Milliman

TOWN OF GRANBY
OTHER POST-EMPLOYMENT BENEFITS PROGRAM

July 1, 2017 Actuarial Valuation

Prepared by

Rebecca A. Sielman, FSA
Consulting Actuary

Teresa M. Medeiros, FSA
Consulting Actuary

80 Lamberton Road
Windsor, CT 06095 USA
Tel +1 860.687.2110
Fax +1 860.687.2111
milliman.com

December 5, 2018

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Certification

We have performed an actuarial valuation of the Town of Granby 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 Granby'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.

December 5, 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 343 to 333. The total number of active members decreased from 298 to 281, and the total number of retirees and spouses of retirees increased from 45 to 51. In addition, the population of retired Teachers who are over age 65 but not covered by Medicare remained at 8. Since Medicare covers such a significant portion of medical costs, persons who are not covered by Medicare represent a significant individual liability.

The average age of active members increased from 47.0 to 47.8, and the average age of retired members increased from 66.1 to 67.5.

Actuarial Method and 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 increased the liability by $491,000 and increased the Actuarially Determined Contribution by $65,000.

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 7.01%, grading down to an ultimate inflation rate of 4.50% over a period of 60 years (Prior valuation: an initial inflation rate of 5.60% graded down to an ultimate inflation rate of 4.70% over a period of 67 years). The change in this assumption decreased the Accrued Liability by about $288,000 and the Actuarially Determined Contribution by $37,000.

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 $36,000 and the Actuarially Determined Contribution by about $9,800.

Discount Rate: We lowered the discount rate from 7% to 6% to better reflect the long-term expected investment return on OPEB trust assets. The change in discount rate increased the Accrued Liability by about $739,000 and the Actuarially Determined Contribution by $57,000.

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 $531,000 and the Actuarially Determined Contribution by $30,000.

Asset Smoothing: 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. This change increased the Actuarially Determined Contribution by $1,900.

Amortization Period: We reset the amortization period to 22 years effective July 1, 2017. This change decreased the Actuarially Determined Contribution by $30,000.

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:

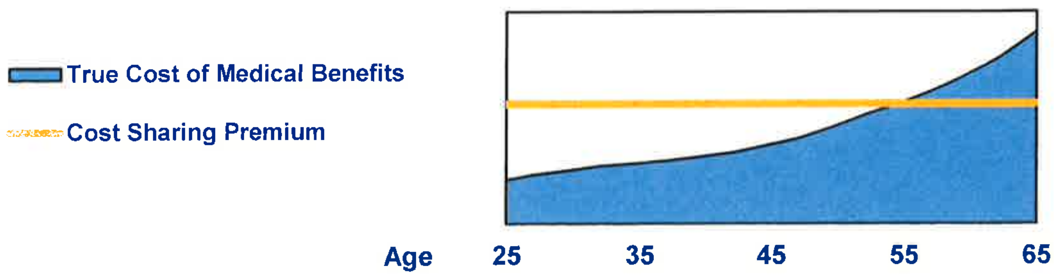
- Normal Cost – because the benefits earned each year should be paid for each year
- Past Service Cost – a catch-up payment to fund the Accrued Liability over time
- Interest – adjusts for the time lag between the valuation date and the start of the fiscal year

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	$1,385,541
Market Value as of July 1, 2016	1,365,480
Employer Contributions	707,589
Income	136,681
Benefit Payments	(474,546)
Administrative Expenses	0
Market Value as of July 1, 2017	1,735,204
Approximate Rate of Return	9.22%

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	$1,365,480
b. Employer Contributions	707,589
c. Benefit Payments	(474,546)
d. Administrative Expenses	0
e. Expected Investment Return Based on 7.00%	103,771
f. Expected Market Value of Assets as of July 1, 2017	1,702,294
2. Actual Market Value of Assets as of July 1, 2017	1,735,204
3. Market Value (Gain)/Loss: (1f) - (2)	(32,910)
4. Delayed Recognition of Market (Gains)/Losses:	

Plan Year End	(Gain)/Loss	Percent Not Recognized	Amount Not Recognized
6/30/2017	($32,910)	80%	($26,328)
6/30/2016	N/A	60%	N/A
6/30/2015	N/A	40%	N/A
6/30/2014	N/A	20%	N/A

	(26,328)
5. Actuarial Value of Assets as of July 1, 2017 (2) + (4)	1,708,876

Summary of Liabilities

We have calculated the Accrued Liability separately for six 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 Certified	Clerical	Custodians	BOE Non-Union	Town	Police	Total
Current active members							
Employees under age 65	$1,246,890	$60,405	$157,388	$76,632	$74,768	$131,706	$1,747,789
Employees over age 65	284,812	88,526	60,380	58,077	343,539	244,779	1,080,113
Dependents under age 65	371,453	9,692	86,958	26,817	50,698	51,598	597,216
Dependents over age 65	233,689	67,490	14,804	40,589	144,931	0	501,503
Total	2,136,844	226,113	319,530	202,115	613,936	428,083	3,926,621
Current retired members							
Employees under age 65	192,780	37,609	41,332	0	68,035	0	339,756
Employees over age 65	2,073,346	0	30,856	0	338,823	168,182	2,611,207
Dependents under age 65	98,121	0	54,066	0	215,076	9,339	376,602
Dependents over age 65	475,674	0	0	0	509,103	0	984,777
Total	2,839,921	37,609	126,254	0	1,131,037	177,521	4,312,342
Total Accrued Liability	4,976,765	263,722	445,784	202,115	1,744,973	605,604	8,238,963

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

	1% Decrease	Baseline	1% Increase
Discount Rate Sensitivity	**5.00%**	**6.00%**	**7.00%**
Accrued Liability	9,101,231	8,238,963	7,499,648

	1% Decrease	Baseline	1% Increase
Trend Rate Sensitivity			
Accrued Liability	7,390,011	8,238,963	9,245,640

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 is 22 years starting in FY 2017. The amortization method produces annual payments that will increase by 3.50% annually. On this basis, the ADC is determined as follows:

	BOE Certified	Clerical	Custodians	BOE Non-Union	Town	Police	Total
Accrued Liability	$4,976,765	$263,722	$445,784	$202,115	$1,744,973	$605,604	$8,238,963
Assets	581,837	37,084	128,773	39,635	606,105	315,443	1,708,877
Unfunded Accrued Liability	4,394,928	226,638	317,011	162,480	1,138,868	290,161	6,530,086
Amortization Period	22	22	22	22	22	22	22
Amortization Growth Rate	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Past Service Cost	253,746	13,085	18,303	9,381	65,754	16,753	377,022
Normal Cost	146,333	26,317	27,248	15,401	28,841	32,853	276,993
Interest	24,005	2,364	2,733	1,487	5,676	2,976	39,241
ADC for FY 2019	424,084	41,766	48,284	26,269	100,271	52,582	693,256
Expected Benefit Payouts	376,331	29,655	50,108	10,821	89,304	15,899	572,118
Net Town Contribution to Trust	47,753	12,111	(1,824)	15,448	10,967	36,683	121,138

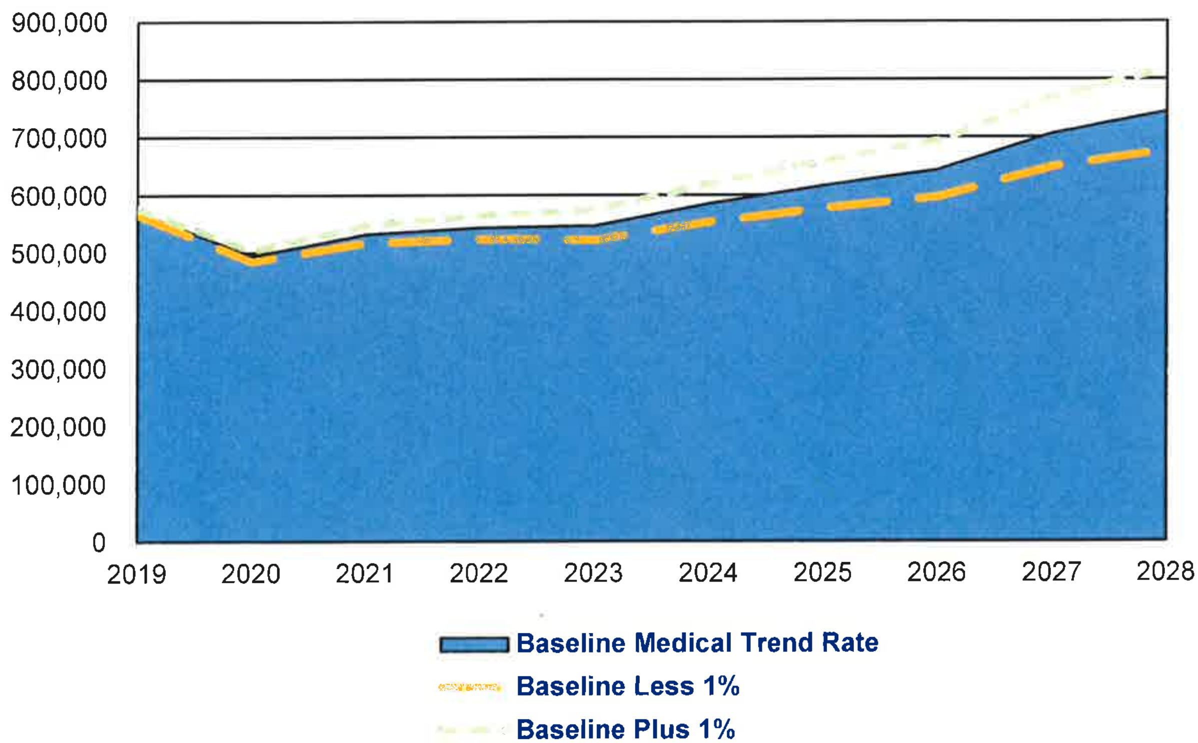
The ADC is assumed to be paid at the beginning of the Fiscal Year.

The asset amounts shown above are not explicitly associated with the employee groups and have been allocated to the groups based on their respective prior year prefunding contributions.

Projected Payouts

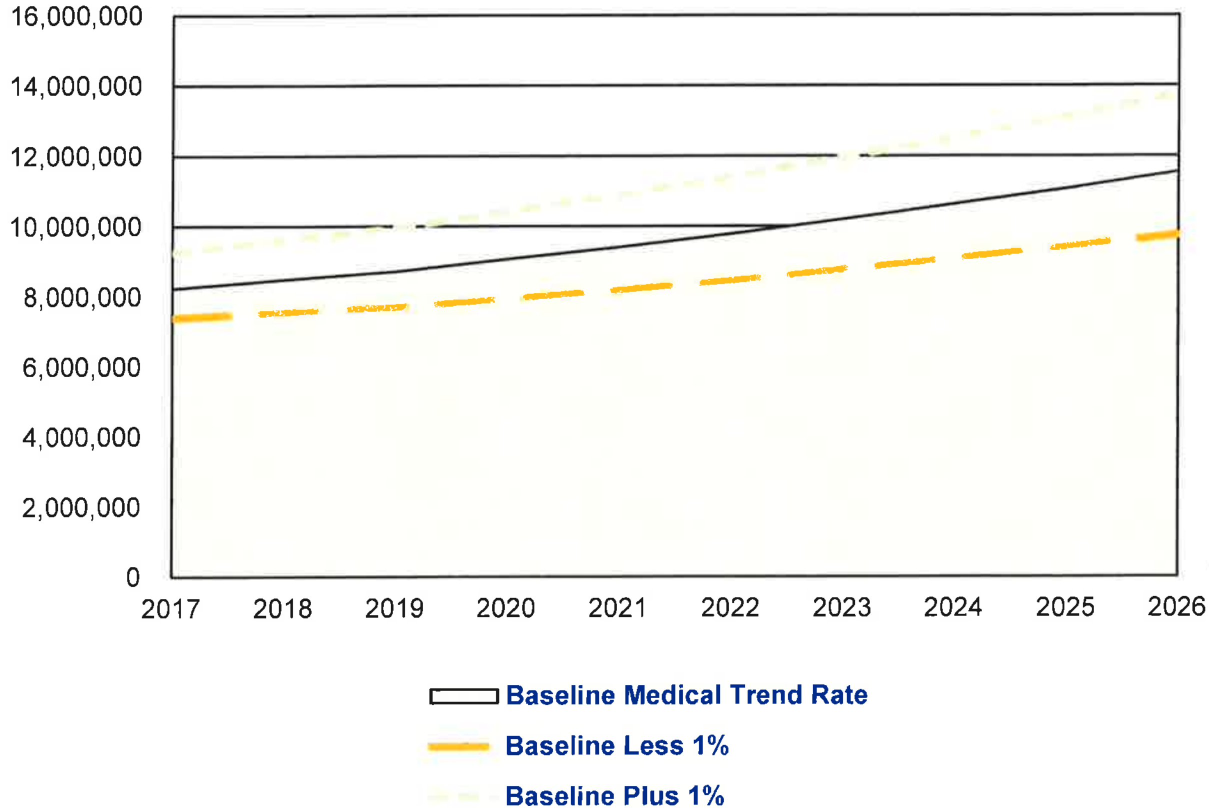
The table and graph below show the expected annual payments for OPEB benefits for the next 10 years.

Fiscal Year	Baseline Less 1%	Baseline Medical Trend Rate	Baseline Plus 1%
2019	$566,766	$572,118	$577,470
2020	485,093	494,357	503,709
2021	517,201	532,148	547,376
2022	523,278	543,579	564,462
2023	521,524	546,966	573,393
2024	552,692	585,230	619,348
2025	576,370	616,168	658,298
2026	595,839	643,105	693,616
2027	648,089	706,211	768,922
2028	675,859	743,545	817,275



Projected Liabilities

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



Historical Schedule 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	$11,124	$11,124	0%	N/A	N/A
7/1/2009	0	6,323	6,323	0%	N/A	N/A
7/1/2011	597	5,180	4,583	12%	N/A	N/A
7/1/2013	1,040	5,715	4,675	18%	19,764	24%
7/1/2015	1,386	6,288	4,902	22%	20,391	24%
7/1/2017	1,709	8,239	6,530	21%	20,208	32%

Schedule of Employer Contributions

($ 000s)

Year Ended June 30	Actuarially Determined Contribution	Actual Contribution Made	Percentage Contributed
2009	$973	$497	51.08%
2010	688	604	87.79%
2011	651	893	137.17%
2012	686	406	59.18%
2013	500	780	156.00%
2014	524	389	74.24%
2015	526	661	125.65%
2016	551	413	74.86%
2017	569	708	124.36%
2018	596	N/A	N/A
2019	693	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.

	BOE Certified	Clerical	Custodians	BOE Non-Union	Town	Police	Total
Number of members							
Active	178	15	18	12	45	13	281
Retired members	20	1	3	1	5	2	32
Spouses of retirees	12	0	2	1	3	1	19
Survivors	0	0	0	0	1	0	1
Total	210	16	23	14	54	16	333
Average age							
Active	45.0	52.3	53.1	49.8	55.6	44.9	47.8
Retired members	68.2	61.0	63.0	70.0	68.4	67.0	67.5
Average retirement age							
Active	60.3	63.7	63.4	62.9	64.7	57.9	61.4
Retired members	62.6	61.0	62.0	68.0	54.8	60.0	61.3
Expected lifetime							
Active [to retirement]	15.4	11.4	10.3	13.2	9.0	13.0	13.6
Retired members [lifetime]	20.0	24.9	21.6	15.6	18.0	18.1	19.7

The retiree census data excludes life-only, dental-only and post-65 Medicare eligible 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 - Town	Pre-65	$847.24	$847.29
	Post-65	737.93	737.93
Medical - BOE	Pre-65	726.70	726.74
	Post-65	726.70	726.74
Dental - Town		57.80	57.82
Dental - BOE		54.76	54.77

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.

	Town	
Age	**Employee**	**Spouse**
40	$480	$518
45	562	594
50	699	723
55	865	879
60	1,068	1,070
65	660	654
70	729	720
75	780	769
80	800	788

	BOE (Medicare Eligible)		BOE (Non-Medicare Eligible)	
Age	**Employee**	**Spouse**	**Employee**	**Spouse**
40	$887	$484	$887	$484
45	904	570	904	570
50	909	670	909	670
55	964	802	964	802
60	1,114	977	1,114	977
65	N/A	N/A	1,408	1,429
70	N/A	N/A	1,662	1,716
75	N/A	N/A	1,936	2,018
80	N/A	N/A	2,205	2,303

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 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 or the Unfunded Frozen 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.

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.

Glossary

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

Discount Rate

Current: 6.00%

Prior: 7.00%

Inflation Rate

2.75%

Amortization Growth Rate

3.50%

Medical Inflation Rate

7.01% - 4.50% over 60 years (Prior: 5.60% - 4.70% over 67 years)

Dental Inflation Rate

3.00%

Salary Scale

Teachers and **Administrators#**

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

All Others 3.50%

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, and separate tables for active employees and annuitants with generational projection per Scale AA. This assumption includes a margin for mortality improvement beyond the valuation date.

Actuarial Assumptions

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: N/A.

Turnover

Teachers, Administrators and **Central Office 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%

Actuarial Assumptions

Turnover

Teachers, Administrators and **Central Office Administrators#:** Rates based on gender and length of service for the first ten years and gender and age thereafter:

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%

All Others: Rates based on age and gender:

Age	Male	Female
20	6.00%	15.00%
25	4.80%	15.00%
30	3.60%	10.00%
35	2.75%	7.50%
40	2.05%	5.00%
45	1.40%	2.50%
50	0.75%	0.00%

Actuarial Assumptions

Retirement

Teachers and **Administrators#:** Rates based on age, eligibility for pension benefits, and gender:

Current:

	Unreduced		Proratable		Reduced	
Age	**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 **Administrators#:** Rates based on age, eligibility for pension benefits, and gender:

Prior:

	Unreduced		Proratable		Reduced	
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
50-51	27.5%	15.0%			2.0%	2.0%
52	27.5%	15.0%			2.5%	3.0%
53	27.5%	15.0%			3.0%	3.5%
54	27.5%	15.0%			4.0%	4.0%
55	38.5%	30.0%			4.5%	6.0%
56	38.5%	30.0%			6.0%	7.0%
57	38.5%	30.0%			9.0%	7.5%
58	38.5%	30.0%			10.0%	8.0%
59	38.5%	30.0%			11.0%	8.5%
60	22.0%	20.0%	6.0%	5.4%		
61	25.3%	22.5%	6.0%	7.2%		
62	25.3%	22.5%	15.0%	9.9%		
63-64	27.5%	22.5%	10.0%	7.2%		
65	36.3%	30.0%	20.0%	13.5%		
66	27.5%	30.0%	20.0%	10.8%		
67	27.5%	30.0%	20.0%	13.5%		
68	27.5%	30.0%	20.0%	10.8%		
69	27.5%	30.0%	35.0%	10.8%		
70-73	100.0%	40.0%	35.0%	10.8%		
74	100.0%	40.0%	35.0%	18.0%		
75-79	100.0%	40.0%	40.0%	18.0%		
80	100.0%	100.0%	40.0%	18.0%		

Actuarial Assumptions

Retirement

BOE Non-Certified: Rates based on age:

Age	Rate
55-59	5%
60-61	15%
62	50%
63-64	30%
65-69	40%
70	100%

Town: Rates based on age:

Age	Rate
55-59	2%
60-61	10%
62	50%
63-64	30%
65-69	40%
70	100%

Police: 75% at age 55 with 20 years of service; at all other ages:

Age	Rate
56-64	20%
65	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.

Actuarial Assumptions

Future Retiree Coverage	100% of **BOE** for the first 2 years and 50% thereafter, 50% of **Town** and 50% of **Police** active members are assumed to elect coverage at retirement.
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.

	Male	Female
Teachers and **Administrators**	50%	50%
BOE Non-Certified	50%	50%
Town	70%	50%
Police	100%	100%

Future Post-65 Coverage	**Teachers** and **Administrators:** 50% of current actives and pre-65 retirees are assumed to continue retiree health coverage at age 65. 100% of current actives and pre-65 retirees are assumed to be Medicare-eligible. **All Others:** 100% of current actives and pre-65 retirees are assumed to continue retiree health coverage at age 65 (when applicable).
Valuation of Life, Dental and Post-65 Medicare Eligible Medical Benefits	It is assumed that there is no implicit rate subsidy associated with life/dental benefits, or with post-65 medical benefits for Medicare eligible retired members and their spouses who are paying 100% of the premium.

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)

A Teacher or Administrator retiring under the Connecticut State Teachers' Retirement System shall be eligible to receive health 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.

Education Support Personnel (ESP) employees are not eligible for post-employment benefits.

BOE Non-Certified

Clerical (SEIU)

Category A and B retirees with at least 15 years of full-time employment in the Granby Public Schools are eligible to continue health and life insurance coverage.

Custodians (UPSEU)

A retired member shall be eligible to continue health and life insurance coverage.

Non-Union

A retired member shall be eligible to continue health benefits for self and spouse, when applicable per individual contract. The School Business Manager shall be eligible to continue health and life insurance coverage upon retirement.

Town (GMEA, UPSEU and Non-Union) and Police (IBPO)

Retired members are eligible to continue health coverage as long as their coverage is uninterrupted and does not cause adverse effect on the group's experience as determined by the Town.

Summary of Plan Provisions

Cost-Sharing

BOE Certified (Teachers and Administrators)

Teachers

(negotiated cost-sharing for 2017-2018)

Medical	Retiree contributes 21% of the PPO cost and 16.5% of the HSA cost.
Dental	Retiree contributes 21% of the cost.

The above cost-sharing applies for two years following retirement. Thereafter, the retiree shall contribute 100% of the cost.

Administrators

The Board shall contribute 100% of the cost of health and dental insurance for two years following retirement. Thereafter, the retiree shall contribute 100% of the cost.

BOE Non-Certified

Clerical and Custodians

(negotiated cost-sharing for 2017-2018)

Medical	Retiree contributes 20.5% of the PPO cost, and 16% (Clerical and Custodians) of the HSA cost.
Dental	Retiree contributes 21% of the cost.

The above cost-sharing applies for two years following retirement. Thereafter, the retiree shall contribute 100% of the cost.

Non-Union

The above cost-sharing for Clerical and Custodians applies. The School Business Manager will contribute the same premium share as active Administrators for the two years following retirement. Thereafter the School Business Manager shall contribute 100% of the cost as long as the coverage is uninterrupted.

Summary of Plan Provisions

Cost Sharing

Town

GMEA

Medical	Retiree contributes 100% of the cost.

UPSEU

Medical	Retiree contributes 100% of the cost.
Dental	Retiree contributes 100% of the cost.

Non-Union

Date of Hire prior to September 1, 2002:

Medical	Retiree contributes 15% of the cost.
Dental	Retiree contributes 15% of the cost.

Date of Hire after September 1, 2002:

Medical	Retiree contributes 100% of the cost.
Dental	Retiree contributes 100% of the cost.

Police (IBPO)

The Town shall contribute 50% of the cost of PPO insurance for the retiree only. The retiree shall contribute the remainder of the cost.

In the event of an employee's death in the line of duty, the Town shall contribute 100% of the health insurance cost coverage for the surviving spouse as well as any dependent children until the child attains the age of 26 years.

Life Insurance

Retirees may continue coverage (if applicable), based on the terms of their respective collective bargaining agreements. In general, if coverage continuation is permitted, then the retiree contributes 100% of the cost after two years.