



CITY OF STAMFORD BOARD OF EDUCATION OPEB PLAN

ACTUARIAL VALUATION REPORT

JULY 1, 2017





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Certification

This report presents the results of the July 1, 2017 Actuarial Valuation for post-retirement benefits other than pension (OPEB) for 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 year ending 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 Board of Education. 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

April 9, 2018



Executive Summary

The July 1, 2017 accrued liability of \$20,751,000 is lower than anticipated. The lower than expected liability is primarily due to the shift to the State Plan, lower than expected premiums, removal of the Custodian group, and a significant drop in retirees, which in total resulted in an approximate 31% drop in liabilities. This decrease was slightly offset by the change in Discount Rate, Inflation, and Medical Trend. These assumption changes increased liabilities by about 4%.

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
7/1/2014	\$9,840,000	\$52,174,000	\$42,334,000	19%	\$147,611,000	29%
7/1/2015	10,742,000	51,647,000	40,905,000	21%	151,301,000	27%
7/1/2016	12,375,000	38,620,000	26,245,000	32%	154,639,000	17%
7/1/2017*	12,986,000	20,751,000	7,765,000	63%	146,057,000	5%

History of Actuarially Determined Employer Contribution (ADEC)	
Year Ended June 30	Actuarially Determined Employer Contribution (ADEC)
2014	\$5,118,000
2015	4,934,000
2016	5,031,000
2017	4,726,000
2018	3,342,000
2019*	1,247,000

**Does not include Custodians*



Unfunded Accrued Liability and Actuarially Determined Employer Contribution

Unfunded Accrued Liability (UAL)				
Actuarial Accrued Liability 7/1/2017	BOE Teachers	BOE Admins	BOE Ed Assistants	Grand Total
Actives	\$10,383,000	\$830,000	\$878,000	\$12,091,000
Retirees	<u>7,616,000</u>	<u>1,044,000</u>	<u>0</u>	<u>8,660,000</u>
Total	17,999,000	1,874,000	878,000	20,751,000
Assets 7/1/2017	<u>11,264,000</u>	<u>1,173,000</u>	<u>549,000</u>	<u>12,986,000</u>
Unfunded Accrued Liability (UAL) 7/1/2017	6,735,000	701,000	329,000	7,765,000
Funded Ratio	62.6%	62.6%	62.6%	62.6%

Actuarially Determined Employer Contribution (ADEC)				
2018 / 2019 Fiscal Year ADEC	BOE Teachers	BOE Admins	BOE Ed Assistants	Grand Total
Normal Cost	\$525,000	\$35,000	\$69,000	\$629,000
Amortization of UAL	529,000	55,000	26,000	610,000
Interest	<u>6,000</u>	<u>1,000</u>	<u>1,000</u>	<u>8,000</u>
Total ADEC 2018 / 2019	1,060,000	91,000	96,000	1,247,000



Participant Counts and Average Attained Age As of July 1, 2017

Participant Counts			
Group	Active Participants	Retirees*	Total
BOE Teachers	1,455	92	1,547
BOE Admins	59	13	72
BOE Ed Assistants	358	0	358
Total	1,872	105	1,977

*Does not include spouses of existing retirees.

Average Age		
Group	Active Average Age	Retiree Average Age
BOE Teachers	44.8	68.1
BOE Admins	50.0	65.5
BOE Ed Assistants	49.7	N/A



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

Participant Counts			
Group	Active Participants	Retirees*	Total
BOE Teachers	1,502	111	1,613
BOE Admins	60	14	74
BOE Ed Assistants	362	1	363
Total	1,924	126	2,050

*Does not include spouses of existing retirees.

Average Age		
Group	Active Average Age	Retiree Average Age
BOE Teachers	44.3	69.2
BOE Admins	49.5	64.9
BOE Ed Assistants	50.3	78.0



Projected Benefit Payments

Fiscal Year Beginning July 1st	Currently Active Employees	Currently Retired Employees	Total
2018	\$535,000	\$643,000	\$1,178,000
2019	817,000	614,000	1,431,000
2020	961,000	654,000	1,615,000
2021	1,019,000	655,000	1,674,000
2022	1,137,000	667,000	1,804,000
2023	1,225,000	661,000	1,886,000
2024	1,251,000	669,000	1,920,000
2025	1,302,000	677,000	1,979,000
2026	1,354,000	684,000	2,038,000
2027	1,378,000	691,000	2,069,000
2028	1,417,000	697,000	2,114,000
2029	1,407,000	701,000	2,108,000
2030	1,529,000	705,000	2,234,000
2031	1,588,000	707,000	2,295,000
2032	1,710,000	707,000	2,417,000
2033	1,764,000	706,000	2,470,000
2034	1,925,000	703,000	2,628,000
2035	2,066,000	698,000	2,764,000
2036	2,199,000	690,000	2,889,000
2037	2,332,000	680,000	3,012,000



Target Allocation and Expected Rates of Return

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*	Weighting
Core Fixed Income	16.70%	1.65%	0.28%
High Yield Fixed Income	5.50%	3.05%	0.17%
Global Fixed Income	5.50%	1.85%	0.10%
Domestic Large Cap	32.60%	5.55%	1.81%
Domestic Small Cap	5.20%	6.00%	0.31%
Intl Developed Equity	27.50%	5.55%	1.53%
Intl Emerging Markets Equity	7.00%	6.50%	0.46%
	100.00%		4.66%
Long-Term Inflation Expectation			2.25%
Long-Term Expected Nominal Return			6.91%

**Long-Term Returns are provided by FIA. 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. The results support a rate between 6.75% and 7.25%. An expected rate of return of 7.2% was used.



Description of Actuarial Methods

Asset Valuation Method

Plan Assets equal the Market Value of assets.

Actuarial Cost Method

Changes in Actuarial Cost Method: None.

Description of Current Actuarial Cost Method: Projected Unit Credit

Normal Cost: The normal cost is derived for each active participant as the actuarial present value of the projected benefits that are attributed to the expected service in the current year. The normal cost for plan benefits is the total of the individual normal costs for active participants.

Unfunded Accrued Liability: The actuarial accrued liability equals the present value of future benefits that is allocated to years of service before the valuation date. The actuarial accrued liability is reduced by plan assets to develop the unfunded accrued liability.

The Unfunded Accrued Liability is amortized each year over 20 years on an open basis, as a level percentage. A 2% amortization growth assumption was used.



Description of Actuarial Assumptions

Changes in Actuarial Assumptions as of July 1, 2017

The valuation reflects changes in the actuarial assumptions listed below (the assumptions used before and after these changes are more fully described in the next section).

- Interest
- Inflation
- Healthcare Cost Trend Rates

Discount Rate

7.2% per annum. (Prior: 7.5%)

The discount rate is based on the expected long-term return of plan assets for OPEB plans that are funding.

Inflation

2.60%. (Prior: 2.75%)

This assumption is based on long term historical inflation numbers. While near term averages have been lower, we do not believe this trend will continue indefinitely and expect that there will be a reversion to the long term average.

The assumption was changed to better reflect expected experience.

Mortality

RP-2000 Mortality Table with separate male and female rates, with no collar adjustment, combined table for non-annuitants and annuitants, projected to the valuation date with Scale BB.

Mortality Improvement

Projected to date of decrement using Scale BB (generational mortality).

We have selected a mortality assumption commonly used by public pension systems (such as the State of Massachusetts). The plan does not have sufficiently credible data on which to perform a mortality experience study.



Actuarial Assumptions (continued)

Assumed 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%	1.0%	1.0%
51	27.5	27.5	1.0	1.3
52	27.5	27.5	1.0	1.8
53	27.5	27.5	2.0	2.3
54	27.5	27.5	3.0	2.8
55	38.5	27.5	4.0	4.8
56	38.5	27.5	6.0	6.3
57	38.5	27.5	7.0	6.8
58	38.5	27.5	8.0	7.3
59	38.5	27.5	11.0	8.5
60	22.0	27.5		
61-62	25.3	27.5		
63-64	27.5	27.5		
65	36.3	32.5		
66-69	27.5	32.5		
70-79	100.0	32.5		
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	.1400	.1200
1-2	.1100	.1050
2-3	.0800	.0875
3-4	.0650	.0750
4-5	.0450	.0675
5-6	.0350	.0600
6-7	.0300	.0525
7-8	.0275	.0475
8-9	.0250	.0425
9-10	.0250	.0400
10 +	use age-related rates until eligible to retire	



Actuarial Assumptions (continued)

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

Age	Male Rate	Female Rate
25-34	.0150	.0400
35	.0150	.0350
40	.0150	.0230
45	.0159	.0150
50	.0204	.0200
55	.0344	.0250
59+	.0400	.0290

Non-service-connected disability

Age	Male Rate	Female Rate
25	.0005	.0005
30	.0004	.0004
35	.0004	.0004
40	.0005	.0007
45	.0014	.0012
50	.0047	.0026
55	.0086	.0044
>=60	.0100	.0050

The actuarial assumptions in regards to rates of decrements above are based on the rates used by the State of Connecticut Teachers' Retirement Plan.

Health Care Cost Trend Rates

7.1% for 2017, decreasing 0.5% per year, to an ultimate rate of 4.6% for 2022 and later.

(Prior: 7.5% for 2016, decreasing 0.5% per year, to an ultimate rate of 4.5% for 2022 and later.)

Health care trend rates reflect both the current and long-term outlook for increases in health care costs. The short term trend rate is based on recent industry surveys, plan experience and near-term expectations. The long term trend rate is based on our general inflation assumption plus an adjustment to reflect expectations for long-term medical inflation.

Additional Assumptions

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

Percentage of Actives Eligible at Retirement who continue with Medical Coverage

100%.



Actuarial Assumptions (continued)

Percentage of non-Medicare eligible Teachers Continuing After 65

20%.

The actuarial assumptions in regards to utilization shown above are based on standard assumptions modified for certain plan features such as eligibility for full and early retirement where applicable and input from the plan sponsor.

Unit Costs – State Partnership Plan 2.0

	<u>Single</u>	<u>Dual</u>
Pre-65 Retirees	\$12,801	\$27,561
Post-65 Retirees (non-Medicare eligible)	22,908	49,807
Blended Active Rate	9,792	21,052

Premiums were used as the basis for per capita costs. Since premiums are retiree and age specific, no additional age grading was applied.

Sample per capita claims (prior)

Sample Age	Expected Claim (Male)	Expected Claim (Female)
45	\$6,973	\$9,720
50	9,107	11,325
55	11,950	13,194
60	15,394	15,388
65	19,601	18,652
70	23,579	21,816
75	27,058	24,489

The sample per capita claim for plans not integrated with Medicare was developed as follows: Using the total count of active participants eligible for post-retirement medical benefits and retirees currently electing medical coverage in a non-medicare supplement plan, 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.

For plans integrated with Medicare, the post Medicare eligible premium is assumed to be unaffected by age.



Actuarial Assumptions (continued)

Patient Protection and Affordable Care Act (PPACA)

High Cost Plan Excise Tax (“Cadillac Tax”): Effective in 2022, 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.



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.

Teachers

Eligibility for Medical & Dental Coverage:

Age 50 with 25 years of service, or;
Age 55 with 20 years of service, or;
Age 60 with 10 years of service.

Retiree Contributions: 50% of the premium for the earlier of 3 consecutive years or age 65, if hired prior to 7/1/2010 and have attained age 45, 15 years of service and 70 points as of July 1, 2016. Full premium thereafter.

Full premium for all others (not eligible as of July 1, 2016, as per above).

Administrators

Eligibility for Medical & Dental Coverage:

Age 50 with 25 years of service, or;
Age 55 with 20 years of service, or;
Age 60 with 10 years of service.

Retiree Contributions (Current Retirees): Board pays full cost until participant reaches age 65 if have attained 15 years of service and 70 points.

Retiree Contributions (Future Retirees – effective July 1, 2013): Retirees shall pay 50% of the cost until age 65.

After age 65, participant pays full cost.

Life Insurance:

Benefit: 2 times compensation for deaths prior to age 65.

Retiree Contributions: None.

Educational Assistants

Eligibility for Medical Coverage:

Age 50 with 25 years of service, or;
Age 55 with 20 years of service, or;
Age 60 with 10 years of service.

Retiree Contributions: Full premium.