



**TOWN OF WINDSOR
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 Windsor 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 of Windsor'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.

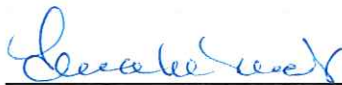
The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

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.

November 13, 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 901 to 854. The total number of active members decreased from 685 to 652 and the total number of retirees and spouses of retirees decreased from 216 to 202.

The average age of active members stayed the same at 46.1 and the average age of retired members increased from 69.2 to 70.1.

Changes in Plan Provisions

For active members in the Dispatchers Union hired after July 1, 2016, retirement eligibility to continue in the Town's Health Insurance Plan was modified from 55 years of age and 10 years of service to age 55 years of age and 15 years of service. Further, for spouse coverage, employees hired on or after July 1, 2016 must be at least 55 years of age with 30 years of service or age 65 years of age with at least 15 years of service. Previously, this was age 55 years of age with 30 years of service or age 65 with 10 years of service. This had no impact on the liability or Actuarially Determined Contribution since there were no hires in this group on or after July 1, 2016.

Assumption Changes

Medical Claims Costs: We updated the expected claims costs based on our analysis of the claims experience and premium information that was provided to us for this valuation. This change decreased the liability by \$15,500,000 and decreased the Actuarially Determined Contribution by \$1,560,000.

Medical inflation: The medical cost inflation trend used in this valuation was derived from the "Getzen Model" established by the Society of Actuaries for developing long term medical cost trends. This assumption was revised to an initial inflation rate of 7.27%, grading down to an ultimate inflation rate of 4.47% over a period of 70 years (Prior valuation: an initial inflation rate of 5.60% graded down to an ultimate inflation rate of 4.60% over a period of 62 years). The change in this assumption decreased the Accrued Liability by about \$1,687,000 and the Actuarially Determined Contribution by \$195,000.

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 \$111,000 and the Actuarially Determined Contribution by about \$27,000.

Actuarial Cost Method: We changed the actuarial cost method from Projected Unit Credit to Entry Age Normal. The Entry Age Normal cost method was required starting in FY 2017 for financial reporting purposes per GASB 74/75; 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 \$1,985,000 and the Actuarially Determined Contribution by \$275.

In order to minimize the impact of market fluctuations on the contribution level, we implemented an Actuarial Value of Assets that recognizes market 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 two changes increased the Actuarially Determined Contribution by \$4,600.

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 two pieces:

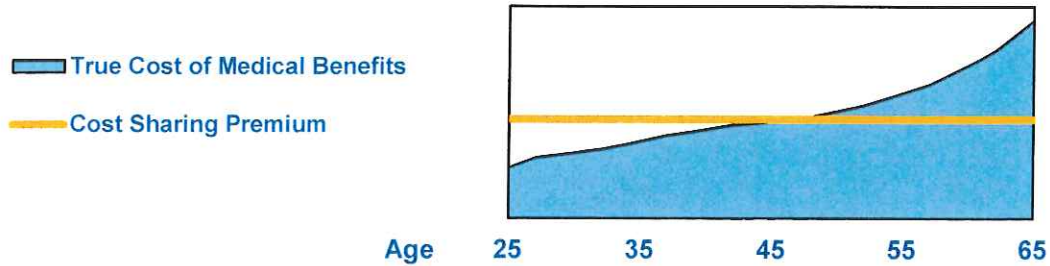
- Normal Cost – because the benefits earned each year should be paid for each year
- Past Service Cost – a catch-up payment to fund the Accrued Liability over time
- Interest – adjusts for the time lag between the valuation date and the start of the fiscal year

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

Market Value as of July 1, 2015	\$407,210
Market Value as of July 1, 2016	766,359
Employer Contributions	2,410,939
Income	122,469
Benefit Payments	(1,960,939)
Administrative Expenses	(989)
Market Value as of July 1, 2017	1,337,839
Approximate Rate of Return	12.36%

Actuarial Value of Assets

In order to minimize the impact of market fluctuations on the contribution level, we use an Actuarial Value of Assets that recognizes gains and losses over a five year period. The Actuarial Value of Assets as of July 1, 2017 is determined below.

1. Expected Market Value of Assets

a. Market Value of Assets as of July 1, 2016	\$766,359
b. Employer Contributions	2,410,939
c. Benefit Payments	(1,960,939)
d. Administrative Expenses	(989)
e. Expected Investment Return Based on 5%	<u>49,542</u>
f. Expected Market Value of Assets as of July 1, 2017	1,264,912

2. Actual Market Value of Assets as of July 1, 2017 1,337,839

3. Market Value (Gain)/Loss: (1f) - (2) (72,927)

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

Plan Year End	(Gain)/Loss	Percent Not Recognized	Amount Not Recognized
6/30/2017	(\$72,927)	80%	(\$58,342)
6/30/2016	N/A	60%	N/A
6/30/2015	N/A	40%	N/A
6/30/2014	N/A	20%	<u>N/A</u>
			(58,342)

5. Actuarial Value of Assets as of July 1, 2017 (2) + (4) 1,279,497

Milliman Actuarial Valuation

Summary of Liabilities

We have calculated the Accrued Liability separately for eleven 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.

	BOE Admin	Teachers	BOE Clerical	BOE Custodians	BOE Food Service	BOE Non-Union	BOE Nurses	Town Dispatchers	Town Admin	Teamsters	Police	Total
Current active members												
Employees under age 65	\$64,614	\$2,081,168	\$178,246	\$416,478	\$60,969	\$176,726	\$40,764	\$170,736	\$1,441,735	\$1,051,770	\$1,574,001	\$7,257,207
Employees over age 65	0	494,984	464,229	1,018,048	294,617	1,098,883	0	216,537	2,171,344	1,250,012	1,100,678	8,109,332
Dependents under age 65	23,372	589,357	1,546	72,857	77	8,069	0	7,917	294,643	446,688	1,351,340	2,795,866
Dependents over age 65	0	<u>205,188</u>	0	0	0	<u>73,331</u>	0	<u>27,424</u>	<u>463,391</u>	<u>423,927</u>	<u>838,471</u>	<u>2,031,732</u>
Total	87,986	3,370,697	644,021	1,507,383	355,663	1,357,009	40,764	422,614	4,371,113	3,172,397	4,864,490	20,194,137
Current retired members												
Employees under age 65	0	310,762	0	0	0	60,856	0	0	269,319	119,194	1,119,769	1,879,900
Employees over age 65	588,350	2,565,469	884,027	46,684	0	1,654,429	0	0	2,001,347	1,111,845	1,815,317	10,667,468
Dependents under age 65	0	106,846	0	0	0	65,050	0	0	282,671	174,829	1,125,210	1,754,606
Dependents over age 65	0	0	<u>86,801</u>	0	0	<u>243,269</u>	0	0	<u>823,806</u>	<u>553,654</u>	<u>1,938,755</u>	<u>3,646,285</u>
Total	588,350	2,983,077	970,828	46,684	0	2,023,604	0	0	3,377,143	1,959,522	5,999,051	17,948,259
Total Accrued Liability	676,336	6,353,774	1,614,849	1,554,067	355,663	3,380,613	40,764	422,614	7,748,256	5,131,919	10,863,541	38,142,396

Milliman Actuarial Valuation

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 payment to amortize the Unfunded Accrued Liability), plus **Interest** to reflect the time lag between the valuation date and the fiscal year.

The amortization period was reset to 30 years (20 years for Police) starting with FYE 2015. The amortization method produces annual payments that will increase by 3.00% annually. On this basis, the ADC is determined as follows:

	BOE Admin	Teachers	BOE Clerical	BOE Custodians	BOE Food Service	BOE Non-Union	BOE Nurses	Town Dispatchers	Town Admin	Town Teamsters	Police	Total
Accrued Liability	\$676,336	\$6,353,774	\$1,614,849	\$1,554,067	\$355,663	\$3,380,613	\$40,764	\$422,614	\$7,748,256	\$5,131,919	\$10,863,541	\$38,142,396
Actuarial Value of Assets *	6,978	145,064	23,025	44,558	20,383	45,584	2,669	26,332	298,870	172,233	493,801	1,279,497
Unfunded Accrued Liability	669,358	6,208,710	1,591,824	1,509,509	335,280	3,335,029	38,095	396,282	7,449,386	4,959,686	10,369,740	36,862,899
Amortization Period	26	26	26	26	26	26	26	26	26	26	16	
Amortization Growth Rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Past Service Cost	32,402	300,553	77,057	73,073	16,230	161,443	1,844	19,184	360,612	240,090	745,733	2,028,221
Total Normal Cost	17,381	260,467	34,940	50,344	21,623	83,230	3,797	17,371	237,703	106,483	337,722	1,171,061
Employee Contributions	0	0	0	0	0	0	0	0	0	0	0	0
Expenses	15	222	30	43	19	71	3	15	203	91	288	1,000
Net Normal Cost	17,396	260,689	34,970	50,387	21,642	83,301	3,800	17,386	237,906	106,574	338,010	1,172,061
Interest	2,490	28,062	5,601	6,173	1,894	12,237	282	1,829	29,926	17,333	54,187	160,014
ADC for FY 2019	52,288	589,304	117,628	129,633	39,766	256,981	5,926	38,399	628,444	363,997	1,137,930	3,360,296
Expected Benefit Payouts	29,003	343,540	87,170	25,954	9,935	155,799	1,908	8,720	322,048	201,996	440,354	1,626,427
Net Budget Impact	23,285	245,764	30,458	103,679	29,831	101,182	4,018	29,679	306,396	162,001	697,576	1,733,869

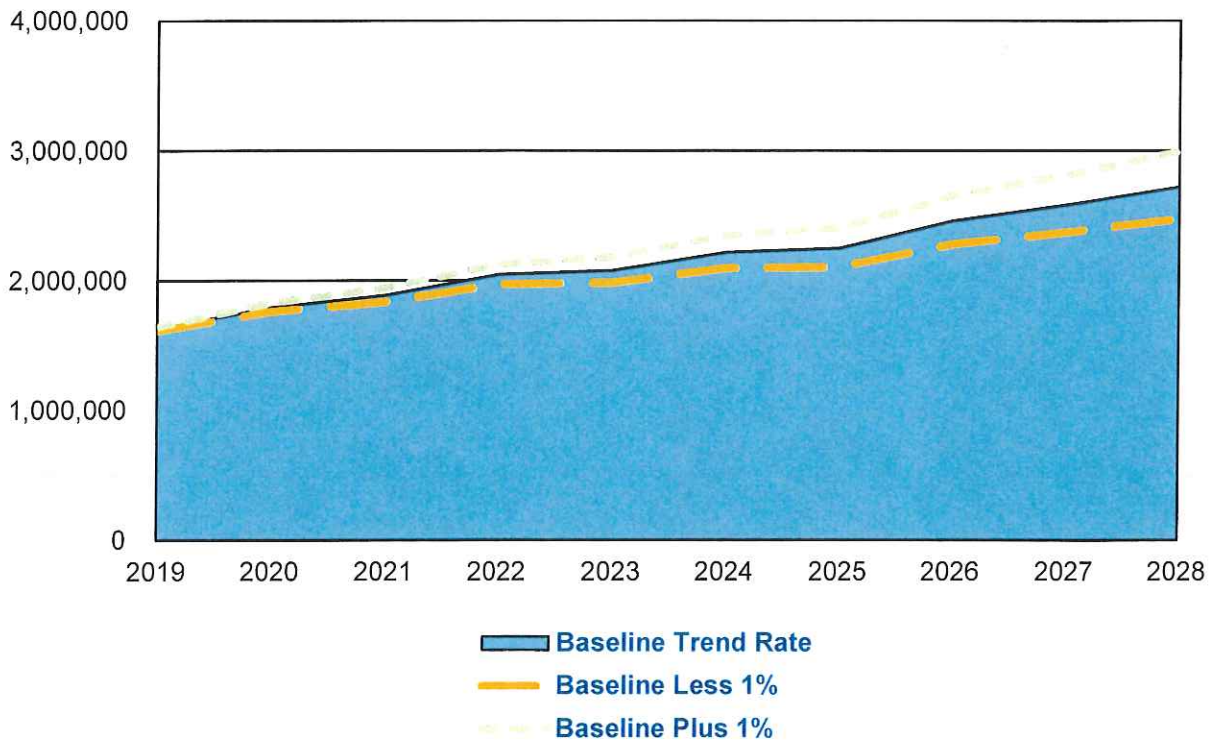
The Actuarially Determined Contribution is assumed to be paid at the beginning of the Fiscal Year.

*The asset amounts shown are not explicitly associated with the Report Groups above and have been allocated based on their prior year prefunding contributions.

Projected Payouts

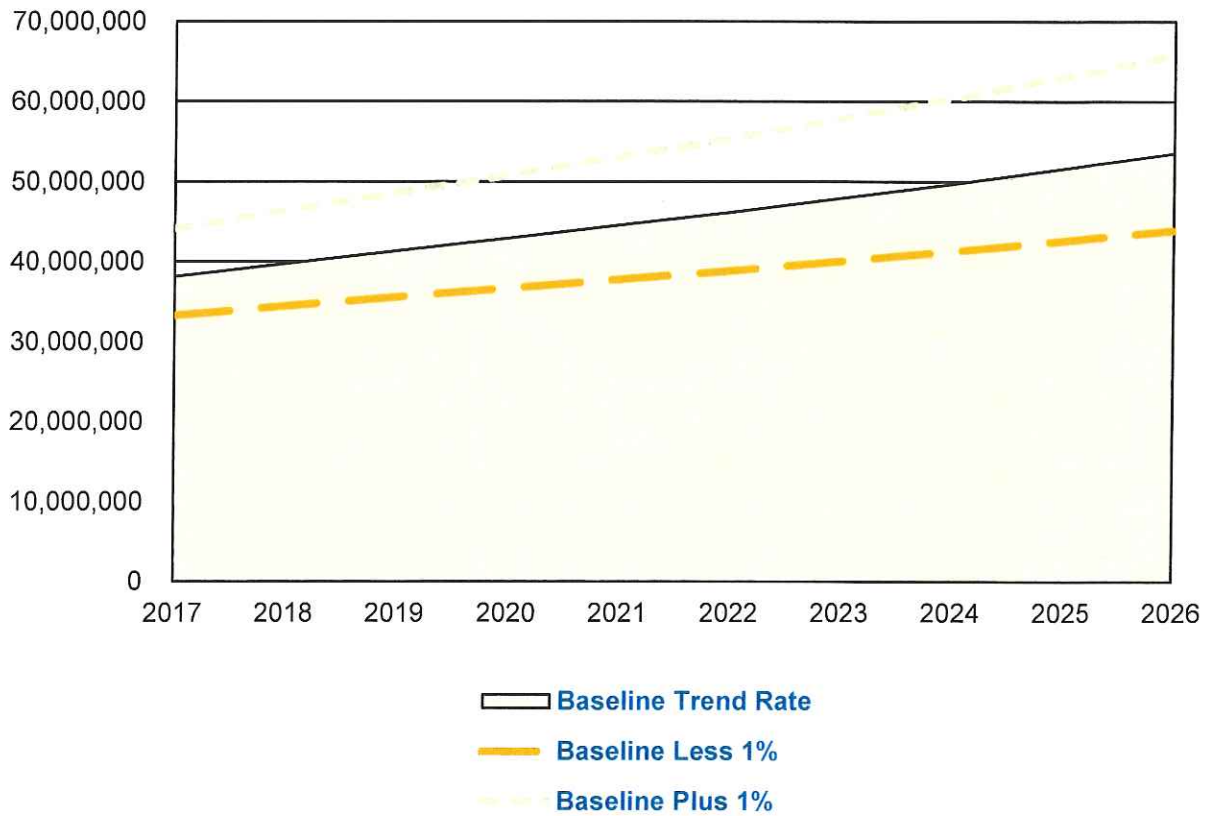
The table and graph below show the expected annual payments for OPEB benefits for the next 10 years.

Fiscal Year	Baseline Less 1%	Baseline Trend Rate	Baseline Plus 1%
2019	\$1,611,253	\$1,626,427	\$1,641,601
2020	1,760,227	1,793,790	1,827,668
2021	1,834,366	1,887,291	1,941,226
2022	1,969,249	2,045,559	2,124,064
2023	1,982,495	2,079,133	2,179,499
2024	2,093,818	2,216,988	2,346,140
2025	2,103,475	2,248,622	2,402,273
2026	2,279,754	2,460,487	2,653,631
2027	2,370,494	2,582,991	2,812,254
2028	2,474,553	2,722,268	2,992,080



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	\$66,013	\$66,013	0.00%	N/A	N/A
7/1/2009	0	72,896	72,896	0.00%	N/A	N/A
7/1/2011	0	74,028	74,028	0.00%	N/A	N/A
7/1/2013	0	67,719	67,719	0.00%	44,516	152.1%
7/1/2015	407	52,676	52,269	0.77%	45,661	114.5%
7/1/2017	1,279	38,142	36,864	3.35%	46,133	79.9%

History of Employer Contributions

(\$ 000s)

Year Ended June 30	Actuarially Determined Contribution	Actual Contribution Made	Percentage Contributed
2009	\$6,389	\$1,898	29.7%
2010	7,185	2,085	29.0%
2011	7,118	2,067	29.0%
2012	7,681	2,283	29.7%
2013	7,258	2,047	28.2%
2014	7,831	2,240	28.6%
2015	6,300	2,596	41.2%
2016	6,762	2,593	38.3%
2017	4,884	2,411	49.4%
2018	5,250	1,976	37.6%
2019	3,360	N/A	N/A

Summary of Census Data

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

Number of members	BOE Admin	Teachers	BOE Clerical	BOE Custodians	BOE Food Service	BOE Non-Union	Town			Police	Total
							BOE Nurses	Dispatchers	Teamsters		
Active	26	349	30	36	13	24	5	8	39	47	652
Retired members	2	31	6	1	0	13	0	0	24	28	138
Spouses of retirees	0	6	2	0	0	4	0	0	12	14	50
Beneficiaries	0	6	0	0	0	0	0	0	0	7	14
Total	28	392	38	37	13	41	5	8	121	96	854
Average age											
Active	45.4	43.6	51.8	54.4	54.2	51.7	56.8	44.1	49.0	41.3	46.1
Retired members	73.5	68.6	77.0	69.0	N/A	71.8	N/A	N/A	70.2	65.3	70.1
Average retirement age											
Active	61.8	59.8	59.5	60.7	60.4	59.5	62.2	52.9	57.0	58.9	59.3
Retired members	62.0	59.0	62.3	55.0	N/A	62.5	N/A	N/A	63.0	56.1	60.0
Expected lifetime											
Active [to retirement]	16.3	16.2	7.7	6.3	6.2	7.8	5.4	8.7	8.0	17.6	13.3
Retired [lifetime]	16.1	19.7	12.4	16.4	N/A	15.4	N/A	N/A	16.7	18.2	16.8

The retiree census data excludes post 65 Medicare eligible and dental only retired members 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.

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

Current Premiums

Based on information provided by the Town regarding current plan elections, the following weighted average blended actual premiums were used (current Town post-65 rates are listed by plan):

2017 - 2018 Monthly Premiums		Employee	Spouse
Medical - Town	Pre 65	\$733.25	\$733.24
	Post 65		
	Plan F/BlueScript	699.47	699.47
	High Option/Plan 83	185.47	185.47
Medical - BOE	Pre 65	624.06	623.00
	Post 65	620.91	620.13
Dental - Town		36.46	N/A
Dental - BOE		58.34	58.52

Health Cost Adjustment Factors

Milliman's Health Cost Guidelines were used to develop the expected relationship of the true cost of health benefits across age and gender. Representative factors are shown below.

Age	Town - Medical		BOE - Medical	
	Employee	Spouse*	Employee	Spouse*
40	1.16%	2.07%	0.93%	4.15%
45	2.04%	2.40%	1.31%	2.85%
50	2.57%	3.34%	1.45%	4.59%
55	3.16%	2.89%	2.47%	3.67%
60	4.32%	3.53%	3.71%	4.58%
65	3.63%	3.46%	3.37%	3.72%
70	3.64%	3.46%	3.37%	3.73%
75	2.97%	2.92%	2.89%	2.99%
80	2.48%	2.47%	2.47%	2.48%

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

* Child dependent claim costs are included with pre-65 spouse claim costs.

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 74 and 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 74 and 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 a 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 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 judgement regarding future plan experience. We believe the assumptions are reasonable for the contingencies they are measuring, and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

Discount Rate	5.00%																								
Inflation Rate	2.70%																								
Medical Inflation Rate	7.27% - 4.47% for 70 years (Prior: 5.60% - 4.60% over 62 years)																								
Dental Inflation Rate	3.00%																								
Amortization Growth Rate	3.00%																								
Salary Scale	Teachers and Administrators[#]																								
	<table><thead><tr><th>Service</th><th>Rate</th></tr></thead><tbody><tr><td>0-1</td><td>6.50%</td></tr><tr><td>2-9</td><td>6.25%</td></tr><tr><td>10-11</td><td>5.50%</td></tr><tr><td>12-14</td><td>5.00%</td></tr><tr><td>15</td><td>4.75%</td></tr><tr><td>16</td><td>4.50%</td></tr><tr><td>17</td><td>4.25%</td></tr><tr><td>18</td><td>4.00%</td></tr><tr><td>19</td><td>3.75%</td></tr><tr><td>20</td><td>3.50%</td></tr><tr><td>21+</td><td>3.25%</td></tr></tbody></table>	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%
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 3.50%																								

Actuarial Assumptions

Healthy Mortality

Teachers and Central Office Administrators[#]: RP-2000 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.

Police[†]: RP-2000 Mortality Table, set forward one year for males and set back one year for females. This assumption does not include a margin for mortality improvement beyond the valuation date.

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

Disabled Mortality

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

Police[†]: RP-2000 Mortality Table, set forward five years for males and set forward one year for females. This assumption does not include a margin for mortality improvement beyond the valuation date.

All Others: N/A

Actuarial Assumptions

Turnover

Teachers, Administrators and Central Office Administrators[#]: Rates based 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%
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%

Actuarial Assumptions

Turnover

Police: None.

All Others: according to the Crocker-Sarason T9 Table:

Age	Rate
20	17.95%
30	15.85%
40	11.27%
50	5.10%

Retirement

Teachers and Central Office 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

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

Prior:

Age	Unreduced		Proratable		Reduced	
	Male	Female	Male	Female	Male	Female
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%		

Police: 15% at age 55 with 10 years of service; 40% at age 55 with 25 years of service; at all other ages:

Age	Rate
45-49	25%
50	20%
51	16%
52	14%
53-58	12%
59	16%
60-62	20%
63-64	25%
65+	100%

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

Actuarial Assumptions

Retirement

All Others: 15% at age 55 with 10 years of service; 40% at the earlier of age 55 with 30 years of service or age 65 with 10 years of service; at all other ages:

Age	Rate
56-59	10%
60-61	20%
62-69	30%
70	100%

Disability

Teachers and **Central Office Administrators[#]**: rates based on age and gender:

Current:

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%

Prior:

Age	Male	Female
20	0.0455%	0.0500%
30	0.0455%	0.0410%
40	0.0715%	0.0720%
50	0.3250%	0.2630%
60	1.2805%	0.5000%

All Others: None.

Future Retiree Coverage **Teachers, Central Office Administrators,** and **BOE Non-Certified:** 90% of future retirees are assumed to elect coverage under the retiree medical program.

All Others: 100% of future retirees are assumed to elect coverage under the retiree medical program.

Future Dependent Coverage

Current active members are assumed to elect dependent coverage at retirement as follows. All female spouses are assumed to be 3 years younger than males.

	Male	Female
Teachers and Central Office Administrators	50%	30%
Police	80%	80%
Town	70%	25%
BOE Non-Certified	50%	40%

Actuarial Assumptions

Future Post-65 Coverage Teachers and Central Office Administrators: 75% of current Non-Medicare eligible actives and pre-65 retirees are assumed either to enroll in retiree health coverage through the Connecticut State Teachers Retirement System at age 65, or transfer to a Medicare Supplement Plan.

All Others: All current actives and pre-65 retirees are assumed to continue coverage past age 65 (if available).

Valuation of Dental and Post-65 Medicare Eligible Medical Benefits It is assumed that there is no implicit rate subsidy associated with these benefits.

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

Certain actuarial demographic assumptions for Teachers and Central Office 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.

◆ Certain actuarial demographic assumptions for Police are based on the assumptions used in the 2014 valuation of the Connecticut Municipal Employees' 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

Teachers and Central Office Administrators:

A Teacher or Administrator retiring shall be eligible to receive medical and dental benefits for self and spouse.

Normal Retirement for Teachers and Administrators is the earliest of age 60 with 20 years of service, or completion of 35 years of service regardless of age. Early Retirement is 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.

Police:

Employees retiring under the Connecticut Municipal Employees' Retirement Fund B (MERF B), shall be eligible to receive health benefits for self and spouse only if similar insurance is not available through another employer or spouse's employer.

Town, BOE Non-Certified and Dispatchers hired before July 1, 2016:

Employees retiring under the Town of Windsor Retirement Plan, shall be eligible to receive health benefits for self and spouse.

Coverage for self - age 55 with 10 years of service.

Coverage for spouse- earlier of age 55 with 30 years of service or age 65 with 10 years of service.

Town employees shall be eligible to receive health benefits for self and spouse only if similar insurance is not available through another employer or spouse's employer.

Dispatchers hired on and after July 1, 2016:

Employees retiring under the Town of Windsor Retirement Plan, shall be eligible to receive health benefits for self and spouse.

Coverage for self - age 55 with 15 years of service.

Coverage for spouse - earlier of age 55 with 30 years of service or age 65 with 15 years of service.

Summary of Plan Provisions

Cost Sharing

Police:

Hired prior to July 1, 2013:

Medical* Retiree pays the same percentage of premium that is in effect for current employees for self and spouse, up to a maximum retiree share of 25% of the premium.

Dental Retiree pays same percentage of premium that is in effect for current employees for self, with a maximum retiree share of 25%. Spouse coverage is available at 100% retiree-paid.

Hired on or after July 1, 2013:

Medical* Retiree pays the same percentage of premium that is in effect for current employees for self and 100% for spouse.

Dental Retiree pays same percentage of premium that is in effect for current employees for self and 100% for spouse.

** The Town's contribution towards post-65 Medicare Supplement coverage is based on the premium of the High Option/Plan 83. If a different option is elected the retiree is also responsible for the difference in premiums.*

Town Administrative:

Hired prior to July 1, 2009:

Medical* Retiree pays the same percentage of premium that is in effect for current employees for self and spouse, up to a maximum retiree share of 25% of the premium.

Dental Retiree contributes 0% of the cost for self and 100% for spouse.

Hired after July 1, 2009 and prior to March 1, 2013:

Medical* Retiree contributes 25% of the cost for self and 50% for spouse.

Dental Retiree contributes 0% of the cost for self and 100% for spouse.

Hired on or after March 1, 2013:

Medical* Retiree pays the same percentage of premium that is in effect for current employees for self and 100% for spouse.

Dental Retiree contributes 0% of the cost for self and 100% for spouse.

** The Town's contribution towards post-65 Medicare Supplement coverage is based on the premium of the High Option/Plan 83. If a different option is elected the retiree is also responsible for the difference in premiums.*

Summary of Plan Provisions

Cost Sharing

Dispatchers:

Hired prior to January 1, 2007:

Medical* Retiree pays the same percentage of premium that is in effect for current employees for self and spouse, up to a maximum retiree share of 25% of the premium.

Dental Retiree pays the same percentage of premium that is in effect for current employees for self, with a maximum retiree share of 25%. Spouse coverage is available at 100% retiree-paid.

Hired after January 1, 2007 and prior to July 1, 2011:

Medical* Retiree pays the same percentage of premium that is in effect for current employees for self and spouse, to a maximum retiree share of 25% for the retiree and 40% for the spouse.

Dental Retiree pays the same percentage of premium that is in effect for current employees for self, with a maximum retiree share of 25%. Spouse coverage is available at 100% retiree-paid.

Hired on or after July 1, 2011:

Medical* Retiree pays the same percentage of premium that is in effect for current employees for self and 100% for spouse.

Dental Retiree pays the same percentage of premium that is in effect for current employees for self and 100% for spouse.

** The Town's contribution towards post-65 Medicare Supplement coverage is based on the premium of the High Option/Plan 83. If a different option is elected the retiree is also responsible for the difference in premiums.*

Summary of Plan Provisions

Cost Sharing

Town Teamsters:

Hired prior to July 1, 2008:

Medical* Retiree pays the same percentage of premium that is in effect for current employees for self and spouse, up to a maximum retiree share of 25% of the premium.

Dental Retiree contributes 100% of the cost for self and spouse.

Hired after July 1, 2008 and prior to November 1, 2011:

Medical* Retiree pays the same percentage of premium that is in effect for current employees for self and spouse, to a maximum retiree share of 25% for the retiree and 50% for the spouse.

Dental Retiree contributes 100% of the cost for self and spouse.

Hired on or after November 1, 2011:

Medical* Retiree pays the same percentage of premium that is in effect for current employees for self and 100% for spouse.

Dental Retiree contributes 100% of the cost for self and spouse.

** The Town's contribution towards post-65 Medicare Supplement coverage is based on the premium of the High Option/Plan 83. If a different option is elected the retiree is also responsible for the difference in premiums.*

Board NAGE (Custodians/Maintenance/Food):

Hired prior to July 1, 2010:

Medical Retiree contributes 75% of the cost for self and 100% for spouse.

Dental Retiree contributes 100% of the cost for self and spouse.

Hired on or after July 1, 2010:

Medical Retiree contributes 100% of the cost for self and spouse.

Dental Retiree contributes 100% of the cost for self and spouse.

Board Nurses:

Medical Retiree contributes 100% of the cost for self and spouse.

Dental Retiree contributes 100% of the cost for self and spouse.

Summary of Plan Provisions

Cost Sharing

Board Non-Affiliated:

(negotiated cost sharing for 2015-2016)

Hired prior to January 1, 2007:

Retiree pays the same percentage of premium that is in effect at the time of the employee's retirement.

Medical Retiree contributes 15% of the cost for self and 50% for spouse.

Dental Retiree contributes 15% of the cost for self and 25% for spouse, up to an annual cap of \$2,500.

Hired on or after January 1, 2007:

Medical Retiree contributes 100% of the cost for self and spouse.

Dental Retiree contributes 100% of the cost for self and spouse.

Board Administrative Support Staff:

Hired prior to July 1, 2008:

Medical Retiree contributes 85% of the cost for self and 100% for spouse.

Dental Retiree contributes 85% of the cost for self and 100% for spouse.

Hired on or after July 1, 2008:

Medical Retiree contributes 100% of the cost for self and spouse.

Dental Retiree contributes 100% of the cost for self and spouse.

Teachers and Central Office Administrators:

Medical* Retiree contributes 100% of the cost for self and spouse.

Dental* Retiree contributes 100% of the cost for self and spouse.

* less \$1,320 annual CT Teachers Retirement Board subsidy

Other Bargaining Units:

No retiree medical or dental benefits are provided.