margin for mortality improvement beyond the valuation date.

All Others: RP-2000 Disabled Mortality Table for males and females. This assumption does not include a margin for mortality improvement beyond the valuation date.

Actuarial Assumptions

Turnover

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

Current:

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%

Prior:

Service	Male	Female
0-1	14.00%	12.00%
1-2	8.50%	9.00%
2-3	5.50%	7.00%
3-4	4.50%	6.00%
4-5	3.50%	5.50%
5-6	2.50%	5.00%
6-7	2.40%	4.50%
7-8	2.30%	3.50%
8-9	2.20%	3.00%
9-10	2.10%	2.50%

Age	Male	Female
25	1.20%	3.50%
35	1.20%	3.50%
45	1.26%	1.30%
55	2.76%	1.60%

Police: None.

Actuarial Assumptions

Turnover

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%

Retirement

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

Current:

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%		

Actuarial Assumptions

Retirement

Prior:

	Unreduced	Proratable		Reduced	
50 – 51	27.50%	15.00%		2.00%	2.00%
52	27.50%	15.00%		2.50%	3.00%
53	27.50%	15.00%		3.00%	3.50%
54	27.50%	15.00%		4.00%	4.00%
55	38.50%	30.00%		4.50%	6.00%
56	38.50%	30.00%		6.00%	7.00%
57	38.50%	30.00%		9.00%	7.50%
58	38.50%	30.00%		10.00%	8.00%
59	38.50%	30.00%		11.00%	8.50%
60	22.00%	20.00%	6.00%	5.40%	
61	25.30%	22.50%	6.00%	7.20%	
62	25.30%	22.50%	15.00%	9.90%	
63-64	27.50%	22.50%	10.00%	7.20%	
65	36.30%	30.00%	20.00%	13.50%	
66	27.50%	30.00%	20.00%	10.80%	
67	27.50%	30.00%	20.00%	13.50%	
68	27.50%	30.00%	20.00%	10.80%	
69	27.50%	30.00%	35.00%	10.80%	
70-73	100.00%	40.00%	35.00%	10.80%	
74	100.00%	40.00%	35.00%	18.00%	
75 – 79	100.00%	40.00%	40.00%	18.00%	
80	100.00%	100.00%	40.00%	18.00%	

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.

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%

Actuarial Assumptions

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.

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: 60% of current actives and pre-65 retirees are assumed to enroll in retiree health coverage through the Connecticut State Teachers' Retirement System at age 65. 96% of current actives and pre-65 retirees are assumed to be Medicare eligible.

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.

Actuarial Assumptions

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, 2016 valuation of the Connecticut State Teachers' Retirement System; however, the Healthy and Disabled Mortality assumptions are based on the June 30, 2014 valuation of the Connecticut State Teachers' Retirement System.

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.

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.

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.

Police Officers:

Effective 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.

The above benefits shall exclude dental coverage.

Summary of Plan Provisions

Cost Sharing

Police Officers:

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.

The above benefits shall exclude dental coverage.

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.

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 (AFSCME, 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.

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.