



TOWN OF NEWTOWN OPEB REPORT

ACTUARIAL VALUATION REPORT

July 1, 2016





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Certification

This report presents the results of the Actuarial Valuation for the Town of Newtown OPEB Report post-retirement benefit other than pension (OPEB) for Town and Board of Education Employees (the Plan) for the purpose of estimating the funded status of the Plan and determining the Actuarially Determined Employer Contribution (ADEC) for the fiscal years ending June 30, 2018 and June 30, 2019. This report is intended to satisfy the requirements of Connecticut General Statute 7-450a. This report may not be appropriate for any other purpose.

The valuation has been performed in accordance with generally accepted actuarial principles and practices. It is intended to comply with all applicable Actuarial Standards of Practice.

I certify that the actuarial assumptions and methods that were selected by me and represent my best estimate of anticipated actuarial experience under the Plan.

In preparing this valuation, I have relied on employee data provided by the Plan Sponsor, and on asset and contribution information provided by the Town. I have audited neither the employee data nor the financial information, although I have reviewed them for reasonableness.

The results in this valuation report are based on the Plan as summarized in the Plan Provisions section of this report and the actuarial assumptions and methods detailed in the Description of Actuarial Methods and Assumptions section of this report.

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

I have no relationship with the employer or the Plan that would impair, or appear to impair, my objectivity in performing the work presented in this report. I am a member of the American Academy of Actuaries and meet its Qualification Standards to render the actuarial opinion contained herein.



Evan W. Woollacott, Jr., FCA, MAAA
Enrolled Actuary 17-04513

December 13, 2017



Executive Summary

The July 1, 2016 accrued liability of \$8,380,000 is slightly higher than anticipated. We expected \$8,042,000 in accrued liability. The additional liability is primarily due to the change in discount rate from 7.00% to 6.75% and the change in Cost Method to Entry Age Normal. The Cost Method change was made to assist with the implementation of GASB 74/75. In addition, we made some other assumption changes including Mortality, Retirement and Medical Trend. The change in the Cost Method and Discount Rate increased the liability by approximately 8%, all other assumption changes resulted in an increase in liability of approximately 3%. The impact of the Board of Education moving the majority of active employees to a High Deductible Health Plan with H S A resulted in a reduction in liability of approximately 3%. There was also a significant reduction of almost \$2,000,000 in liability due to smaller than expected medical premium increases and 19 less retired teachers in comparison to 2014.

Schedule of Funding Status and Funding Progress						
Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Accrued Liability (UAL)	Funded Ratio	Covered Payroll	UAL as a Percentage of Covered Payroll
7/1/2010	\$156,261	\$6,397,819	\$6,241,558	2%	\$35,055,000	18%
7/1/2012	610,498	6,264,781	5,654,283	10%	36,634,200	15%
7/1/2014	1,282,204	7,388,197	6,105,993	17%	36,690,663	17%
7/1/2016	2,101,024	8,380,102	6,279,078	25%	36,204,065	17%

History of Actuarially Determined Employer Contribution (ADEC)	
Year Ended June 30	Actuarially Determined Employer Contribution (ADEC)
2014	\$720,995
2015	739,707
2016	793,865
2017	814,292
2018	865,530
2019	874,889



Moody's Treading Water Analysis

For long-term contribution planning, Moody's provides a Treading Water Analysis with a minimum goal of preserving the plan's funded status. The Moody's contributions has two part: A + B:

A) Town Normal Cost	\$ 301,764
B) Interest on the Unfunded	\$ 423,838
C) Total: (A) + (B)	\$ 725,602

In comparison, the Town's funding policy is D + E:

D) Fixed Trust Contribution	\$ 200,000
E) Benefit Payments	\$ 437,414
F) Total: (D) + (E)	\$ 637,414

Based upon this analysis, it would be prudent for the Town to start increasing the fixed trust contribution.



Unfunded Accrued Liability and Actuarially Determined Employer Contribution

Unfunded Accrued Liability (UAL)			
Actuarial Accrued Liability 7/1/2016	BOE	Police	Grand Total
Actives	\$2,374,901	\$2,460,528	\$4,835,429
Retirees	<u>1,324,651</u>	<u>2,220,022</u>	<u>3,544,673</u>
Total	3,699,552	4,680,550	8,380,102
Assets 7/1/2016	<u>927,536</u>	<u>1,173,488</u>	<u>2,101,024</u>
Unfunded Accrued Liability (UAL) 7/1/2016	2,772,016	3,507,062	6,279,078
Funded Ratio	25.1%	25.1%	25.1%

Actuarially Determined Employer Contribution (ADEC)			
2017 / 2018 Fiscal Year ADEC	BOE	Police	Grand Total
Normal Cost	\$143,837	\$157,927	\$301,764
Amortization of UAL	236,410	299,098	535,508
Interest	<u>12,833</u>	<u>15,425</u>	<u>28,258</u>
Total ADEC 2017 / 2018	393,080	472,450	865,530

2018 / 2019 Fiscal Year ADEC	BOE	Police	Grand Total
Normal Cost	\$148,152	\$162,665	\$310,817
Amortization of UAL	236,410	299,098	535,508
Interest	<u>12,979</u>	<u>15,585</u>	<u>28,564</u>
Total ADEC 2018 / 2019	397,541	477,348	874,889



Participant Counts and Average Attained Age As of July 1, 2016

Participant Counts			
Group	Active Participants	Retirees*	Total
BOE	417	30	447
Police	43	9	52
Total	460	39	499

*Does not include spouses of existing retirees.

Average Age		
Group	Active Average Age	Retiree Average Age
BOE	44.7	64.2
Police	40.0	58.1



Participant Counts and Average Attained Age As of July 1, 2014

Participant Counts			
Group	Active Participants	Retirees*	Total
BOE	452	48	500
Police	45	9	54
Total	497	57	554

*Does not include spouses of existing retirees.

Average Age		
Group	Active Average Age	Retiree Average Age
BOE	44.5	65.8
Police	39.0	58.2



Projected Benefit Payments

Fiscal Year Beginning July 1st	Currently Active Employees	Currently Retired Employees	Total
2017	\$79,055	\$358,359	\$437,414
2018	107,374	332,956	440,330
2019	126,526	341,963	468,489
2020	183,805	335,389	519,194
2021	226,936	332,447	559,383
2022	252,479	335,654	588,133
2023	319,098	322,756	641,854
2024	378,648	339,070	717,718
2025	405,823	356,021	761,844
2026	454,514	336,855	791,369
2027	493,055	313,416	806,471
2028	559,280	285,349	844,629
2029	683,383	212,694	896,077
2030	792,881	215,000	1,007,881
2031	828,276	173,188	1,001,464
2032	998,476	124,025	1,122,501
2033	1,100,720	119,152	1,219,872
2034	1,120,860	114,722	1,235,582
2035	1,182,294	110,883	1,293,177
2036	1,224,690	107,701	1,332,391



Target Allocation and Expected Rates of Return

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*	Weighting
Core Fixed Income	35.00%	1.75%	0.61%
U.S. Large Cap Equities	27.50%	5.60%	1.54%
U.S. Small Cap Equities	7.50%	5.90%	0.44%
Developed Foreign Equities	30.00%	5.80%	1.74%
	100.00%		4.33%
Long-Term Inflation Expectation			2.25%
Long-Term Expected Nominal Return			6.58%

**Long-Term Returns are provided by FIA-LLC. The returns are geometric means.*

The long-term expected rate of return on OPEB plan investments was determined using a building block method in which best-estimate ranges of expected future real rates of return are developed. Best estimates of the real rates of return for each major asset class are included in the OPEB plan's target asset allocation.

The information above is based on geometric means and does not reflect additional returns through investment selection, asset allocation and rebalancing. An expected rate of return of 6.75% was used.

The July 1, 2016 Actuarial Valuation directly calculated the July 1, 2016 Total OPEB Liability (TOL). The July 1, 2016 TOL was increased by service cost and interest and decreased by benefit payments to estimate the TOL as of June 30, 2017.



Description of Actuarial Methods

Asset Valuation Method

Plan Assets equal the Market Value of assets.

Actuarial Cost Method

Cost method: Entry Age Normal Actuarial Cost Method (level percentage of salary).

Normal Cost: Under this method, the total normal cost is the sum of amounts necessary to fund each active member's normal retirement benefit if paid annually from entry age to assumed retirement age. Entry age is the age at which the employee would have been first eligible for the plan, if it had always been in effect. The normal cost for each participant is expected to remain a level percentage of the employee's salary. The normal cost for the plan is the difference between the total normal cost for the year and the anticipated member contributions for that year.

Past Service Liability: The present value of future benefits that relates to service before the valuation date is the total past service liability. The unfunded past service liability is the difference between the total past service liability and any assets (including accumulated member contributions). This amount is amortized over 24 years on a closed basis.

Experience Gains and Losses: All experience gains and losses (the financial effect of the difference between the actual experience during the prior period and the result expected by the actuarial assumptions for that prior period) appear directly in the past service liability and are amortized at the same rate the plan is amortizing the remaining unfunded past service liability.



Actuarial Assumptions Certified Employees

The actuarial assumptions used in the determination of costs and liabilities are as follows:

Mortality

Current Valuation: RP-2014 Mortality Table with no collar adjustment projected to valuation date with Scale MP-2017.

Prior Valuation: RP-2014 Mortality Table with no collar adjustment projected to valuation date with Scale MP-2014.

Mortality Improvement

Current Valuation: Projected to date of decrement using Scale MP-2017 (generational mortality).

Prior Valuation: Projected to date of decrement using Scale MP-2014 (generational mortality).

We have selected this mortality assumption and mortality improvement scale because it is based on a recently published pension mortality study released by the Society of Actuaries.

Interest

6.75% per annum. (Prior: 7.5%)

Rates of Retirement (from CT State TRS 2016 OPEB Valuation)

Age	Eligible for Normal (Unreduced) Retirement (Age 60 and 20 Yrs. Serv. or 35 yrs. Serv.)		Eligible for Early (Reduced) Retirement (Age 55 and 20 Yrs. Serv. or 25 yrs. Serv.)	
	Male	Female	Male	Female
50	27.5%	27.5%	1.00%	1.00%
51	27.5	27.5	1.00	1.25
52	27.5	27.5	1.00	1.75
53	27.5	27.5	2.00	2.25
54	27.5	27.5	3.00	2.75
55	38.5	27.5	4.00	4.75
56	38.5	27.5	6.00	6.25
57	38.5	27.5	7.00	6.75
58	38.5	27.5	8.00	7.25
59	38.5	27.5	11.00	8.50
60	22.0	27.5	22.00	27.50
61-62	25.3	27.5	25.30	27.50
63-64	27.5	27.5	27.50	27.50
65	36.3	32.5	36.30	32.50
66-69	27.5	32.5	27.50	32.50
70-79	100.0	32.5	100.00	32.50
80	100.0	100.0	100.00	100.00



Prior:

Rates of Retirement (from CT State TRS 2014 OPEB Valuation)

Age	Eligible for Normal (Unreduced) Retirement Age 60 and 20 yrs. Serv. <u>or</u> 35 yrs. Serv.		Eligible for Early (Reduced) Retirement Age 55 and 20 yrs. Serv. <u>or</u> 25 yrs. Serv.	
	Male	Female	Male	Female
50-51	27.5%	15.0%	2.0%	2.0%
52	27.5	15.0	3.0	3.0
53	27.5	15.0	3.0	4.0
54	27.5	15.0	4.5	5.0
55	38.5	30.0	4.5	6.0
56	38.5	30.0	7.0	8.5
57	38.5	30.0	10.0	9.5
58	38.5	30.0	11.0	10.0
59	38.5	30.0	12.0	10.0
60	22.0	20.0		
61-62	25.3	22.5		
63-64	27.5	22.5		
65	36.3	30.0		
66-69	27.5	30.0		
70-79	100.0	40.0		
80	100.0	100.0		

Service-Based Withdrawal Rates (until eligible to retire) (from CT State TRS 2016 OPEB Valuation)

Service	Male Rate	Female Rate
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
9-10	2.50	4.00
10 +	use age-related rates until eligible to retire	



Prior: **Service-Based Withdrawal Rates (until eligible to retire) (from CT State TRS 2014 OPEB Valuation):**

Service	Male Rate	Female Rate
0-1	.1400	.1200
1-2	.0850	.0900
2-3	.0550	.0700
3-4	.0450	.0600
4-5	.0350	.0550
5-6	.0250	.0500
6-7	.0240	.0450
7-8	.0230	.0350
8-9	.0220	.0300
9-10	.0210	.0250
10 +	Use age-related rates until eligible to retire	

Sample Age-Based Withdrawal Rates (until eligible to retire) (from CT State TRS 2016 OPEB Valuation)

Age	Male Rate	Female Rate
25	1.50%	4.00%
30	1.50	4.00
35	1.50	3.50
40	1.50	2.30
45	1.59	1.50
50	2.04	2.00
55	3.44	2.50
59+	4.00	2.90

Prior: **Sample Age-Based Withdrawal Rates (until eligible to retire) (from CT State TRS 2014 OPEB Valuation)**

Age	Male Rate	Female Rate
25-37	.0120	.0350
40	.0120	.0230
45	.0126	.0130
50	.0196	.0125
55	.0276	.0160
59+	.0300	.0190

Retirement and turnover assumptions are based on the most recent state pension valuation findings.

Non-service-connected disability

No disability assumed.

Additional Assumptions

50% of males and 50% of females assumed married with wives assumed to be three years younger than their husbands.



Medical inflation

Current Valuation

7.75% for 2016, decreasing 0.5% per year, to an ultimate rate of 4.75% for 2022 and later.

Prior Valuation

7% for 2016, decreasing 0.5% per year, to an ultimate rate of 4.5% for 2021 and later.

Percentage of Actives Eligible at Retirement who continue with Medical Coverage

85%.

Percentage of non-Medicare eligible Teachers Continuing After 65

10%.

2016-2017 Average Annual Premium

\$8,370.

Expected Claim Costs

Sample Age	Expected Claim (Male)	Expected Claim (Female)
45	\$5,461	\$7,612
50	7,132	8,870
55	9,359	10,333
60	12,056	12,051
65	15,350	14,607
70	18,466	17,085
75	21,190	19,178

The sample per capita claim was developed as follows: Using the total count of active participants eligible for post-retirement medical benefits and retirees currently electing medical coverage, we calculate the total projected claims by multiplying the total count by the average annual premium. Using the cost increases derived from a study sponsored by the Society of Actuaries prepared by Dale H. Yamamoto from May 2013: "Health Care Costs from Birth to Death", we allocate the total projected claims by age and gender.

(Prior: The sample per capita claim was developed as follows: Using the total count of active participants eligible for post-retirement medical benefits and retirees currently electing medical coverage, we calculate the total projected claims by multiplying the total count by the average annual premium. Using the cost increases derived from a study sponsored by the Society of Actuaries prepared by J.P. Petertil from August 1, 2003: "Aging Curves for Health Care Costs in Retirement", we allocate the total projected claims by age.)



Patient Protection and Affordable Care Act (PPACA)

High Cost Plan Excise Tax ("Cadillac Tax"): Effective in 2020, there will be a 40% excise tax on per capita medical benefit costs in excess of certain thresholds, which (in 2018) are \$10,200 for single coverage and \$27,500 for family coverage for Medicare eligible retirees. Thresholds (in 2018) for retirees who are between ages 55 and 65 are \$11,850 and \$30,950 for single and family coverage respectively. After 2018, the thresholds are indexed by CPI (CPI +1% in 2018 only). CPI is assumed to equal the inflation assumption.

The impact of this future excise tax has been reflected in plan liabilities.

Other Requirements of PPACA:

For purposes of this valuation, extended coverage for adult children and 100% coverage of preventive care are assumed to be reflected in per capita costs.

For purposes of this valuation, elimination of lifetime maximum benefits and removal of the limits on essential healthcare are assumed to have no impact on plan liabilities.

The assumption changes increased liabilities by about 13%.



Actuarial Assumptions Police

The actuarial assumptions used in the determination of costs and liabilities are as follows:

Mortality

Current Valuation: RP-2014 Mortality Table with blue collar adjustment projected to the valuation date with Scale MP-2017.

Prior Valuation: RP-2014 Mortality Table with blue collar adjustment projected to the valuation date with Scale MP-2014.

Mortality Improvement

Current Valuation: Projected to date of decrement using Scale MP-2017 (generational mortality).

Prior Valuation: Projected to date of decrement using MP-2014 (generational mortality).

We have selected this mortality assumption and mortality improvement scale because it is based on a recently published pension mortality study released by the Society of Actuaries.

Interest

6.75% per annum. (Prior: 7.5%)

Retirement Rates

Age	Rate
40 - 49	.10
50 - 59	.20
60+	1.00

Sample Withdrawal Rates

Age	Rate
25	.05
35	.03
45	.01
55	.00

Disability

The assumed rates of disability equal 50% of the 1985 Disability Pension Study, Class 4 hazardous occupations. Sample rates are as follows:

Age	Male	Female
20	.000885	.000520
30	.001830	.001495
40	.003465	.003175
50	.006770	.006635
60	.017170	.012345

Retirement and turnover assumptions are based on the most recent state pension valuation findings.



Additional Assumptions

50% of males and 50% of females assumed married with wives assumed to be three years younger than their husbands.

Percentage of Actives Eligible at Retirement who continue with Medical Coverage

60%.

Medical inflation

Current Valuation: 7.75% for 2016, decreasing 0.5% per year, to an ultimate rate of 4.75% for 2022 and later.

Prior Valuation: 7% for 2014, decreasing 0.5% per year, to an ultimate rate of 4.5% for 2021 and later.

2016-2017 Average Annual Premium

\$10,207.

Expected Claim Costs

Sample Age	Expected Claim (Male)	Expected Claim (Female)
45	\$8,753	\$12,200
50	11,430	14,215
55	14,999	16,560
60	19,322	19,315
65	24,602	23,411
70	29,595	27,382
75	33,962	30,737

The sample per capita claim was developed as follows: Using the total count of active participants eligible for post-retirement medical benefits and retirees currently electing medical coverage, we calculate the total projected claims by multiplying the total count by the average annual premium. Using the cost increases derived from a study sponsored by the Society of Actuaries prepared by Dale H. Yamamoto from May 2013: "Health Care Costs from Birth to Death", we allocate the total projected claims by age and gender.

(Prior: The sample per capita claim was developed as follows: Using the total count of active participants eligible for post-retirement medical benefits and retirees currently electing medical coverage, we calculate the total projected claims by multiplying the total count by the average annual premium. Using the cost increases derived from a study sponsored by the Society of Actuaries prepared by J.P. Petertil from August 1, 2003: "Aging Curves for Health Care Costs in Retirement", we allocate the total projected claims by age.)



Patient Protection and Affordable Care Act (PPACA)

High Cost Plan Excise Tax ("Cadillac Tax"): Effective in 2020, there will be a 40% excise tax on per capita medical benefit costs in excess of certain thresholds, which (in 2018) are \$10,200 for single coverage and \$27,500 for family coverage for Medicare eligible retirees. Thresholds (in 2018) for retirees who are between ages 55 and 65 are \$11,850 and \$30,950 for single and family coverage respectively. After 2018, the thresholds are indexed by CPI (CPI +1% in 2018 only). CPI is assumed to equal the inflation assumption.

The impact of this future excise tax has been reflected in plan liabilities.

Other Requirements of PPACA:

For purposes of this valuation, extended coverage for adult children and 100% coverage of preventive care are assumed to be reflected in per capita costs.

For purposes of this valuation, elimination of lifetime maximum benefits and removal of the limits on essential healthcare are assumed to have no impact on plan liabilities.

The assumption changes increased liabilities by about 6%.



Summary of Plan Provisions

This exhibit summarizes the major provisions of the Plan. It is not intended to be, nor should it be interpreted as a complete statement of all plan provisions. To the extent that this summary does not accurately reflect the plan provisions, then the results of this valuation may not be accurate.

Plan identification

Single-employer OPEB plan.

Certified Board of Education Employees

Eligibility for Medical Coverage

Any age with 25 years of service (20 in CT), age 55 with 20 years of service (15 in CT) or age 60 with 10 years of service (10 in CT). (Follow TRB eligibility).

Retiree/Spouse Cost of Medical Coverage

The retiree and spouse must pay 100% of the cost for medical coverage less any State subsidy. Spouse coverage may continue at 100% of cost less any State subsidy, after the death of a retiree.

Plan of Coverage

Various Anthem medical plans available to current teachers and administrators. Once eligible for Medicare A & B and supplemental insurance, retiree is no longer eligible for medical coverage under Board of Education.

Retiree/Spouse Dental Coverage

Not valued due to no implicit subsidy.

Life Insurance Benefit

None.

Voluntary Early Retirement Incentive Plan – Ends June 30, 2017

Eligibility/Duration

Eligible for normal and/or early retirement in accordance with the provisions of the State Teacher's Retirement system as of June 30, 2015 for a duration of up to two years.

Retiree/Spouse Cost of Medical Coverage

The Board will pay 77% of the cost of the pre-65 Plan. The Board shall be entitled to apply the State subsidy to offset the cost.

Plan of Coverage

Various Anthem medical plans available to current teachers and administrators.



Retiree/Spouse Dental Coverage

The retiree and spouse must pay current employee contribution percentage for dental coverage.

Life Insurance Benefit

None

Currently there are 13 retirees participating in the Voluntary Early Retirement Incentive Plan.

Police

Eligibility for Medical Coverage

Age 60 or 20 years of service.

Retiree/Spouse Cost of Medical Coverage

The retiree must pay 25% of the cost for medical coverage. Spouses pay 100% of the cost for medical coverage. Generally, no post-65 benefits are available.

Plan of Coverage

Various Anthem medical plans, dependent on whether under or over age 65 and whether eligible for Medicare.

Retiree/Spouse Dental Coverage

Not valued due to no implicit subsidy.

Life Insurance Benefit

None.

Special Retirees

One retiree has lifetime coverage at no cost.

One retiree has no cost share for employee or spouse, until age 65.

One retiree from the Town has 25% cost share until age 65.